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VERBALIZED ATTITUDES TOWARD PHYSICAL EDUCATION AND
PARTICIPATION IN PHYSICAL ACTIVITY

By

Kay Chambers

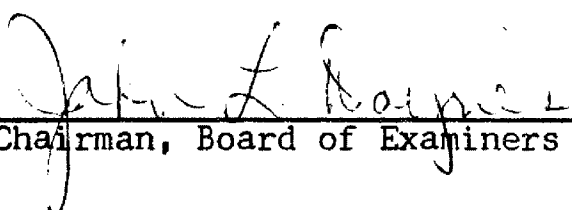
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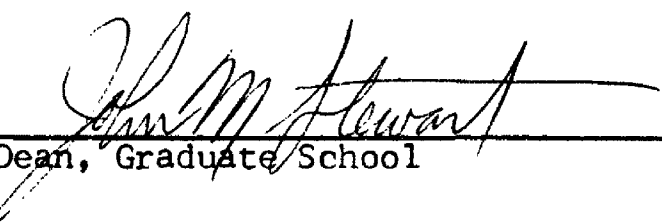
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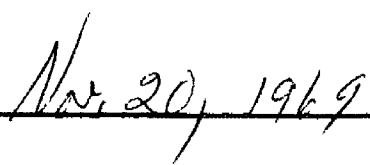
UNIVERSITY OF MONTANA

1969

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Verbalized Attitudes Toward Physical Education and Participation in Physical Activity. (75 pp.)

Director: John L. Dayries

The purpose of this study was to determine if verbalized attitudes toward physical education are necessarily indicative of actual participation in physical activity, and to discover if a galvanic skin response is a valid and reliable means of testing for attitudes. Fifteen women physical education majors and fifteen non-physical education majors were administered the Wear Physical Education Attitude Inventory after which they were re-administered parts of the inventory and responded verbally while being measured by the galvanic skin response. In order to determine the physical activity patterns of each individual a physical activity questionnaire was also completed by each member involved in the study. The Wear Physical Education Attitude Inventory was found to be a reliable test of attitudes and the group tested in this study scored significantly higher on the inventory than was previously reported in the Wear study. Majors in physical education were found to have a significantly more positive attitude toward physical education than non-majors. It was found, in this case, that a galvanic skin response is not a more effective means for determining attitudes toward physical education than is the Wear Inventory. Finally, it would appear that attitudes toward physical education are not necessarily indicative of actual participation in physical activity, therefore, an attitude study alone cannot be a valid instrument for determining the effectiveness or worth of a physical education program.

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K. C.

TABLE OF CONTENTS

CHAPTER	PAGE
I. THE PROBLEM	1
Introduction	1
The Problem	6
Statement of the Problem	6
Significance of the Problem	6
Limitations and Weaknesses of the Study	7
Definitions	7
II. REVIEW OF RELATED LITERATURE	9
Early Attitude Studies Toward Physical Education	9
The Wear Physical Education Attitude Inventory	11
The Effective Use of the Galvanic Skin Response	18
Verbalized Attitude Versus Overt Behavior	20
Summary	24
III. PROCEDURE	25
The Subjects	25
Equipment	26
Galvanic Skin Response	26
Recorder	27
Paper	27
Tests and Measurements	28
The Wear Attitude Inventory	28
The Twenty Stimulus Items	29

CHAPTER	PAGE
The Galvanic Skin Response Test	29
The Physical Activity Questionnaire	30
Testing Procedure	30
The Wear Physical Education Attitude Inventory plus the Twenty Stimulus Items	31
The Galvanic Skin Response	31
Collection of Material	32
Treatment of Data	33
IV. RESULTS AND DISCUSSION	34
The Wear Physical Education Attitude Inventory	34
The Galvanic Skin Response as an Effective Instrument for Measuring Attitudes	36
The Physical Activity Questionnaire	40
Discussion	41
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	54
Summary	54
Conclusions	55
Recommendations	56
SELECTED BIBLIOGRAPHY	57
APPENDIX	62

LIST OF TABLES

TABLE	PAGE
I. Comparison of Wear Scores of Majors and Non-Majors	35
II. Correlation Between the Wear Scores and the Galvanic Skin Response Scores	37
III. Correlation of the Wear Scores with Physical Activity for Majors and Non-Majors	38

CHAPTER I

I. INTRODUCTION

It has been traditional for physical educators to emphasize the study of appropriate attitudes as an important outcome of participation in physical education programs (1, 8, 9,). However, research varies as to whether behavior or attitude is more important in determining the effectiveness of physical education instruction and actual participation in physical activity. Mista (27) reports that attitudes are an important segment of an individual's reaction to a situation. Campbell (9) maintains that attitudes serve as the motivating media to condition a student's orientation to learning and to influence the use of skills and knowledge which have been learned.

The individual appears to approach an aspect of the environment if he interprets it to be a means to an end which will aid him in reaching his goal. He appears to avoid or attack it if it seems to interpose an obstacle. Duffy (12) suggests that covert directional responses such as sets or attitudes may be conceived of as constituting a preparation or readiness for overt responses. Therefore, if an attitude is, in truth, a pre-disposition to action or a state

of readiness to behave in a particular way, then for those exposed to physical education there is presumably a set attitude concerning the values of physical education. However, the important point of reference is that appropriate concepts and attitudes must be developed if desirable behaviors are to be acquired. In this light, the study of the behavior of individuals in reference to continuance of participation in physical activity seems ultimately more important than merely the study of attitudes held by the same individuals toward physical education.

Many definitions are available relevant to attitudes. Kenyon (20) defined an attitude as being, " A latent or non-observable, complex, but relatively stable behavioral disposition reflecting both direction and intensity of feeling toward a particular object; concrete or abstract." McDonald (26) believes that attitudes are generalized states of the individual which lead to or result in a wide variety of particular ways of behaving.

The formation of attitudes and resultant behaviors have been studied in different ways. Physiologically and neurologically the regulatory functions of the hypothalamus have long been recognized. The hypothalamus functions with the limbic system as a unit that regulates emotional and instinctual behavior. Ganong (14)

mentions that behavior is motivated not only by reduction or prevention of an unpleasant affect but also by primary rewards such as those produced by stimulation of the approach system of the brain. The neural center is said to translate messages from other parts of the brain into visceromotor and endocrine impulses. According to Kennard (12), the hypothalamus has been proven to be the center from which impulses are sent to all parts of the autonomic nervous system. The hypothalamus has been referred to as the stimulus-integration response, important in the study of the actual behavior of individuals.

Differences between individuals have been found in the degrees of activation, in fluctuations in activation, and in the speed of recovery from the effects of stimulation. These physiological variances are apparently associated with certain differences in behavior. The basic behavioral correlate of differences in activation, from which other behavioral correlates may be derived, appears to be that of a difference in responsiveness. A high degree of activation or frequent fluctuations in activation appears to indicate greater responsiveness of the organism, or a marked degree of excitability of the nervous system. This activation is one way of obtaining emotional, physiological measurements of attitudes and behaviors.

The electrical resistance of the skin depends upon some aspect of activity of the sweat glands. The sweat gland activity produces increased permeability of the cell membrane which results in a polarization change, and thus a change in electrical resistance. It is generally agreed that palmar skin resistance changes are dependent upon the organisms having an intact sympathetic nervous system and that they may be produced by stimuli which affect the level of activity of the central nervous system. Studies of the electrical phenomena of the skin have distinguished between the general level of skin resistance before stimulus is applied and the change in resistance which occurs upon the presentation of a stimulus. The change of resistance is known as the galvanic skin response.

Duffy (12) has reported that both the general level of skin resistance of the individual and the change in skin resistance appears to change in consistent fashion with changes in the degree of significance of the stimulus situation or with the demands of the situation placed upon the individual. Thus the galvanic skin response may be capable of measuring emotional and verbal responses to attitude and behavioral questionnaire items.

Some disparity does exist between the study of attitudes and the importance of the study of behavior.

Butler (8) maintains that short-term exposure to required physical education is not sufficient to positively influence attitude, nor is it sufficient to promote the desire to continue with activity on a voluntary basis.

Further research is imperative in order to determine if attitudes are related to actual behavioral patterns of individuals and their subsequent involvement in physical activity. It is generally assumed that attitudes are related to behavior, but behavior seems ultimately more important. It may be that women's attitudes toward physical education and activity are not necessarily indicative of their involvement and participation in physical activity.

McDonald (26) felt that observed behavior is not the attitude itself and therefore, a means must be found for measuring attitudes. Hickman (17) stated, "The logic underlying the use of opinions to measure attitudes is that there is a positive correlation between attitude and behavior." It seems then, when measuring attitudes to determine their importance in resulting behavioral patterns, that there should be consideration of present behavioral tendencies. It seems logical that a study should involve more than an analysis of attitudes toward physical education.

Research involving overt behavior would indicate actual involvement in physical activity. A study of this kind may include a physical activity questionnaire, a physiological measurement, or both.

II. THE PROBLEM

The problem of this investigation was to determine the relationship of verbalized attitudes regarding physical education to actual participation in physical activities. The sub-problems were as follows:

1. to determine the effectiveness of the galvanic skin response in determining attitude responses toward physical education and individual's emotional attachments to physical activity questions.
2. to determine the selection of an appropriate attitude inventory for measurement purposes.

Significance of the Problem

Several significant factors appear in a study of this nature. Attitude questionnaires and survey opinionnaires are often used to determine a person's like, dislike or attitude toward physical education, as a means of modifying or restructuring university and college physical education programs. Not only an attitude questionnaire but a behavioral study could be of more use in helping to revise these programs and it could

discover if the measurement of attitudes really is of primary or any importance in determining the desire to be active physically, or if behavior is independent of verbalized attitudes. Measurement of emotional attachments to questions with a galvanic skin response also might help to indicate the validity of the verbalized attitudes.

Limitations and Weaknesses of the Study

Due to the time involved in the analysis of the behavioral questionnaires and the administration of a galvanic skin response to each participant, the study was limited to thirty college women. The sample included fifteen physical education majors and fifteen non-physical education majors. No attempt was made by the tester to select subjects because of their skill level, their appreciation of physical activity, or because of their previous experiences in physical education classes. Moreover, the habits or present outside activity patterns of each individual were not controlled.

Definitions

For purposes of clarification and understanding, the following terms and their definitions were used in this study.

1. Galvanic Skin Response--A device for measuring the general level of skin resistance and the

changes of skin resistance due to an emotional stimulus (12).

2. Attitude--"The sum total of a man's inclinations and feeling, prejudices or bias; preconceived ideas, fears, threats and conviction about any specific topic" (23).

CHAPTER II

REVIEW OF RELATED LITERATURE

Although many workers have been interested in attitudes expressed toward physical education as a means of determining the effectiveness of certain physical education programs, researchers have done little to determine whether actual behavior in physical activity is related to a person's attitude toward physical education. The following account not only reviews most of the studies concerning attitudes held by various groups toward physical education, but also represents research which has attempted to use a galvanic skin response for various testing purposes and those few studies which discuss verbalized attitudes as compared with overt behaviors.

I. EARLY ATTITUDE STUDIES TOWARD PHYSICAL EDUCATION

One of the most significant problems in physical education today calls for measurement of the direction and focus of attitudes or motivational factors which inhibit or facilitate active physical participation and learning, by the individual or any group (21). The professional literature contains numerous studies related to the role that attitudes play in learning. Such studies have established that attitudes serve

as the motivating media to condition a student's orientation to learning and to influence the use of skills and knowledge which have been learned. Thus, attitudes play an important role; the attitude determines an individual's willingness to learn.

Studies show that as early as 1930, various researchers were interested in the measurement and evaluation of attitudes and opinions (1, 11, 24). Likert and Dobra (24, 11) developed a technique to measure attitudes in 1932. Graybeal (15) measured attitudes toward physical education for women to ascertain the differences, after a year of training, between two groups of students in the field of physical education. Students who participated in a required program of physical education demonstrated more positive attitudes toward physical education, toward knowledge of the subject, motor ability and posture, than those students who had not participated in a physical education program. Wiedemann and Alder (36) measured the attitudes and interests of undergraduate students with regard to physical education activities at Wellesley College. Findings indicated that participation in physical education service courses positively affected girls' attitudes toward physical education. These investigators also reported that giving students a freedom of choice in activities

as a major contributor to the improvement of attitude.

In 1932, Anderson (1) researched the attitudes of high school girls toward physical education activities and reported that attitudes were important in the desire to learn and participate in physical education. Riker (30) followed the early trend in studying attitudes and made a comparison of methods used in attitude research in 1944. The investigation involved a comparison of logical and empirical methods of attitude measurement to find out if they did or did not yield different results. The conclusion was made that substantially equivalent results were obtained by the Thurstone Method (empirical technique) and by simple self-rating scales (logical technique).

THE WEAR PHYSICAL EDUCATION ATTITUDE INVENTORY

These initial attempts were followed up in 1951 when Wear (35) reported an attitude inventory test which was deemed capable of making a reliable and valid assessment of the direction and intensity of individual and group attitudes toward physical education of men students attending the State University of Iowa who had participated in the University's physical education service program prior to taking the inventory.

Subsequently, Wear (34) constructed equivalent forms of the inventory which were reported to be statistically reliable. Scores on the two forms have been shown to correlate highly with other measures of attitudes and to differentiate at high levels of confidence between groups of subjects. The Wear Inventory, which was used as a part of this study, has been used previously by the following researchers.

Brumbach and Cross (6) used the Wear Inventory when they measured the attitudes toward physical education of all male, lower division students entering the University of Oregon. Their main findings indicated that, as a group, these students had a rather favorable attitude toward physical education. Moreover, when comparing the mean score of this group (119.72) with the means reported by Wear, the Oregon students' score was significantly higher.

Plummer (29) presented various factors which influenced the attitudes of college women in physical education. The results of this study indicated that physical appearance, physical education background, finances, competition of other activities, and the physical plant affected attitudes and interests of college women toward physical education. Bell,

Walters, and staff (3) studied the attitudes of women in an attempt to help evaluate the physical education program. These researchers found a positive and significant relationship between women's attitudes and the importance of sports and dance, as a part of their recreation program. They also found a relationship between attitudes held by the women and the extent to which they enjoyed physical education classes. All students rated high on the scale and there was a definite relationship between the extent to which the instructors were interested in them as individuals, and the extent to which they were motivated to continue in physical activities on their own. When using Wear's Inventory plus the Likert Technique, Kappes (19) discovered that attitudes of college women toward the physical education department were very favorable. In studying the attitudes of University of Washington women students toward physical education activity, as measured by the Wear Inventory, Broer (4) discovered that the majority of freshman and sophomore women students enrolled in physical education activity classes expressed a very favorable attitude toward physical education as an activity course. A high percentage of these students agreed that physical education activity classes contributed to their social, mental and physical health.

In 1962, Lemen (23) utilized the Wear Inventory and studied the relationship between selected variables and attitudes of college women toward physical education and certain sports. Major findings indicated that college women prefer to participate in individual sports rather than team sports in their leisure time. Positive and significant correlations were obtained between the degree to which subjects enjoyed their high school physical education program and their present attitudes toward physical education. Another study involving college women's attitudes toward their high school physical education program was recently conducted by Mista (27), who concluded, after using the Likert Technique, that attitudes are an important segment of an individual's reaction to a situation. Significant differences in attitude toward physical education existed between the following groups of college freshman women.

1. Those earning interscholastic letters in high school had more favorable attitudes than those who did not earn such letters.
2. Those who participated in organized extra-school physical activity programs had more favorable attitudes than those who did not participate in such programs.

3. Those who rated themselves above average in physical skills had more favorable attitudes than those who did not rate themselves as high.

Broer (5) again stated that the Wear Inventory was a valid instrument for testing women's attitudes when she evaluated the basic skills curriculum for women of low motor ability at the University of Washington. The results showed that the background of basic physical education instruction was important in improving the attitude toward physical education of the low-motor ability students.

In an analysis of general attitudes toward physical education, Keogh (21) tried to determine if students differed in their attitudes toward the general benefits of physical education. Responses to the Wear Physical Education Attitude Inventory (form-A) showed that men and women differed little in their attitudes toward physical education. He also concluded that understanding the nature of attitudes toward physical education is essential as a guide in developing them, since one of the most important concerns in school physical education programs is that students develop positive attitudes toward physical activity after leaving the organized school program.

In an attempt to investigate the relationship between strength and attitudes toward physical education, among 200 college women, Wessel and Nelson (37) found that women enrolled in physical education classes at Michigan State University expressed a very favorable attitude toward physical education as an activity course. Significant correlations were found between strength and scores on Wear's Inventory, self-rating scale, and the three questions used in his validity study. Back strength showed the highest relationship with attitude measures. These investigators indicated that lack of strength may be a factor in negative personal feelings resulting from repeated failures in any physical activity encountered.

Brumbach (7) utilized the Wear Inventory in an attempt to determine the effect of a special conditioning class upon students' attitudes toward physical education. This conditioning class was special, because a 45-year old man was the instructor. Students were found to be stimulated to greater exertion from his ability to lead them and it was postulated that greater results can be obtained through greater motivation.

More recent information further supports the use of Wear's Inventory as an instrument for measuring attitudes. Hickman (17) compared students from different social classes and their attitudes toward physical

activity with their participation in physical activity. The investigator concluded that there was a positive correlation between attitudes and behavior.

Campbell (9) divided the Wear Inventory into four different areas. He considered the social, mental-emotional, physiological, and general categories of physical education attitudes. This study was undertaken to analyze responses to specific statements and selected descriptive information to determine if students differed in their attitude toward physical education as a result of the size of high school attended, the program of physical education experienced, or the nature of academic interests. Campbell concluded that no significant variations in attitudes concerning physical education can be predicted by the size of high school attended, the area of academic interest or preference of physical activity but maintained from this study that the attainment of attitudes according to expressed objectives of physical education can be measured by the Wear Physical Education Attitude Inventory.

Again in 1968, Campbell (10) administered form A of the Wear Attitude Inventory to one randomly selected physical education class of seventh grade boys, one class of eighth grade boys and one class of ninth grade boys in each of five junior high schools.

The mean inventory score for each grade was found to be equal to or superior to the mean reported in Wear's validation study. On the basis of results from the study the author concluded that the Wear Attitude Inventory was an appropriate instrument to measure attitudes of junior high school boys toward physical education.

II. THE EFFECTIVE USE OF THE GALVANIC SKIN RESPONSE

Although there are no studies available relevant to the testing of attitudes toward physical education by a galvanic skin response, recent research shows the effectiveness of the galvanic skin response in the following areas:

1. Skin conductance levels as related to performance and motivation
2. The relation of galvanic skin response to task difficulty
3. Galvanic skin conductance as related to ring-peg performance
4. Arousal level
5. The relationship between motor performance and arousal.

It has been suggested that skin conductance levels are related to performance and to motivation and that galvanic skin response is an index of an

attitude of the organism directed toward overcoming difficulty (12). Psychologists have also suggested that personality patterns or traits are related to autonomic behavior and that some estimate of behavior may be assessed through measures of skin conductance (12).

Lakie (22) was concerned with the relationship of galvanic skin response to task difficulty, feeling, emotion, and motivation. Data was obtained from thirty-nine university students during two sessions using a hand dynamometer and it was found that as task difficulty increased the galvanic skin response increased. It was also found that subjects dichotomized by scores on personality measures were not differentiated by galvanic skin response scores. Lastly, it was found that subjects motivated to achieve success had higher galvanic skin response scores on difficult tasks than did subjects motivated to avoid failures.

Skin conductance is the result of sweat gland activity. Ryan (32) attempted to define the relationship of galvanic skin conductance to ring-peg performance. He determined that changes in skin conductance distinguished between good and poor performances in the vigorous skill but not in the less vigorous one. The researcher failed to prove that good performance on a motor skill can be predicted from skin conductance

measures. Since sweating is a reflection of the temperature control system of the body, the palms, fingertips and soles of the feet at extreme temperature, Ryan felt that the environment in which his study was run might have accounted for the differences and that sweating seemed to be a logical answer for the aberrant finding.

The definition of arousal level has usually been in terms of certain physiological measures such as galvanic skin conductance. Ryan (31) conducted a further study involving the relationship between motor performance and arousal. The analysis of data indicated that there was a relationship between arousal, as measured by skin conductance, and performance on a gross motor skill. Further results showed that arousal precedes performance.

III. VERBALIZED ATTITUDE VERSUS OVERT BEHAVIOR

It has been a common observation that people maintain consistency between their beliefs and their actions (26). The search for literature by the writer (25,13,2), however, uncovered no significant amount of support for this proposition or the proposition that behavior may be independent of beliefs or attitudes. It appears that psychologists have ignored the problem, perhaps considering the proposition

as too obviously contaminated to test.

This research study assumed more significance, however, in light of Greenwald's (16) more thorough search of literature in the study of behavior change following a persuasive communication. Greenwald's study involved four experiments demonstrating that a communication advocating the importance of an action, produced a change both in the belief that the action was desirable and in the probability of choosing to perform the action. When persuasive communication causes a change in belief, will behavior relevant to this belief change? Past studies directly pertinent to this problem have failed to obtain such behavior change (16). By saying that behavior change can be produced by a persuasive communication, Greenwald cast considerable doubt upon the possibility that the belief changes observed in the four experiments were mediated by behavior change. However, Greenwald felt he must avoid any further specific statements about the direction of causality in the underlying process.

When measuring verbal attitudes, the situational characteristics can be markedly different than characteristics in the overt situation. The disparity between the situational characteristics which influence respondents' role-playing in each setting may con-

tribute to the inconsistency (13). A recent study by Fendrich (13) examined the relationship between expressed racial attitudes and overt behavior. This project looked at characteristics of the research setting which influence the expression of attitudes and overt behavior. The researcher gathered data by testing from the undergraduate population at a large university, and tested the following hypotheses:

1. The greater the degree of favorable commitment, the greater the degree of overt behavior.
2. The degree of relationship between commitment and overt behavior will be greater than the relationship between verbal attitudes and overt behavior.
3. The greater the extent to which attitudes are expressed in a research setting involving previous commitment to the attitude object, the greater the relationship between verbal attitudes and overt behavior.

Verbal attitudes were considered to be the outward manifestation of two internal processes. One is the acquired behavioral dispositions toward a class of objects and the other is the definition of the situation. Commitment was considered as the act of making perceived voluntary decisions to participate in a consistent pattern of action that involves some risk. Overt behavior referred to observable acts directed toward the attitude object. The results of the study show that verbal attitudes

can either be consistent or inconsistent with overt behavior, depending upon the way respondents define the attitude measurement situation. The results cautioned against any simplistic interpretation of verbal attitude relationship to overt behavior. The data also suggested that measures of commitment may be better predictors of overt behavior than measures of attitudes if the measurement situation is not contaminated by role-playing unrelated to overt behavior with which respondents feel force to be consistent. Hyman (18) proposed that the inconsistency between verbal attitudes and overt behavior results from inconsistencies between the interpretation researchers put upon attitude measurements and the measurements' relation to behavior.

Beijk and Knip (2), after researching this problem in the Netherlands, attempted to determine whether attitudes expressed by performance on verbal tests correlated with overt behavior. The correlation between verbal attitude scores toward socialist groups and actual membership in a socialistic group was significant at the .01 per cent level of confidence, clearly indicating support for the connection between verbal attitudes and actual behavior.

However, in an attempt to delineate the relationship between attitudes and behavior, Lynn (25) supports the contention that behavior can be independent of

verbalized attitudes. Lynn's findings showed no relationship between attitudes and behavior of a group of Negro subjects and experimenters. The data suggested that prediction from attitudes to behavior for liberals was not possible, but prejudiced subjects behaved largely in accordance with their attitudes.

SUMMARY

From presented research studies it is clear that attitudes are not necessarily indicative of action and, therefore, behavior may be independent of verbalized attitudes. Although no studies have been discovered relevant to this problem as related to physical activity, research indicated there could be a definite difference between an individual's attitude and his actual behavior toward a specific object. This may suggest that studying only attitudes toward physical education, as a means of evaluating physical education programs and classes, is inadequate and invalid. Behavior could be what is important if physical educators desire to determine if a person will continue physical activity after participation and learning takes place.

CHAPTER III

PROCEDURE

I. THE SUBJECTS

Thirty subjects were selected during the Winter Quarter from the junior and senior population of women enrolled at the University of Montana. Fifteen of the women selected for the study were non-physical education majors. The remaining fifteen women were physical education majors. The majors were volunteers enrolled in a "Methods of Modern Dance" class which included a majority of the junior and senior women physical education majors enrolled at the University of Montana. The determination of the initial group was accomplished by obtaining a list of all junior and senior women who were not physical education majors and who had completed their six-quarter requirement in physical education. The subjects were then randomly selected and contacted. Those who expressed interest in the project and who volunteered their time, participated in the study.

The subjects were informed that the study involved a thesis research project and their role would be three-fold:

1. To fill out a questionnaire which would take approximately fifteen minutes;
2. To fill out a physical activity questionnaire which would call for fifteen minutes of

their time, and

3. To meet with the investigator for one-half hour on the second day of testing.

The women were informed that punctuality was essential in order to insure success of the study. They were not informed of the nature of the study or about the instruments involved until each aspect of the testing was completed. This was a precautionary measure to insure that the subjects would not attempt to pre-determine their attitudes toward physical education and to guard against any one person becoming physiologically upset previous to the galvanic skin response measurement.

II. EQUIPMENT

Galvanic Skin Response

Subjects were connected to the Esterline Angus galvanic skin response which was on loan from the psychology department at the University of Montana. This machine was used to measure each individual's emotional involvement to a question. The emotional involvement was recorded by the movement of a recording stylus. The movement of this needle varied from the base-line when there was a reaction. The intensity of the galvanic skin response could be varied depending upon each individual's palmar skin conductance, which

was determined by the placement of two electrodes. One electrode was placed in the center of the person's palm and the other in the middle of the back of the hand. Electrode jelly was placed on the skin and on the electrodes to assure conductance of the signal to the electrodes. Flexible wires carried the galvanic skin response signals from the electrodes to the recorder.

Recorder

An Esterline Angus Graphic Recorder was used to record the deflection from the base-line when an emotional reaction occurred. The recorder included an inkwell and stylus and as intensities showed on the galvanic skin response a wire carried the current to the recorder, causing a readable deflection, away from the base-line, on the Esterline Angus recording paper.

Paper

Esterline Angus rectilinear graphic paper, (Chart number 1710E), was used to record the deflections.

III. TEST AND MEASUREMENT

The Wear Attitude Inventory

This device was used to determine each individual's attitude toward physical education. The short-form, Part A of Wear's Inventory consisted of thirty items directed toward physical education, with some of the items worded positively and others worded negatively.

The Likert Technique (24) was used for scoring purposes. This involved answering the questions as quickly as possible in different degrees of agreement or disagreement: Strongly Disagree, Disagree, Undecided or No Opinion, Agree, Strongly Agree. The Likert method did not require judges, nor did it assign a definite scale value to statements. The responses to the statements were arbitrarily weighted and an individual's score on the inventory was the sum of the scores made on the various statements. The response most favorable to physical education received a score of five, while the least favorable response received a score of one. The Likert method of scoring showed the poorest possible score being thirty, while a highly favorable attitude could score one hundred and fifty points, the maximum. In between was the completely neutral position, which could result in a score of ninety. Simply a favorable reaction to the

thirty statements would yield a score of one hundred and twenty. On the contrary, an unfavorable attitude would result in a score of sixty.

The Twenty Stimulus Items

This information was adapted from materials developed at the Human Performance Laboratory at Pennsylvania State University. The items were attached to Wear's Attitude Inventory for use in this research project. The sole function of these items was to include statements that would produce greater emotional involvement and abrupt responses when the subjects were tested on the galvanic skin response. This material was used to determine if more pointed questions would yield greater reactions toward physical education than would Wear's basic attitude statements. These items were answered to during the same session at which responses were made to the attitude questionnaire and again during the galvanic skin response testing in the same manner responses were made to the Wear Inventory.

The Galvanic Skin Response Test

The galvanic skin response was measured following the administration of the Wear Attitude Inventory plus the twenty stimulus items. The measurement involved reacting to twenty questions (ten Wear--ten stimulus items) previously answered on the inventory. The

reactions to these questions served as a post-test as well as a means of determining whether galvanic skin response was an effective device for measuring attitude, strength or involvement.

Physical Activity Questionnaire

The questionnaire was also adapted from materials developed at the Human Performance Laboratory at Pennsylvania State University. Its purpose was to assess the physical activity pattern of each subject and to relate these findings to those from the Wear Physical Education Attitude Inventory, and to discover if there was a difference between attitudes held toward physical education and actual participation in physical activity.

IV. TESTING PROCEDURE

The testing of the subjects was conducted during the 1969 Spring Quarter at the University of Montana. The Wear Physical Education Attitude Inventory was given to the subjects in the Women's Center. The Physical Activity Questionnaire was given to the subjects to be taken home, completed, and returned to the tester. The galvanic skin response measurement was also conducted in the Women's Center.

The Wear Physical Education Attitude Inventory plus the Twenty Stimulus Items

Before the attitude testing, the subjects selected a forty-five minute time period during which they could be accessible to the investigator two days during one week. On the first of these days the subjects were asked to fill out the Wear Physical Education Attitude Inventory plus the twenty stimulus items. Those subjects who were assigned times on Monday, April 21, 1969, came again on Thursday, April 24, 1969. Those individuals who filled out the questionnaire on Tuesday, April 22, 1969, were involved in the second part of the study on Friday, April 25, 1969.

The Galvanic Skin Response

On the assigned Thursday or Friday of the testing week, the subjects participated in the second part of the study.

The subjects were connected to the measuring instrument by means of palmar skin conductance electrodes. Each woman sat quietly with her back to the machine during the questioning and recording period. The questions were then delivered orally by the investigator, one at a time, and orally responded to by the individuals. These responses were recorded both on the Esterline

Angus recording paper, next to the deflection caused by the apparent emotional involvement with each question, and above the previous responses on each subjects Wear Attitude Inventory. Five seconds were allowed between each question and each response, thus allowing time for the recording stylus to return to the established base-line. In this way, each deflection could be measured from a common starting point.

Following the questioning, each subject was informed of the nature of the study and asked the following questions:

1. Are you content in your situation at the present time?
2. Did you remember how you had previously responded to these same questions on the Wear Attitude Inventory?

The galvanic skin responses were compared with the previous responses on the Wear Attitude Inventory. At this time, the physical activity questionnaires were obtained from each subject.

Collection of Material

Following completion of the testing, each subject's Wear Physical Education Attitude Inventory, twenty stimulus items, physical activity questionnaire and

galvanic skin responses were attached together for further reference and future statistical analysis. These materials appear in the Appendix of this paper.

Treatment of Data

The statistical treatment used to analyze the Wear Attitude Inventory was a t-ratio. The comparison between the first ten questions on the galvanic skin response were analyzed with a Pearson r correlation and a t-ratio. Calculation of the Pearson r between the majors' scores and the non-majors scores, was done by the scattergram method. These formulas appear in the Appendix.

CHAPTER IV

RESULTS AND DISCUSSION

I. The Wear Physical Education Attitude Inventory

The study required a reliable and valid index of an attitude inventory. Several earlier researchers had used the Wear Physical Education Attitude Inventory to determine the attitudes of various groups toward physical education. The available evidence indicated that the measurement of attitudes, by the Wear Inventory, had been proved effective and therefore, was a good index for testing group attitudes toward physical education.

The Wear Inventory tested attitudes toward physical education, in his original validation study, and yielded a mean score of 114.59. In comparison, the mean reported from this study, which appears in Table I, was 124.733 from the total group, which would indicate that the subjects involved in this project scored much higher on the attitude inventory than did that group originally tested by the Wear study.

In further analysis, as included in Table I, the majors' score on the Wear Attitude Inventory was 132.467, and the non-majors' score reported was 117.00. As is shown by the t-ratio in this table, the majors' score was significantly higher than that achieved by the non-majors.

TABLE I
COMPARISON OF WEAR SCORES OF MAJORS AND NON-MAJORS

Majors	Total Wear	Non-majors	Total Wear
J.B.	143	C.G.	134
J.F.	143	B.S.	133
C.J.	142	C.D.	131
S.I.	140	B.D.	130
P.B.	138	T.M.	127
M.M.	137	D.D.	126
T.F.	136	K.L.	123
C.D.	134	C.H.	122
S.S.	133	S.F.	120
P.H.	132	H.C.	115
J.C.	127	K.F.	114
R.A.	127	T.M.	107
B.E.	120	S.R.	106
A.B.	119	D.C.	96
K.K.	116	R.B.	71
Mean	132.467		117.00
S.D.	8.58		16.23
t ratio	6.61*		

*Significant beyond the .001 per cent level of confidence

The Wear Physical Education Attitude Inventory was again tested when a reliability test was made on the first ten Wear Attitude questions. As is reported in Table II, the mean reported on the initial testing on the first ten Wear questions was 44.400. The mean reported from the galvanic skin response test was 43.233. A high correlation was found between the two testings when an r was determined to be .81. A t -ratio discovered that a significant correlation existed between the two tests beyond the .05 per cent level of confidence.

Table III indicates the disparity that existed between scores made on the Wear Inventory and the average number of hours of physical activity each individual participated in each week. The majors indicated no significant correlation between their attitude toward physical education and their actual involvement in physical activity. The non-majors reported a higher correlation of .58, which suggested that their attitudes were more indicative of their participation than were the majors' attitudes.

II. The Galvanic Skin Response As An Effective Instrument For Measuring Attitudes

The results of the responses made while being measured by the galvanic skin response as compared with the Wear

TABLE II
CORRELATION BETWEEN
THE WEAR SCORES AND THE G.S.R. SCORES

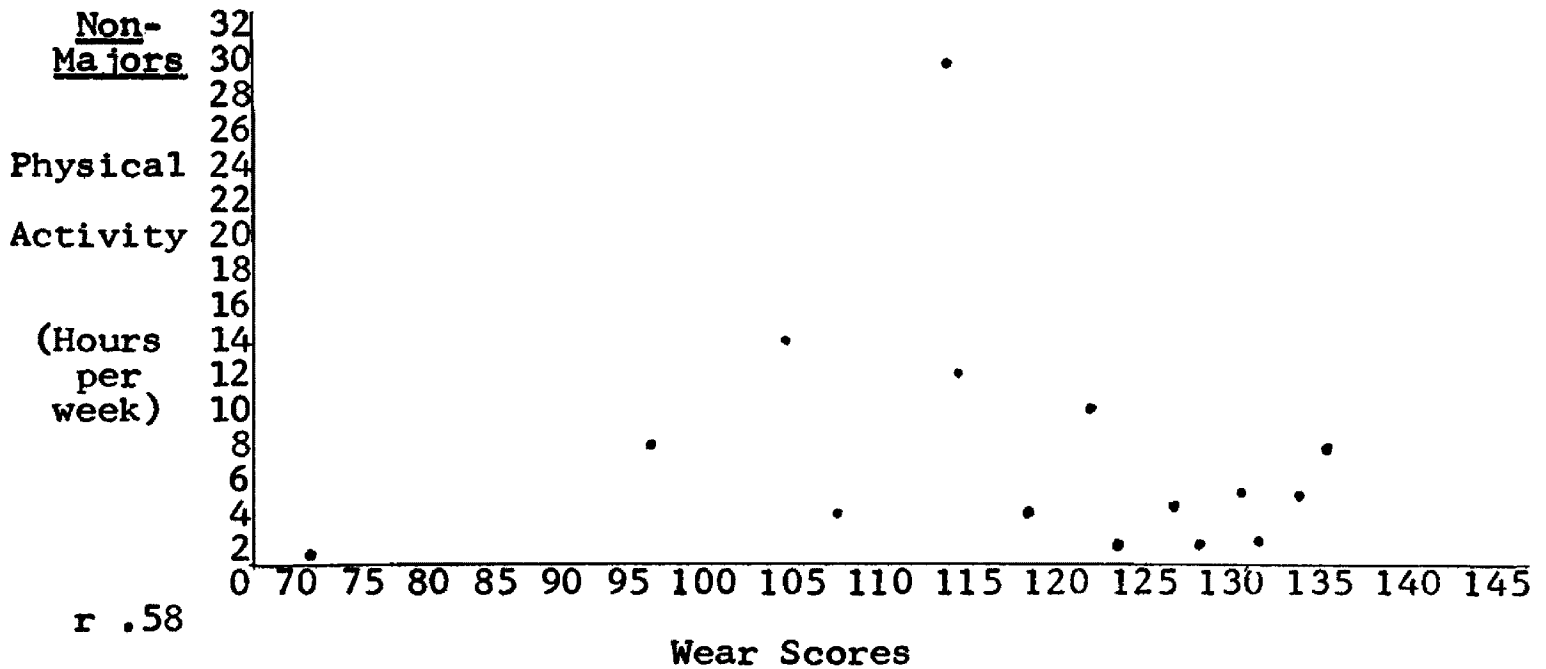
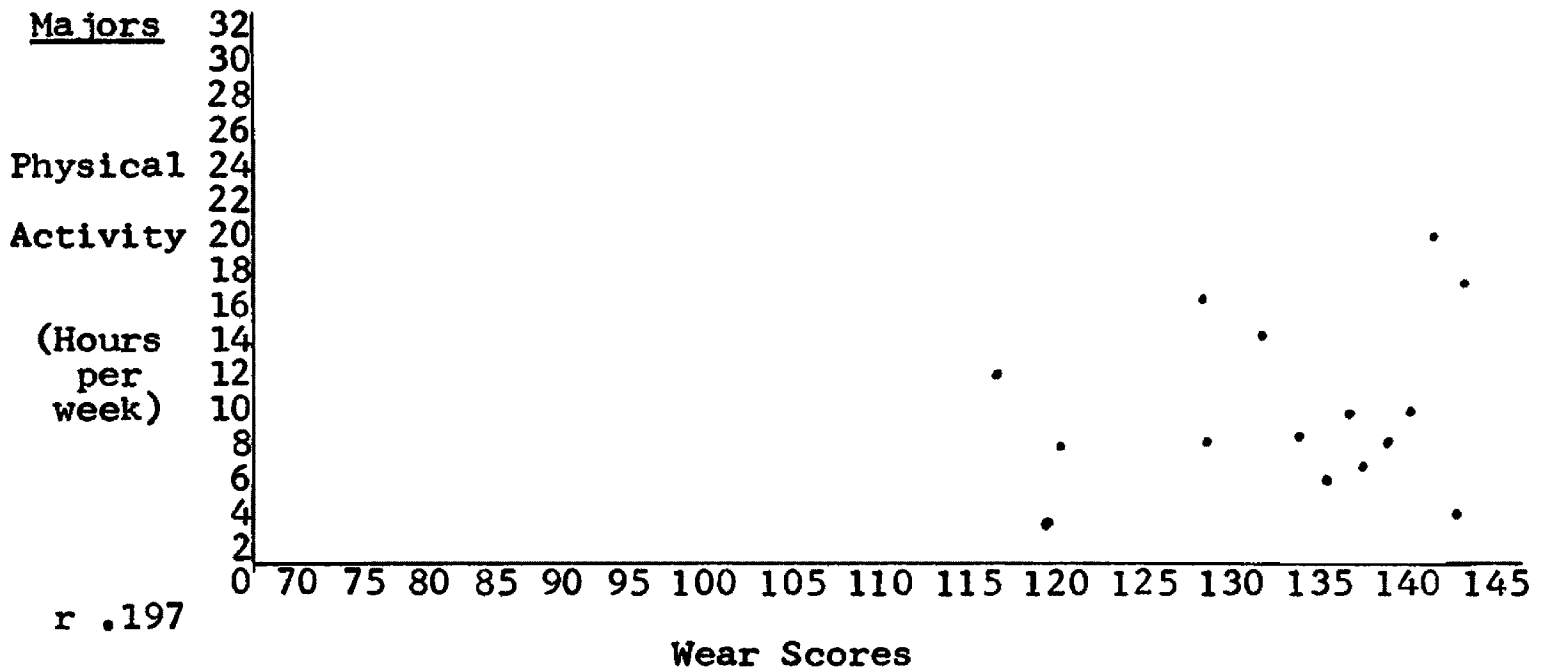
First ten - Wear	First ten - G.S.R.
48	44
46	49
48	41
49	48
49	46
49	48
48	48
47	46
48	43
48	47
47	46
48	44
45	45
48	47
43	43
46	44
47	44
47	41
46	44
43	40
44	40
42	41
47	48
40	43
38	43
41	40
40	37
40	38
38	37
22	32
Mean 44.400	43.233
S. D. 5.35	3.91
r	.81
t ratio	2.05*

* Significant at the .05 per cent level of confidence

TABLE III

CORRELATION OF PHYSICAL ACTIVITY TO WEAR SCORES

MAJORS AND NON-MAJORS



Physical Education Attitude Inventory are found in Table II. The subjects were connected to the device on the second day of testing and were again administered the first ten Wear questions plus ten stimulus items. The purpose of the previously discussed stimulus items was to produce a stronger attachment to a question than was expected from the Wear items, so the researcher could compare results with a stronger involvement.

The Wear Attitude Inventory had previously been given to the subjects by asking them to fill out an inventory sheet. It was thought that individuals may not necessarily answer exactly how they felt with this method since there might be some personal attachment with the tester. On an inventory sheet it would also be possible to pre-determine opinions, and as a result, the galvanic skin response was used to determine if some responses elicited strong galvanic skin deflections. These deflections could suggest either a strong involvement or concern regarding an inappropriate answer which is representative of the polygraph concept. As is reported in Table II, a high correlation was found between the Wear scores and the galvanic skin response scores. The subjects showed there appeared to be very little that can recommend the

galvanic skin response rather than the questionnaire when attempting to determine attitudes toward physical education. Deflections normally were not indicative of verbal responses and questioning of the participants revealed that mood, being content in their school situations, and an interest in the study, accounted for the variety of deflections. The experience of the investigator with the galvanic skin response might also have been a reason why lies were not suspected or detected.

III. The Physical Activity Questionnaire

This questionnaire was designed to determine the physical activity patterns and habits of the thirty women involved in this study. The results are reported in the discussion section of this chapter.

The questionnaire was used in addition to the attitude inventory to discover if attitudes toward physical education and behavior or actual participation in physical activity differ. Previous studies indicated that questionnaires had been used to determine attitudes toward physical education. Similarly, several researchers have indicated that the Wear Inventory is a valid means of testing for attitudes, which suggests

that attitudes and behavior are indicative of one another. The beliefs and actions of individuals had not been separated or believed to be different in this area. The results of this study support the findings that there is every reason to believe attitudes are not necessarily representative of action and, therefore, merely attitude studies could be invalid if they suggest certain behavior or actual participation in physical activity, as a result of an attitude study toward physical education.

IV. Discussion

In previous research experiments it was suggested that the Wear Physical Education Attitude Inventory was a reliable and valid index for measuring attitudes. In determining the attitudes of certain individuals toward numerous physical education programs, various experimenters utilized this inventory and as a result suggested much information useful in determining various groups attitudes toward physical education.

On the first day of the testing week, in an attempt to discover if a significant difference existed in attitudes toward physical education between women

who majored in physical education and those women who were striving for other university degrees, the Wear Inventory was administered. It was discovered with a t-test, that physical education majors had a significantly more positive attitude toward physical education than did non-majors at the .001 per cent level of confidence. This score is reported in Table I.

On the second day of the testing week a galvanic skin response was measured from each participant. It was believed that this instrument could prove to be a more valid means for testing attitudes since it is feasible a person may not answer how he actually feels on simply a questionnaire. Table II shows the high correlation discovered between the two testings and the significant t that existed at the .05 per cent level of confidence. Although reliability was established between written responses on the Wear Inventory and verbal responses to the same questions, it was suggested that a galvanic skin response was not a more reliable way of testing for attitudes than was the Wear Inventory.

With this device, the researcher was unable to establish a consistent baseline and, as a result, it was absolutely impossible to graph or distinguish a

response of strongly agree from strongly disagree or a response of undecided. In many instances a response of undecided indicated a much greater deflection on the graph paper than did an answer of strongly disagree or strongly agree. The subjects indicated that this was due to the fact that with an answer of strongly agree they were definite and sure of their feelings and as a result there was no distinguishable emotional involvement. An undecided response bothered the individuals and a marked skin response was recorded. Other factors affecting the baseline were:

1. The amount of sleep the night before the testing seemed to affect the consistency of the baseline as did any specific emotional involvement with other outside activities.
2. Contentment accounted for the various deflections which seemed to occur for no explainable reason. Those individuals who remarked they were not content with their school situation generally had extremely inconsistent baselines and haphazard deflections.
3. The pause between questions tended to make the subjects nervous and as a result a deflection indicative of the verbal response was not recorded. Frequently, responses were

observed on the recorder before an answer had been verbalized. This may suggest that the individuals were anticipating a question and as a result the deflection may not have been representative of the response.

It was obvious none of the questions administered during the galvanic skin response measurement elicited a maximum deflection on the recorder. When a question was interjected such as, "Would you take birth-control pills as a preventative measure?", the indication was much greater. This may again suggest that any measurement of deflection, to differentiate one response from another is unfeasible. Therefore, as an investigator, under these conditions, one is incapable of distinguishing a physiological reaction from a verbal response with a galvanic skin response. The use of the galvanic skin response as a more effective instrument for testing attitudes, than a questionnaire, is unlikely.

Various information was reported from the physical activity questionnaires, and the investigator chose certain relevant questions to discuss here.

1. It was discovered that twenty-four of the thirty participants felt that they did not receive enough physical activity without engaging in games and sports. Three of the women who reported they did not need games and sports to get physical activity were the same three who placed at the bottom of the Wear Attitude Inventory.
2. Most of the subjects learned to play the games and sports in which they participated in school and in college physical education classes or from friends. The majority showed they had participated in the same type of physical activity throughout their college attendance.
3. Fifty per cent of the girls' parents did or do participate regularly in sports and physical activities, while the same parents did not encourage their participation in the same or other activities.
4. More than fifty per cent of the subjects who participated in some physical activity stated that their friends did not enjoy or participate in these same activities.
5. Nearly all of the individuals said that they found the feeling of physical fatigue, resulting

from strenuous physical activity, a pleasant one, and although some of the women were not physically active at all, they reported the same feeling to be a pleasant one.

6. The average number of hours the subjects participated in some physical activity each week was found to be five, although several were active over twenty hours each week. It was discovered that those who participated less than formerly, did so because of a certain work schedule, fewer activity courses, bigger academic loads, or a lack of desire to compete. Those who were involved to a greater degree than previously, stated this was because of more physical education classes, more available facilities, new interests and that they had become more adept at different sports and now enjoyed the activity.
7. The number of years of formal preparation in physical education was found to average 2.3 years in high school and 2.56 years in the college program. It was noticeable that more physical education was required in college than in high school and as a result those who did not have a formalized program in high school commented that they detested being forced to

take six quarters of activities at the university level.

8. The majors reported an average of 9.94 hours of participation in physical activity each week whereas the non-majors reported a lower mean of 7.3.

The investigator chose to discuss at length those questionnaires of the three individuals expressing the most favorable attitude on Wear's Inventory, the three persons indicating a neutral position, and the three women holding the position of least favorable attitudes. In comparison with those scores reported by Wear where 150 indicated a highly favorable attitude toward physical education and thirty represented the least favorable score, none of the subjects involved in this study scored lower than 71. This was an attempt to discover if there was any real discrepancy between attitudes held toward physical education and actual participation in physical activity.

J. F. was among the three women expressing the most favorable attitude toward physical education on the Wear Physical Education Attitude Inventory. The score she received was 143, which indicated that she had a highly favorable attitude toward physical education. This subject was also a senior, majoring in physical education. J. F. responded to the questions submitted on

the physical activity questionnaire in an extremely positive manner, indicating that she was active in a great variety of sports, enjoyed the feeling of physical fatigue and felt it was necessary to participate in sports and games in order to receive an adequate amount of physical activity. Contradictory to this, J. F. participated much less each week than the average number of hours expressed by the total group. She accounted for her participation by mentioning she had too heavy a load and no activity classes. Despite the fact that this individual was interested in participating more, it would appear that the person's involvement in physical activity did not relate to her enthusiasm and attitude toward physical education and physical activity.

The second individual who placed at the top of the Wear Attitude Inventory also received a total score of 143. J. B. was a physical education major and mainly participated in volleyball, softball, football, basketball and swimming. She had not participated regularly during college because of a lack of time to become involved in the specific activities she enjoyed. Her parents did not participate in sports and games nor did they encourage her participation in activities. She exhibited a high attitude score on the Wear analysis, although she did not participate

regularly in physical activity.

The last of those individuals expressing a highly favorable attitude toward physical education received a score of 143 on the Inventory. C. J. participated in track and baseball although she discontinued involvement in most team sports after she entered college because of a lack of time. This subject also felt she received enough physical activity at work without engaging in games and sports. C. J. was a physical education major and her parents did encourage her participation in the same activities in which they participated and in which she now participates. This individual would rather watch most sports than actually participate, however, she was extremely active when compared to the average found in this study. In this case the individual had both a positive attitude toward physical education and was extremely active physically.

The three women expressing a neutral attitude toward physical education recorded the score of 127.

This was an average attitude in this study, however, J. C., the first of the three subjects, was very inactive. She learned to ski and appreciated what it did for her physically, however, this activity did not provide her year-around pleasure. It is obvious that if someone did only an attitude study on this subject they might assume her needs were being met. It seemed apparent that she

would have participated more if she had been aware of and felt more adept at more sports. J. C. would have liked to participate more in sports and games but felt inadequate and as a result was not active physically. Skiing was the only activity she participated in and she mentioned this training or interest was not created by the physical education department or its instructors.

The second individual was a major in physical education with the same average attitude toward physical education and she indicated average participation in physical activity. However, an attitude study would not have indicated her great interest in physical activity and sports. R. A. participated in a great many team sports and while she enjoyed the feeling of physical fatigue resulting from vigorous physical activity to a minor degree, her interest was very apparent. She explained her lesser participation by stating that there were fewer activity courses and more academic courses in which she was involved.

The last of those individuals who scored an average attitude on the Wear Physical Education Attitude Inventory was also a physical education major. This individual indicated more than average participation in physical activity and also indicated that this was much less than when she was previously a member of a team.

This may again suggest that an attitude study did not show her more than average participation nor did it reveal her desire to be a member of an athletic team.

The three subjects who placed at the bottom of the Wear scale were non-physical education majors. Their scores were 71, 96 and 106, respectively, all indicating the least favorable attitude toward the field of physical education in this study.

The first individual, who recorded the lowest score of 71, not only indicated an extremely poor attitude, but had never participated in physical activities such as games or sports. In this way, her attitude and behavior were comparable. R. B. felt she was physically fit and stated, "I believe if everyday activities are performed correctly, one can stay physically fit enough. If one can control the mind, one can control the body muscles. Physical exercise is not necessary to achieve a fit body, all one needs is a totally effective everyday life." This information could not have been obtained from an attitude questionnaire.

The second participant recorded a score of 96 on the inventory. This score suggested a poor attitude toward physical education but the subject was very active, physically, according to her behavioral diary.

Her questionnaire suggested that you do not have to participate in organized games and sports to be physically active. It posed the question of "What is more important, being fit or sports minded and fit?" K. C. participated in hiking, fishing, hunting, climbing, canoeing, skiing and snow-shoeing. She mentioned that she would have played tennis but her college classes taught her nothing. The subject enjoyed the feeling of physical fatigue and enjoyed watching various sports events. In this instance, the subject's attitude inventory and activity questionnaire were in complete contradiction but the questionnaire made it clear why she felt as she did.

The final analysis involved a subject who scored 106 on the questionnaire and whose behavioral analysis further supported the contention that attitudes do not indicate behavior. S. R. participated in nearly every sport and game and was a tennis coach but not a physical education major. This individual excelled in most sports and had the desire to be active over twenty hours a week. This example magnified the disparity that can exist between an attitude toward physical education and actual participation in physical activity.

The group as a whole expressed a favorable attitude toward physical education, however, the attitude did not seem to indicate their needs, wants or desires and most generally was not expressive of their behavior. This

may suggest that although the Wear Physical Education Attitude Inventory is a reliable test of attitudes, it is not necessarily operationally valid, since the attitude was not indicative of behavior. It seems if an inventory is to be a valid means for testing attitudes, the attitude would have to be indicative of behavior, and this was found not to be the case in this study.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

I. SUMMARY

The purpose of this study was two-fold:

1. to determine if verbalized attitudes toward physical education are necessarily indicative of actual participation in physical activity, and
2. to discover if a galvanic skin response is a valid and reliable means of testing for attitudes.

On the first day of the testing week the subjects came to the Women's Center and completed the Wear Physical Education Attitude Inventory. After the completion of this questionnaire the subjects came at their selected time, during the week, and the galvanic skin response was determined for each subject by re-administering the inventory plus the stimulus items. At this time the physical activity questionnaires, which were filled out on their own time, were collected from the participants, and the testing was completed.

The data was then analyzed and it was apparent that the subjects' attitudes were not in accordance with their behavior in physical activity. It also became apparent,

after administration of the galvanic skin response, that it was not effective in this instance for determining attitudes toward physical education.

II. CONCLUSIONS

On the basis of the results found in this study several conclusions can be made.

1. The Wear Physical Education Attitude Inventory is a reliable test of attitudes and the group tested in this study scored significantly higher on the inventory than was previously reported in the Wear study.
2. Majors in physical education have a significantly more positive attitude toward physical education than do non-majors.
3. A galvanic skin response is not a more effective means for determining attitudes toward physical education than is the Wear Attitude Inventory.
4. Attitudes toward physical education are not necessarily indicative of actual participation in physical activity, therefore, an attitude study alone cannot be a valid instrument for determining the effectiveness or worth of a physical education program.

✓

III. RECOMMENDATIONS

In view of the findings of this study the following recommendations have been made. Further study should be done:

1. to determine if attitude studies are valid instruments when they cannot indicate actual behavior.
2. to study the use of a galvanic skin response as a means to help interpret the validity of a verbal response.
3. to see if the needs or desires of individuals involved in physical education programs would indicate more about revising courses than do attitude studies.
4. to find out how the number of hours of physical activity relates to attitudes toward physical education with a larger population.
5. to determine the physical activity habits and experiences that lead individuals to include or omit physical activity in their life style.

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APPENDIX

APPENDIX A

STATISTICAL ANALYSIS

I. Formula for Computing Correlation--Pearson r

Pearson r-

$$r = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

II. Formula for Testing Significance of r

t Test for Significance-

$$t = \frac{X_1 - X_2}{S_{DX}}$$

N 30

r- Pearson r

III. Formula for Testing Difference Between Majors and Non-Majors

t Test for Significance

$$t = \frac{X_1 - X_2}{S_{DX}}$$

APPENDIX B

DATA COLLECTION DEVICES

I. PHYSICAL ACTIVITY ATTITUDE QUESTIONNAIRE

NAME _____ YEAR IN SCHOOL _____ MAJOR _____

DIRECTIONS

In order that we may assess your attitudes towards exercise and physical activity, would you express your true feelings, beliefs, ideas and opinions with respect to the statements that appear below.

There are no right or wrong answers, it is strictly a matter of personal belief and attitude toward exercise. Therefore, please express how you feel, not how you think the institution or others might like you to feel, or what you think would be socially acceptable.

After reading a statement you will know at once, in most cases, whether you agree or disagree with the statement. If you agree, then decide whether to place an "X" under agree or strongly agree. If you disagree, then decide whether to place the "X" under disagree or strongly disagree. In case you are undecided (or neutral), concerning your feelings about the statement, then place an "X" under undecided.

All information will be kept confidential. We are not interested in connecting any person with any paper- - - so please answer each statement as you actually feel about it. BE SURE TO ANSWER EVERY STATEMENT.

	SD	D	U	A	SA
1. I only like physical activity because I am especially sensitive about my figure.	—	—	—	—	—
2. If for any reason a few subjects have to be dropped from the school program, physical education should be one of the subjects dropped.	—	—	—	—	—
3. I think participation in physical activity is a good way to get a man.	—	—	—	—	—
4. Physical education activities provide no opportunities for learning to control the emotions.	—	—	—	—	—
5. Physical activity is for unfeminine appearing girls and women.	—	—	—	—	—
6. Vigorous physical activity works off harmful emotional tensions.	—	—	—	—	—
7. I would participate more in physical activity and different types of sports, but I fear people will remark, "Doesn't she look funny."	—	—	—	—	—
8. I would take physical education only if it were required.	—	—	—	—	—
9. I think many women physical educators are lesbians.	—	—	—	—	—

	SD	D	U	A	SA
10. Participation in physical education makes no contribution to the development of poise.	—	—	—	—	—
11. Most people participate in physical activity because of a lack of anything else to do.	—	—	—	—	—
12. I have many more things to do, that are more important, than participation in physical activity.	—	—	—	—	—
13. Physical education tears down sociability by encouraging people to attempt to surpass each other in many of the activities.	—	—	—	—	—
14. Physical education should be included in the program of every school.	—	—	—	—	—
15. People who participate in physical activity are really only show-offs.	—	—	—	—	—
16. Skills learned in a physical education class do not benefit a person.	—	—	—	—	—
17. People who participate in physical activity generally lack mental ability.	—	—	—	—	—
18. Physical education makes for more enjoyable living.	—	—	—	—	—
19. I am completely satisfied with my physical ability.	—	—	—	—	—
20. Physical education has no place in modern education.	—	—	—	—	—
21. Physical education provides situations for developing desirable character qualities.	—	—	—	—	—
22. I dislike physical activity because of the type of physical education instructors I had.	—	—	—	—	—
23. There is little value in physical education as far as physical well-being is concerned.	—	—	—	—	—
24. I feel totally inadequate when faced with a physical task.	—	—	—	—	—
25. Physical education is one of the more important subjects in helping to establish and maintain desirable social standards.	—	—	—	—	—
26. Exercise is too much work just to maintain body weight.	—	—	—	—	—
27. Because physical skills loom large in importance in youth, it is essential that a person be helped to acquire and improve such skills.	—	—	—	—	—
28. Activity is good because it gives me a chance to express certain emotions that are otherwise dammed up because of social pressures.	—	—	—	—	—
29. Calisthenics taken regularly are good for one's general health.	—	—	—	—	—
30. My parents are the reason I do not participate in any physical activity, because they were the type that said, "No, don't do that, you might get hurt."	—	—	—	—	—
31. Skill in active games or sports is not necessary for leading the fullest kind of life.	—	—	—	—	—
32. I participate in sports and games because it is a social asset.	—	—	—	—	—
33. Associating with others in some physical activity is fun.	—	—	—	—	—

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34. Men who exercise regularly are much more physically attractive than other men their age.	—	—	—	—	—
35. Physical education classes provide situations for the formation of attitudes which will make one a better citizen.	—	—	—	—	—
36. Physical fitness is entirely unimportant to me.	—	—	—	—	—
37. Physical education situations are among the poorest for making friends.	—	—	—	—	—
38. I have all the strength and stamina necessary without participating in a program of exercise.	—	—	—	—	—
39. There is not enough value coming from physical education to justify the time consumed.	—	—	—	—	—
40. I don't like physical activity or physical education.	—	—	—	—	—
41. Physical education skills make worthwhile contributions to the enrichment of living.	—	—	—	—	—
42. People get all the physical exercise they need in just taking care of their daily work.	—	—	—	—	—
43. All who are physically able will profit from an hour of physical education each day.	—	—	—	—	—
44. Physical education makes a valuable contribution toward building up an adequate reserve of strength and endurance for every day living.	—	—	—	—	—
45. Participation in physical education activities makes for a more wholesome outlook on life.	—	—	—	—	—
46. Participation in physical education activities will help to relieve and relax physical tensions.	—	—	—	—	—
47. Physical education adds nothing to the improvement of social behavior.	—	—	—	—	—
48. Participation in physical education activities help a person to amintain a healthful emotional life.	—	—	—	—	—
49. Physical education is one of the more important subjects in the school program.	—	—	—	—	—
50. Physical education provides situations for developing desirable character qualities.	—	—	—	—	—

II. PHYSICAL ACTIVITY QUESTIONNAIRE

NAME _____ MAJOR _____ AGE _____

1. Do you ever participate in any sports and games. Yes No

2. If yes to the above, what sports and games? _____

3. If you do not participate now, but did, what were your reasons for stopping? _____

4. Do you feel you get enough physical activity without engaging in games and sports? Yes No
5. If yes to the above briefly describe the manner in which you engage in physical activity. _____

6. Where did you learn to play the games or sports in which you participate or participated? _____

7. Do you belong to any club or organization which provides facilities for participation or promotes physical activity? Yes No
8. If no to the above did you ever belong to any club or organization which promoted physical activity or provided facilities for participation? Yes No
9. During college, have you participated regularly in physical activity? Yes No
10. Are you a member of a women's college athletic team? Yes No
11. If yes to the above what particular sports are you involved in? _____

12. Were you previously a member of any women's college athletic team? Yes No
13. If yes to the above what specific sports were you involved in? _____

14. Are you a member of any women's college intramural teams? Yes No

15. If yes to the above what specific sports are you participating in? _____
-
16. If no to number 14, were you ever a member of any women's college intramural teams? Yes No
17. If yes to the above what particular sports were you involved in? _____
-
18. Did (or do) your parents participate in these same (or other) activities? Yes No
19. What sports or activities? _____
-
20. Did your parents encourage your participation in these same (or other) activities? Yes No
21. If yes to the above, what activities did they encourage you to participate in? _____
-
22. Do most of your friends participate in the physical activities you enjoy? Yes No
23. Do you enjoy being a spectator at sports events? Yes No
24. If yes to the above what specific sports events? _____
-
25. Would you rather participate in sports events than watch? Yes No
26. If yes to number 25, what sports events would you rather participate in than watch? _____
-
27. Is the image of a male athlete a desirable one for you? Yes No
28. What kind of image do you have of a male athlete? _____
-
-

29. Is the image of a female athlete a desirable one for you? Yes No
30. What kind of image do you have of a female athlete? _____

31. Do you enjoy competing with others in sports events? Yes No
32. If yes to the above, what sport events? _____

33. Do you enjoy competing with yourself and trying to improve your own performance in physical activities and sports? Yes No
34. Do you have the desire to excel when you participate in sports and games? Yes No
35. Do you enjoy competing with yourself or others more? _____
36. Do you find the feeling of physical fatigue, resulting from strenuous activity, a pleasant one? _____
37. Do you get a feeling of "well-being" from participation in some physical activity? _____

38. How many hours (average) per week do you participate in some physical activity? _____

39. What physical activity or activities? _____

40. Is this more or less than you used to participate and why? _____

41. Number of years of formal preparation in physical education? High School _____ College _____

III. DIRECTIONS FOR RESPONDING TO THE GALVANIC SKIN RESPONSE

Although the questions you will be asked are a minor part of this study, please answer exactly how you feel about each one. If you agree, decide whether you agree or strongly agree and answer accordingly. If you disagree, decide whether you disagree or strongly disagree and respond accordingly. If you are undecided or neutral respond undecided.

Please do not move once the apparatus is started, and concentrate on each question answering as quickly as possible.

Each question is directed to you. They are not my statements or necessarily my beliefs. Therefore, answer exactly as you feel concerning each question.

Please know why you answer each question as you do, as you will be asked, following the testing, about some of your responses. (This is only for testing purposes to see if the machine is working.)

None of this information will be connected with any name and no-one will see the information other than myself.

EACH QUESTION OR STATEMENT SHOULD BE RESPONDED TO (ORALLY)
IN ONE OF THE FOLLOWING WAYS:

Strongly Agree-Agree-Uncertain-Disagree-Strongly Disagree