THE EFFECT OF ELECTIVE PHYSICAL EDUCATION ACTIVITY CLASSES ON THE SELF CONCEPT OF COLLEGE STUDENTS

by

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Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
DOCTOR OF EDUCATION
July, 1980

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ACKNOWLEDGMENTS

First and foremost, I give eternal thanks to my Lord and Savior, Jesus Christ, the Son of God, and for His guidance and leadership through the person of the Holy Spirit. Without this supernatural assistance this paper would have never been undertaken or finished. A special thanks to Dr. Jerry Polson, Dr. Mary Frye, and Dr. Better Abercrombie who were witnesses for the Lord in confirming that this task should be undertaken.

My committee was gracious and helpful, my thanks. Dr. Abercrombie acted as director of this study and in doing so was a combination of friend, confidant, cheerleader, and editor. Dr. A. B. Harrison was most helpful in assisting with the statistical aspects of this study. Dr. Thomas Karman took precious time, particularly in the early stages of this study, to make valuable comments and suggestions necessary for the final draft. Dr. Rondal Gamble lent his guidance with humor and grace. Thanks committee!

The faculty of the Department of Health, Physical Education, and Recreation at Southeastern was grand in their cooperation in the gathering of data for this paper. A special thanks to Mrs. Vicki Hudson for her daily encouragement.

The patience of my family and friends will be appreciated forever.

Iris McPherson, at the Oklahoma State University Computer Center, was indispensable in getting my data analyzed on the computer.

A final thanks to Velda Davis and her associates at TOP Services Unlimited for their expert handling of the typing and production legwork of this study. Deadlines could not have been met without them.

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CHAPTER I

INTRODUCTION

For years physical educators have claimed that psychological benefits accrue through participation in a physical education program, but most of the literature indicates that documented evidence is lacking. Bucher (5), writing on Scott's list of seven contributions of physical education to psychological development, lists attitude changes, social efficiency improvements, improved sense of well-being, better relaxation and relief of psychosomatic problems as some of those contributions. Supportive research was meager.

Kleinman (30), in expressing the significance of human movement, stated that the purpose of the physical educator should be one of developing, encouraging, and nurturing an awareness of and an openness of self, to promote and understand self. Six objectives were given for that purpose. The second of those objectives was to gain an understanding of self and consciousness.

Kupla and Pargam (31) pointed out that there was little research in the area of mental health as related to women's involvement in sport. They further reported that Metheny, Huelster and Small support the notion that athletic involvement contributes to the potential development of selfhood thereby becoming a medium through which needs may be satisfied. This, in turn, leads sport to be a facilitator of mental health.

Harris (20) stated:

> Perhaps the real rationale of physical education should be somatopsychic education . . . to educate for an integrated mind-body relationship and all the implications therein.
>
> Physical education is one of the human disciplines, possibly even a social science. The effects of stress, the image of self, the human requirement of movement, the influence of bodily movement upon development processes of personality, plus numerous other expanding concepts and areas of knowledge that are now with us are important aspects to consider as components of our discipline. Further research requires use of these in the pursuit of knowledge of physical education.
>
> We at the college level will probably not only have to give the leadership but much of the work toward research in these areas (p. 206).

Such terms as selfhood, self understanding, and image of self emerge. These could be grouped into the term self concept.

In their discussion on self concept, Calhoun and Morse (6) credit Rainey with coining the term "self-concept" in 1943. They define the term as the description one employs to identify his nature and uses to compare oneself to others. The authors further explain that the positive development of self concept is directly related to the amount of success one encounters during the early development period. Those who experienced very little success will tend to have a negative self concept. Summing up various definitions, they conclude that the self concept is viewed as the way an individual perceives himself and his behavior, and is strongly influenced by the ways others perceive him.

Harris (19) points out that self concept has been defined in a multitude of ways but there are two basic assumptions which underlie all current theories of self: (1) Self concept is a product of social interaction, and it is assumed that alterations and developments of

self are direct functions of the responses of others, and (2) Self concept has a predictable effect on behavior in general. Specifically she stated: "In essence, self-concept is the core around which all personality characteristics are organized--what one thinks of one's self is the prime determinant of one's behavior" (19, p. 163).

Curry (8), in reviewing self concept, spoke of Sullivan's development of self as "a mirror of other people." What a person believes about himself is partly a function of his interpretation of how others see him, he infers this from their behavior toward him. This means the concept of self depends in part on what he thinks others think of him.

Alderman (1) summed up this line of reasoning on self concept by stating ". . . if you think you are good, and you perceive others as thinking you are good, then you will be good" (p. 143).

Harris (19) would seem to support the rationale for a study of self concept and physical activity by stating:

> Since the development of self is related to how one perceives others to evaluate him, to social interaction, and to one's perception of one's own body, sport and physical activity afford tremendous opportunity for the development of selfhood (p. 169).

Purpose of Investigation

The primary purpose of this study was to ascertain whether a semester of elective physical education activity classes at Southeastern Oklahoma State University would result in a significant change in the self concept of college students as measured by the Tennessee Self Concept Scale. The subjects met classes two contact hours per week for each hour of college credit. Most classes met twice a week for 16 weeks.

Specifically the study was concerned with:

1. Determining whether the students in elective physical education classes at Southeastern were developing a more favorable self concept.
2. Finding which classes were having the greatest influence on self concept.
3. Examining the self concept changes among classes, by sex, and student classification.
4. Determining if there was a relationship between the grades received in the class and changes in self concept scores.

Hypotheses

The null hypothesis was utilized with regard to each variable. The hypotheses were as follow:

1. There will be no significant difference in self concept scores of the experimental group compared with the control group at the beginning of the study.
2. There will be no significant difference in the self concept scores of the experimental group compared with the control group at the end of the study.
3. There will be no significant difference between the pretest and posttest self concept scores of the total control group.
4. There will be no significant difference between the pretest and posttest self concept scores of the total experimental group.
5. There will be no significant difference in self concept score changes within the females in the experimental group.
6. There will be no significant difference in self concept score changes within the males in the experimental group.
7. There will be no significant difference in self concept score changes among college classification.
8. There will be no significant difference in self concept scores after a semester of physical education in any of the 22 experimental classes.

9. There will be no significant relationship between self concept score changes and the grades received in a class in the experimental group.

Definitions

The term "total population" will refer to the experimental group consisting of students in elective physical education classes and the control group consisting of the students from three different science classes not enrolled in physical education activity at Southeastern Oklahoma State University. "Groups" will include classifications and sex.

Self concept has been defined differently by various authors, but for the purposes of this study it will be defined as "a composite of thoughts and feelings which constitute a person's awareness of his individual existence, his conception of whom and what he is" (24, p. 9).

The "variables" are 12 scores from the Tennessee Self Concept Scale as follow (13):

1. Column A P Score-Physical Self.
2. Column B P Score-Moral Ethical Self.
3. Column C P Score-Personal Self. Reflects the person's sense of personal worth or adequacy as a person.
4. Column D P Score-Family Self. Expresses one's feelings as a family member.
5. Column E P Score-Social Self. Worth in social interaction.
6. Row 1 P Score-Identity. "What I am" items.
7. Row 2 P Score-Self Satisfaction. How the individual feels about the self he perceives.
8. Row 3 P Score-Behavior. "This is what I do."

9. Total P Score. This is the most important single score and it reflects overall self esteem. (Postive)
10. Self Criticism Score (SC). High scores would indicate normal self criticism, but scores above the 99th percentile might mean the individual is lacking in defenses. Low scores indicate defensiveness and suggest that the P scores are probably artificially elevated by this.
11. Variability Score (V). A measure of inconsistency from one area of self perception to another. Well integrated people generally score below the mean but above the first percentile.
12. Distribution Score (D). A summary score of the ways answers are distributed across the five available scores. As another aspect of self perception, high scores indicate the subject is very definite of what he says about himself and low scores just the opposite. Low scores could indicate defensiveness.

Delimitations

The experimental subjects were college students enrolled in elective physical education activity classes at Southeastern Oklahoma State University in the spring of 1979. The control subjects were those enrolled in three selected classes of science and were not currently enrolled in a physical education activity class at Southeastern.

Assumptions

It was assumed that all subjects were highly motivated in each of the classes, and that the scores on the self concept scale reflect a candid self evaluation of each subject.

CHAPTER II

REVIEW OF RELATED LITERATURE

Published research on the effect of college physical education activity classes upon the self concept was limited, but there were numerous unpublished studies with bearing on this general topic.

Two basic areas of studies follow: Studies of self concept and college students in physical education activity classes and studies of self concept and physical activity of many types.

Studies of Self Concept and College Students in Physical Education Activity Classes

Studies on Obesity or Weight Control

Brown (3) studied obesity as a factor in self concept and attitude toward physical fitness and exercise of college male students. Seventy-nine subjects were divided into three groups: (1) Control group; (2) Experimental group involved in a vigorous physical activity program that received lectures on problems and causes of obesity; and (3) Experimental group involved in the same activity as those in group 2 without the lectures. The Tennessee Self Concept Scale (TSCS), The Thurston Scale for Measuring Attitudes Toward Physical Fitness and Exercise, and the Triceps Skinfold Test to determine their degree of obesity were utilized. After a ten-week program the results showed:

(1) No significant change occurred in the self concept, degree of obesity, or attitude toward physical fitness and exercise in the three groups during the study; (2) There was a significant correlation between the changes in the degrees of obesity and self concept within the two experimental groups; (3) A reduction in the degree of obesity significantly affects the self concept to the extent that as obesity increases, the self concept scores improve.

In a related study, Edmund (11) used 45 females with an overweight factor of 25% or more body fat to determine the effect of a 36-day exercise, jogging, and a voluntary diet on physiological, anthropometric and self concept measures. She concluded that there were no concurrent changes in self concept to go with the improvements in physiological and anthropometric measures.

Frye (15) conducted a similar study with 24 overweight college women participating in an 8-week program of physical conditioning and regulation of dietary habits to determine physical correlates of the self concept and personality. Significant improvements were made in physical variables and in a Self Concept Tally ratio of positive to negative feelings toward the self. It was determined that the combined extroverted thinking and extroverted feeling types showed the greatest weight loss. Frye concluded that a program of this type could be instrumental in producing positive change in professed self concept as well as in physical measures.

These studies do not agree, but the Edmund study was only 36 days long whereas the Frye study continued for eight weeks which could account for the different results in the studies utilizing female subjects.

Studies on Conditioning, Fitness, and Postural Training

Biles (2) wanted to determine if there would be a change in the self concept of female university freshmen enrolled in the basic fitness classes. The 102 subjects were divided into two experimental groups and one control group. Both experimental groups were enrolled in basic fitness, but were taught by different methods, television and a traditional method. The control group was from three sports classes. The results showed significant differences in self concept within each group although there were no significant differences between groups.

Similarly, Hughes (21) compared the effects of four techniques of teaching body conditioning upon the physical fitness and self concepts of college women. The 28 volunteers were divided into four experimental groups with all given the TSCS and two fitness tests. Each group received a different teaching technique of conditioning during a quarter. There were no significant differences in fitness among the groups. For all groups no difference occurred for self concept over the quarter of classwork.

Christian (7) conducted his study on the relationship of self concept and physical fitness with three purposes in mind: (1) Determining the relationship between initial measurements in physical fitness and self concept; (2) Looking for corresponding change in self concept if fitness levels are changed; and (3) The role of knowledge of improvement in fitness on the change in self concept. Using 189 college males as a sample, he administered the TSCS and a battery of four physical efficiency tests. He had three groups: (1) Control group only

receiving archery instruction; (2) Fitness training group with knowledge of their progress; and (3) Group receiving the same fitness training as 2 but without progress reports. This was a six-week program. He concluded that there was no significant relationship between physical fitness and self concept as measured, and that improvement of the selected aspects of physical fitness among college male students does not result in a changed self concept for either those knowing the results of improvement or those not knowing.

Johnson (26) investigated the relationships among self concepts, movement concepts, and physical fitness. He further determined the effects of a physical conditioning program and a sports skill program upon self concept and movement concept. Seventy-three freshman males were randomly placed into three groups: One participated in a sports skill program, a second participated in a physical conditioning program and the last one was the control group. The Q-sorts was used for determining self concept and movement concept. The conclusions were that a significant relationship existed between self concept and movement concept but there was none between self concept and physical fitness or movement concept and physical fitness.

Changes in self concept, ideal concept, body image, and movement concept of college females participating in a 10-week jogging program were investigated by Jacobs (23). Nineteen females were in the experimental group with 19 in a golf class acting as a control group. A major conclusion was that there were no significant changes between or within the jogging and golf groups on any of the factors from beginning to termination of the study using the t-test.

Reiter (37) used three 20-member university classes for women in attempting to determine the effects of a special program of postural training on the self concept. The TSCS was administered at the beginning and end of the quarter. The two classes that were used as the experimental group received specially designed posture training as taught by two different instructors while the control group received traditional classroom work. It was concluded that there was an increase in self concept of the experimental groups due to the specially designed postural program.

Studies on Dance

Millett (34) used two classes of social dance with a recreation class as the control to determine if there would be social or physical changes in the students as a result of the dance class. He determined that no significant change was made in the students' concept of physical change, social change, positive self esteem, personal self, self satisfaction, individual identity, or behavior.

Jette (25) randomly divided 108 volunteer college females into classes in one of six treatment groups to study the effect of modern dance and music on body image and self concept. Two groups were in modern dance with musical accompaniment while two participated in the music with rhythmical activity. There were two control groups. After seven weeks no significant differences in body image or self concept were found between classes or groups.

Harris' (18) study involved 90 college women. She attempted to determine if a self concept could be influenced by three different movement experiences; bowling, contemporary dance, and movement

fundamentals. Utilizing a test and retest design with the TSCS, it was concluded that there were no significant differences when the groups were compared.

Studies on Swimming

Hurley (22) studied the effects of a 10-week program of basic swimming instruction upon the self concept of 28 nonswimming college females. A control group of 11 subjects did not participate in any physical activity class. It was concluded that there was no change in the total self concept that could be attributed to instruction in the basic swimming class.

In a study with similar results, Sheppard (39) investigated the effects of learning to swim upon the self concept and body concept of 100 college students who enrolled in elective classes for nonswimmers and examined the relationship of these effects to sex and swimming proficiency. The results showed that learning to swim had no effect on the body concept, self acceptance, and self esteem. There was a positive effect upon self description. One of these effects was related to sex and swimming proficiency.

Studies on Other Activity Classes

Pyecha (35) compared the effects on personality of Judo I and II to handball-badminton, and basketball-volleyball classes on male university freshmen. Using the Cattrell 16 Personality Factor Questionnaire, he concluded that the judo experimental group became more warmhearted, easy going, and participating than did either control group.

Dreher (10) conducted a related study to determine the effects of hatha yoga and judo on the personality and self concept profiles of college men and women. The Cattrell 16 Personality Factor Questionnaire and the TSCS were administered at the beginning and end to the students in the elective coed classes of yoga, judo, and a control group of randomly selected students from the general student population. It was concluded that the females attracted to the experimental classes were representative of the general population while the males viewed the activities as a modifying agent in reducing their personality and self concept differences from the general male student population. There were no significant changes on the self concepts. Both males and females in the experimental classes viewed the classes as a great benefit in shaping their behavior in terms of interaction with people.

Deese (9) studied the effects of two different methods of tennis instruction on the self concept of college students. Forty-four male and female students enrolled in physical activity classes volunteered to act as subjects. They were assigned to one of two groups with each group completing the same subject matter. One group received small group instruction and the other received large group instruction. It was concluded that neither method had more effect upon self concept, the two methods were equally effective in developing tennis ability, there was no relationship between the level of skill and the level of self concept, and finally that either method appeared to be adequate, thereby allowing the teacher to choose the method that best suited the needs and interests of the students.

Read (36) investigated the influence of competitive and non-competitive programs of physical education on body image and self concept

of university students. Pre and posttest scores from the Body-Cathexis and the TSCS were analyzed. The subjects were divided into competitive and non-competitive groups. A further breakdown occurred with body image and self concept in the competitive group by examining both the constant winners and constant losers. Physical education programs were conducted with all groups. The only significant results indicated that the group of constant winners had significantly higher positive body image and self concept scores than those of the constant losers.

Grotlisch (16) studies changes which took place in aspects of the professed self concept of 123 freshmen women enrolled in a required course, "Physical Education Concepts," at the University of Florida. All scores moved toward the positive direction, but none were significant using the t-test. The Chi-square was utilized for a comparison of observed frequencies with expected frequencies. Significant differences were found at the .01 level of confidence with Chi-square: (1) for 23 of the 30 individual scales measured, (2) in the factors measured of activity, value and potency, and (3) within 2 of the 3 concepts measured of Myself as an Athlete, and Myself as a Woman.

Studies of Self Concept and Physical Activity

Ziegler (43) conducted a study to determine the changes in self perception on social and basketball images for high school basketball players during the season. She used 40 girls comprising four teams in Western Pennsylvania for subjects. She concluded that the social image of the player was "somewhat affected by the amount of participation during the season, and the won-loss record of the team" (p. 73).

Because of the two-image aspect of this research, she further concluded that the self perceived image of the girl is situational specific in that she views herself differently in the two situations assessed. Ziegler stated more specifically that preseason scores were higher in social image differences and basketball images were higher for the regular player on post-season scores.

In a similar study Evans (12) attempted to discover any changes in a female's self concept as a result of participation on a women's intercollegiate basketball team in relation to the extent of each individual's participation on that team. Using the Q-sort self concept test on 18 undergraduate basketball team members, she found no significant change in self concept and concluded that women participants involved in a short term intercollegiate team situation (3 months with 8 games) were unaffected by such an experience. As a control, 13 members of a required physical education class in a 5-week instructional basketball unit were tested. There was a significant change in self concept with this group. In the pretest comparison between the two groups, the basketball team had a significantly higher self concept, but on the posttest analysis no difference of significance existed.

In an attempt to determine the effects of intramural participation upon the personality, Groves (17) conducted a study of 186 male college freshmen. The experimental group consisted of 132 participants in an intramurals program, and a control group of 54 students neither in an intramurals program nor in any other athletic activity. The following conclusions were drawn: (1) Participants in the intramurals program did not differ significantly from the control group; (2) There was not a significant correlation between degrees of personality change and

degrees of participation in the intramural program; (3) There were significant changes in personality changes among the men of the nine (basketball, football, volleyball, bowling, table tennis, wrestling, team, individual, and commuter) different sport groups; and (4) The subjects who lived at home and commuted made the greatest personal adjustment during this six month period.

Jordon (28) reported on changing negative self concepts through activity in an Upward Bound program at the University of Oregon. He first explained that objective measures of psychological parameters were not employed in the early stages of the program. Manifest changes were subjectively recorded by various staff members. Individual case studies were cited. In their program they were feeding the students as well as furnishing physical activity and academic studies. They felt that there were encouraging psychological changes in attitude and motivation even though the test results did not support their opinions.

At a special eight week camp for obese boys, Rohrbacher (38) found that whereas their body image scores showed a significant positive change, the self concepts remained unchanged.

Young and Ismail (42) studied the personality of adult men before and after a four month physical fitness program using 20 personality variables. They concluded that the only psychological effect was on personality factors measuring social precision, persistence, and control with each fitness and age group. All groups increased on these dimensions between test periods.

Jogging and cycling programs were used by Buccola and Stone (4) to study the effects on physiological and personality variables in men aged 60-79. During the 14-week program, they trained 25-50 minutes per day,

three days per week. The cyclers showed no change in personality factors, but the walker/joggers became less surgent and more self sufficient.

Johnson, Fretz, and Johnson (27) studied the changes in self concept during a physical development program. Seventy-four children, referred to a physical development clinic for emotional disturbances, brain damage, or mental retardation were placed on an individualized systematic neuromotor training program in a gymnasium and pool setting two days a week, 1-2 hours a day for 6 weeks. From this group a conclusion was that not all changes in children strongly suggest that an individualized physical development program can be of significant value in the total functioning of the child.

Working with 808 high school boys, Merriman (33) compared the relationship of personality traits to motor ability. He groups the subjects as follows: (1) Upper and lower motor ability; (2) Athletic and nonathletic matched according to motor ability scores; (3) Participants in team sports; (4) Participants in individual sports; and (5) Participants in team-individual sports. The California Psychological Inventory and the Phillips Jump, Chin, Run Test were utilized. The upper motor ability group scored significantly higher than the lower motor ability group on measures of poise, ascendancy, and self assurance. From the few significant differences in personality traits between matched athletes and nonathletes it seemed that motor rather than athletic participation was the potent factor in development of personality traits. Generally, he concluded that motor ability was related to personality traits.

Tillman (40) conducted a two phase study of the relationship between physical fitness and personality traits with 386 high school junior and

senior boys. The upper 15% and the lower 15% on the AAHPER Fitness Test were compared by a battery of three personality tests. A significant difference was found. He then divided the low group into experimental and control groups, and the experimental group was placed in a 9-month fitness program. While the experimental group gained significantly in physical fitness compared with the control group during this period, the experimental group personality changes were found to be significantly different on only one test item; it related to fitness. In summation Tillman (40, p. 484) said: "It appears that conclusive evidence is needed to substantiate some of the claims that have been advanced about the relationship between physical fitness and personality."

Kay, Felker, and Varoz (29) tested four hypothesized relationships between self concept, sports abilities, and personal and parent interest in sports for seventh, eighth, and ninth grade boys. They found significant positive relationships between reported interest in sports and self concept scores at each grade level. Their main conclusion was that sports abilities and interests were positively related to measured self concept and that similarity of sports interests between parents and children also appeared to be related to self concept. The implications: Physical Educators should concern themselves with these relationships when developing their curricula.

Working with elementary age children, Martinek, Zaichkowsky, and Cheffers (32) studied two types of activity programs by comparing the effects of motor skills on self concept. One-half the 230 children participated in a program where the physical activity teacher made all the decisions while the others shared in the decisions for their program. One-hundred fifteen were in the control group. The teacher

directed group was found best for the development of motor skills while students sharing had a definite positive effect on the development of self concept. They further concluded that the relationship between self concept and motor ability development was seen to be non-significant. In summary, they believed their research provided little support to the contention that self concept and motor skills are related. Therefore, the researchers said, "It is questionable to assume that a child who performs well on motor tasks also possesses a healthy self concept" (p. 356).

In summary, it should be stated that the research evidence was contradictory as to the effect of physical activity on the self concept.

CHAPTER III

PROCEDURE

Subjects

The experiemental subjects were college students who enrolled in elective physical education activity classes at Southeastern Oklahoma State University during the spring of 1979. These classes and the participating enrollments were as shown in Table I.

This population represents 15 different courses, 22 classes, and nine faculty members. An attempt was made to include all students enrolled in the activity classes in this study, but it could not be done. Attendance was poor during the pretesting week because Southeastern is primarily a commuter school, and the roads were icy at that time. Some of the faculty members were more committed than others in following up on testing the absentees. The follow up was poor in some classes both in the initial testing and the posttesting. The researcher did all that was possible without alienating fellow faculty members. Only those subjects who took both tests were included in the data.

The control subjects were the students who enrolled in three science courses and were not enrolled in an elective physical education activity class that semester. These courses and participating enrollments were as shown in Table II.

TABLE I

EXPERIMENTAL PHYSICAL EDUCATION ACTIVITY COURSES

Course Number and Section	Course Title	Subjects
1001-1	Men's Team Sports	15
1021-1	Body Mechanics for Women	41
1121-1	Women's Team Sports	11
1141-1	Social and Square Dance	19
1201-1	Men's Gymnastics	8
1221-1	Women's Elementary Gymnastics	8
1241-1	Bowling	26
1241-2	Bowling	21
1241-3	Bowling	29
1501-1	Elementary Tennis	5
1501-2	Elementary Tennis	5
1501-3	Elementary Tennis	16
1501-4	Elementary Tennis	10
1601-1	Intermediate Tennis	13
1701-1	Elementary Swimming	9
1701-2	Elementary Swimming	12
1801-1	Intermediate Swimming	6
1901-1	Advanced Swimming	13
1971-1	Intermediate Modern Dance	4
2601-1	Weight Training for Men	14
2601-2	Weight Training for Men	20
2652-1	Women's Jogging	7
		N=312

TABLE II

CONTROL SCIENCE COURSES

Course Number and Section	Course Title	Subjects
1113-1	General Physical Science	14
1214-1	General Physics Laboratory	10
2115-1	General Physics II	7
		N=31

This represented three different courses taught by one instructor. It should be noted that these courses were used simply because of the voluntary cooperation of the instructor.

Measuring Devices

Self Concept

Self concept was measured by the Tennessee Self Concept Scale, developed by Dr. William H. Fitts (13). This instrument was developed for determining how an individual perceives himself. The scale is self administering for either individuals or groups and can be used with persons age 12 or higher who read at a sixth grade level. The scale consists of 100 self descriptive statements which the subject uses to portray his own picture of himself. For example:

I am a cheerful person. 1 2 3 4 5

The subject is instructed to circle the one if he feels the statement is completely false, two if mostly false, three if partly false and partly true, four if mostly true, and five if completely true.

Ten of the 100 statements come from the L Scale of the Minnesota Multiphasic Personality Inventory and constitute the Self Criticism Score. The remaining 90 statements contribute to the self concept scores. These 90 statements are organized into a rectangular matrix divided into columns and rows. There are five vertical columns which describe Physical Self, Moral-Ethical Self, Personal Self, Family Self, and Social Self. The three horizontal rows contain Identity, Self Satisfaction, and Behavior.

Fitts (14) lists the major scores as follow: Positive scores, Variability Scores, Distribution Scores, and Self Criticism.

Positive Scores. With the Tennessee Self Concept Scale (TSCS), the overall self concept is reflected in the Total Positive Score (Total P), which indicates the person's general level of self esteem. This score is a total of column scores, which deal with the external frames of references the individual use to describe himself, and the row scores which are concerned with how the individual describes himself from an internal frame of reference.

The positive scores were those examined most closely in this study, and in particular the Total P, Physical Self, Personal Self, and Self Satisfaction. The Total P was the single most important score and the other three were selected because they were thought to be most likely influenced by a physical education activity class.

Variability Scores. The Total V Score represents the total amount of variability for the entire scale while variations within rows and columns are summarized by the Row Total V and Column V Scores. In the emotionally healthy person, the self concept should be positive and consistent. A high degree of inconsistency, or variability, is found in individuals who tend to compartmentalize certain areas resulting in poor integration of the self.

Distribution Scores. On each statement of the TSCS the subject has a choice of five responses ranging from completely false (1) to completely true (5) as discussed earlier. Distribution scores are computed representing the number of times he uses each response, and these scores reflect the way in which he handles the test of self description. Some people are very unceratin or guarded in describing themselves so they use an inordinate number of middle number (3)

responses. Other individuals qualify most of their responses resulting in a majority of 4 and 2 responses. Others have a still different pattern by using all 5's and 1's. The D Score is a summary score derived from the five response scores. It is interpreted as a measure of certainty about the self concept whether the person has a clearly or poorly differentiated self concept. High D Scores indicate certainty and low scores uncertainty.

Self-Criticism. This is a measure of the person's openness, or willingness, to admit derogatory things about himself. As mentioned earlier it is based on ten items from the MMPI. Low scores indicate that the individual is defensive and possibly making a deliberate effort to favorably distort his other scores.

Reliability. Fitts (13) reported reliability coefficients, by test-retest, in the range of .80 to .90 for the various scores. Fitts further reported on a study by Congdon who used a shortened version of the Scale and still obtained a reliability coefficient of .88 for the Total Positive Score. According to Fitts there is other evidence of reliability found in the remarkable similarity of profile patterns found through repeated measures of the same individuals over a long period of time.

Validity. A main purpose of the TSCS was to insure that the classification system used for the Column Scores and Row Scores was dependable. An item was retained only if there was unanimous agreement by the judges that it was indeed classified correctly. Fitts (13) also found highly

significant differences between psychiatric patients and nonpatients ($\underline{P}$ .001) on almost every dimension of the instrument which indicated the validity of the scale.

Grades

Each faculty member used his personal grading scale and system for assessing grades in the classes. The university system called for A, B, C, D, or F grades in physical education activity classes. No attempt was made to standardize the grading.

Collection of Data

Each instructor was placed on a schedule for administering the Tennessee Self Concept Scale to their classes during the second week of the semester. At this time there was one week remaining in the add/drop period so the enrollment had not yet stabilized. A sheet of brief instructions was included with the test booklets and answer sheets (APPENDIX A). Each faculty member was asked to go over the personal data information which included name, classification, and sex of student. The same procedure was followed at the end of the semester. A copy of the assigned grades was attained from the registrar at the end of the semester.

Statistical Analysis

The means, standard deviations, and standard errors were computed on all 12 variables in both groups. The t-test was utilized to determine significance of differences between the following:

1. Experimental and control on 12 variables on both the pretest and posttest scores.

2. Pretest and posttest scores on the variables Total P, Physical Self, Personal Self, and Self Satisfaction for:

   A. Total control group
   B. Experimental group
      1) total group
      2) males
      3) females
      4) freshmen
      5) sophomores
      6) juniors
      7) seniors
      8) other classifications
      9) each of 22 classes
      10) grouped classes
         a) bowling
         b) swimming
         c) tennis
         d) weight training
         e) all other classes

The self concept score changes, using all 12 variables, and grades received in the class were correlated on the experimental group.

For (1) one above, the independent or unpaired t-test was the statistical procedure used to determine if there were significant differences based on the pretest scores of the control and experimental groups at the onset of the experiment. The same procedure was followed for the posttest scores.

For item (2) two, the dependent or paired t-test was utilized to determine if there was a significant difference between the pre and posttest scores. The level of significance for the t-tests in this study was set at .05.

The correlations of grade to change in self concept was determined by use of the Pearson Product Moment formula.

The Tennessee Self Concept Scale answer sheets were hand graded

but all statistical analyses were performed by computer at the Oklahoma State University Computer Center.

CHAPTER IV

ANALYSIS OF DATA

Introduction

The primary purpose of this study was to determine the effects of elective physical education activity classes on the self concept of college students at Southeastern Oklahoma State University.

This chapter includes the results of the statistical analysis of the data collected in this study.

Pretest Scores on Experimental and Control Groups on Twelve Variables

There were no significant differences between the experimental and control groups on any of the pretest means on the twelve variables (Table III). This seemed to indicate that the self concept scores of the two groups were similar at the beginning of this study. The experimental group had higher means on six of the twelve variables.

Posttest Scores on Experimental and Control Groups on Twelve Variables

On the posttest means, the variables Family Self and Identity showed a significant change between the experimental and control groups (Table IV). The only explanation on the change in Family Self would seem to be in the negative change in the control group since the

TABLE III

PRETEST SCORES ON EXPERIMENTAL AND CONTROL GROUPS ON TWELVE VARIABLES

Variable	Mean		t	Probability
	Control N=31	Experimental N=312		
Physical Self	68.42	67.91	- .349	.727
Moral/Ethical Self	67.55	66.84	- .446	.656
Personal Self	66.29	65.32	- .699	.485
Family Self	67.90	69.64	1.117	.264
Social Self	65.03	66.76	1.225	.221
Identity	123.65	125.98	1.101	.272
Self Satisfaction	104.23	101.12	-1.224	.222
Behavior	107.32	109.38	.945	.345
Total P	335.19	336.48	.222	.824
Self Criticism	36.23	35.37	- .758	.449
Variability	49.81	50.87	.427	.669
Distribution	114.35	113.73	- .129	.897

*Significant at P .05.

TABLE IV

POSTTEST SCORES ON EXPERIMENTAL AND CONTROL GROUPS ON TWELVE VARIABLES

Variable	Mean		t	Probability
	Control N=31	Experimental N=312		
Physical Self	68.00	68.99	.629	.530
Moral/Ethical Self	67.65	67.02	- .351	.726
Personal Self	65.58	66.07	.330	.742
Family Self	65.84	70.13	2.683	.008*
Social Self	65.00	67.41	1.691	.092
Identity	120.52	129.31	2.682	.008*
Self Satisfaction	103.94	103.41	- .266	.791
Behavior	107.61	110.36	1.179	.239
Total P	332.06	340.27	1.345	.179
Self Criticism	34.65	35.24	.512	.609
Variability	47.13	48.41	.510	.610
Distribution	110.29	112.90	.481	.631

*Significant at P .05.

positive change in the experimental group was slight. The control dropped 2.065 while the experimental group gained .49. The cumulative effect was sufficient for a significant difference. The change on Identity was also one of a negative change in the control group and a positive change in the experimental group. Although no significant gains were made on any other of the variables, it should be pointed out that whereas the experimental group had higher self concept means on six of the twelve variables on the pretest, it had higher scores on ten of the variables on the posttest.

Pre-Posttest Scores on the Total Control Group on Four Variables

There were no significant differences on the pre and posttest scores on the variables Total P, Physical Self, Personal Self, and Self Satisfaction with the control group (Table V). On each of the variables the posttest means were lower than the pretest means indicating negative change over the semester. This could mean that the science courses had a detrimental effect on self concept. This reason would seem more plausible, however, on Total P, Personal Self, and Self Satisfaction than on Physical Self.

Pre-Posttest Scores on the Total Experimental Group on Four Variables

The pre and posttest scores on all four variables of Total P, Physical Self, Personal Self, and Self Satisfaction, resulted in significant differences with the total experimental group (Table VI). The variables of Physical Self, Personal Self, and Self Satisfaction were

TABLE V

PRE-POSTTEST SCORES ON THE CONTROL GROUP
ON FOUR VARIABLES

Variable	N=31 Mean		t	Probability
	Pre	Post		
Total P	335.19	332.06	-1.113	.270
Physical Self	68.42	68.00	- .430	.669
Personal Self	66.29	65.58	-1.053	.297
Self Satisfaction	104.23	103.94	- .169	.866

*Significant at P .05.

TABLE VI

PRE-POSTTEST SCORES ON THE EXPERIMENTAL GROUP
ON FOUR VARIABLES

Variable	N=312 Mean		t	Probability
	Pre	Post		
Total P	336.48	340.27	3.069	.002*
Physical Self	67.91	68.99	2.765	.005*
Personal Self	65.32	66.07	2.022	.044*
Self Satisfaction	101.12	103.41	3.726	.000*

*Significant at P .05.

selected for closer study because they were thought to be most likely influenced by a physical education activity class.

Pre-Posttest Scores on the Total P for Experimental Group by Sex and Classification

The females in the experimental group showed a significant change in Total P (Table VII). The males did not show a change but they were approaching a significant level at .07. By classifications the freshmen scores were significant, but none of the other classifications were.

TABLE VII

PRE-POSTTEST SCORES ON TOTAL P FOR EXPERIMENTAL GROUP BY SEX AND CLASSIFICATION

Sex or Classification	Number	Mean		t	Probability
		Pre	Post		
Female	141	338.70	343.63	2.625	.009*
Male	171	334.36	337.49	1.776	.077
Freshmen	121	336.91	341.27	1.972	.050*
Sophomores	69	331.38	332.10	.308	.759
Juniors	66	342.79	346.55	1.382	.169
Seniors	47	330.19	336.40	1.798	.076
Other	9	351.00	363.44	1.698	.109

*Significant at P .05.

The reason for the significant change in the female scores will become evident when the results are examined course by course later in this chapter. Although the freshmen showed the only significant change from pre to posttest, it was not the classification with the greatest mean improvement, both the seniors (N=47) and the other classification (N=9) showed a greater mean improvement. Because of their smaller numbers, however, they were not significant.

Pre-Posttest Scores on the Physical Self for Experimental Group by Sex and Classification

The females in the experimental group showed a significant change in the Physical Self as the only change by sex (Table VIII). The juniors and the other classifications showed significant change on Physical Self.

Pre-Posttest Scores on the Personal Self for Experimental Group by Sex and Classification

Neither the females nor the males had significant score changes on the Personal Self. The junior and senior classifications had a significant improvement (Table IX). None of the others were close.

Pre-Posttest Scores on Self Satisfaction for Experimental Group by Sex and Classification

Both the males and females had significant improvement in their scores on Self Satisfaction (Table X). Three of the five classifications showed significant changes: Freshmen, seniors, and other.

TABLE VIII

PRE-POSTTEST SCORES ON PHYSICAL SELF FOR EXPERIMENTAL GROUP BY SEX AND CLASSIFICATION

Group	Number	Mean		t	Probability
		Pre	Post		
Female	141	67.04	68.52	2.318	.021*
Male	171	68.64	69.37	1.557	.121
Freshmen	121	68.20	68.94	1.002	.318
Sophomores	69	68.17	68.32	.220	.826
Juniors	66	68.65	70.70	3.145	.002*
Seniors	47	66.26	67.13	.911	.365
Other	9	65.33	71.89	2.853	.012*

*Significant at $\underline{P}$ .05.

TABLE IX

PRE-POSTTEST SCORES ON PERSONAL SELF FOR EXPERIMENTAL GROUP BY SEX AND CLASSIFICATION

Sex or Classification	Number	Mean		t	Probability
		Pre	Post		
Female	141	64.58	65.50	1.531	.127
Male	171	65.93	66.54	1.318	.188
Freshmen	121	65.81	66.01	.293	.770
Sophomores	69	64.80	64.65	- .229	.819
Juniors	66	65.91	67.39	2.177	.031*
Seniors	47	63.55	65.60	2.066	.042*
Other	9	67.67	70.67	1.061	.305

*Significant at P .05.

TABLE X

PRE-POSTTEST SCORES ON SELF SATISFACTION FOR EXPERIMENTAL GROUP BY SEX AND CLASSIFICATION

Sex or Classification	Number	Mean		t	Probability
		Pre	Post		
Female	141	101.38	104.24	2.959	.003*
Male	171	100.91	102.72	2.303	.022*
Freshmen	121	101.43	104.24	2.554	.011*
Sophomores	69	99.22	99.68	.392	.696
Juniors	66	103.59	105.56	1.701	.091
Seniors	47	99.11	102.23	2.009	.048*
Other	9	104.00	111.11	2.081	.054*

*Significant at P .05.

Pre-Postest Scores on Total P for

Experimental Group by Classes

Twenty-two different classes were represented in the data and of these there were 15 different course titles (Table XI). The body mechanics class for women had the most dramatic change with a significant change of .0001. This course was designed and taught with figure control and exercise as its main thrust, with some postural training included.

The intermediate tennis class showed a significant change. One section of elementary tennis was very close at .055. Although none were significant, negative changes occurred in seven of the 22 classes.

TABLE XI

PRE-POSTTEST SCORES ON TOTAL P FOR EXPERIMENTAL GROUP BY CLASSES

Classes	Number	Mean		t	Probability
		Pre	Post		
Men's Team Sports 1001-1	15	343.13	344.93	.359	.722
Body Mechanics for Women 1021-1	41	335.51	353.15	5.560	.000*
Women's Team Sports 1121-1	11	335.27	340.64	.688	.499
Social and Square Dance 1141-1	19	332.89	333.79	.200	.842
Men's Elementary Gymnastics 1201-1	8	333.63	337.25	.873	.398
Women's Elementary Gymnastics 1221-1	8	327.25	336.63	1.619	.128
Bowling 1241-1	26	338.50	339.08	.126	.900
Bowling 1241-2	21	332.24	329.95	- .595	.555
Bowling 1241-3	29	343.41	342.76	- .122	.904
Elementary Tennis 1501-1	5	366.00	367.40	.153	.882
Elementary Tennis 1501-2	5	325.00	323.60	- .109	.916
Elementary Tennis 1501-3	16	335.19	344.38	2.000	.055
Elementary Tennis 1501-4	10	349.50	347.10	- .533	.600
Intermediate Tennis 1601-1	13	339.54	350.31	2.217	.036*
Elementary Swimming 1701-1	9	300.56	290.44	-1.017	.324

TABLE XI (continued)

Classes	Number	Mean		t	Probability
		Pre	Post		
Elementary Swimming 1701-2	12	335.17	343.83	1.660	.111
Intermediate Swimming 1801-1	6	325.00	331.83	1.428	.184
Advanced Swimming 1901-1	13	342.31	338.77	- .435	.668
Intermediate Modern Dance 1971-1	4	334.50	339.75	.518	.623
Weight Training for Men 2601-1	14	339.71	343.93	1.127	.270
Weight Training for Men 2601-2	20	336.85	335.20	- .221	.827
Women's Jogging 2652-1	7	329.71	334.57	.852	.411

*Significant at P .05.

Pre-Posttest Scores on Physical Self for Experimental Group by Classes

Of the 22 classes, three showed significant improvement in the self concept variable Physical Self (Table XII). The body mechanics class for women was significant with a .0001 probability, the women's gymnastics at .0117, and one section of beginning tennis at .0141. Ten of the classes moved toward the negative on Physical Self, none significantly.

Pre-Posttest Scores on Personal Self for Experimental Group by Classes

Three of the classes were significant on Personal Self: Body mechanics, Section 2 of elementary swimming, and intermediate swimming (Table XIII). This was the only one of the four positive variables examined in which swimming classes were significant. Eight moved toward the negative on this variable, but none was significant.

Pre-Posttest Scores on Self Satisfaction for Experimental Group by Classes

The three classes which showed a significant improvement on the Self Satisfaction variable were body mechanics, women's elementary gymnastics and intermediate tennis. Five classes moved toward a negative change, but none was significant (Table XIV).

Discussion by Classes

The following results and discussions relate to the data in Tables XI, XII, XIII, and XIV.

TABLE XII

PRE-POSTTEST SCORES ON PHYSICAL SELF FOR EXPERIMENTAL GROUP BY CLASSES

Classes	Number	Mean		t	Probability
		Pre	Post		
Men's Team Sports 1001-1	15	71.40	71.40	.000	1.00
Body Mechanics for Women 1021-1	41	63.78	69.76	7.367	.000*
Women's Team Sports 1121-1	11	69.91	64.73	- .941	.358
Social and Square Dance 1141-1	19	68.00	68.79	.856	.398
Men's Elementary Gymnastics 1201-1	8	71.50	73.50	1.482	.161
Women's Elementary Gymnastics 1221-1	8	60.75	66.25	2.896	.012*
Bowling 1241-1	26	70.00	69.38	- .552	.584
Bowling 1241-2	21	66.67	67.76	.804	.426
Bowling 1241-3	29	69.93	69.24	- .639	.526
Elementary Tennis 1501-1	5	73.80	72.40	- .828	.432
Elementary Tennis 1501-2	5	69.20	68.20	- .210	.839
Elementary Tennis 1501-3	16	68.06	71.00	2.606	.014*
Elementary Tennis 1501-4	10	71.80	71.30	- .312	.758
Intermediate Tennis 1601-1	13	67.92	70.31	1.880	.072
Elementary Swimming 1701-1	9	61.44	59.00	-1.000	.332

TABLE XII (continued)

Classes	Number	Mean		t	Probability
		Pre	Post		
Elementary Swimming 1701-2	12	68.33	70.33	1.132	.270
Intermediate Swimming 1801-1	6	64.00	63.33	- .316	.758
Advanced Swimming 1901-1	13	66.46	65.77	- .348	.731
Intermediate Modern Dance 1971-1	4	67.50	70.50	1.320	.235
Weight Training for Men 2601-1	14	70.00	71.29	.940	.356
Weight Training for Men 2601-2	20	69.80	68.95	- .509	.061
Women's Jogging 2652-1	7	66.29	69.43	2.049	.063

*Significant at P .05.

TABLE XIII

PRE-POSTTEST SCORES ON PERSONAL SELF FOR EXPERIMENTAL GROUP BY CLASSES

Classes	Number	Mean		t	Probability
		Pre	Post		
Men's Team Sports 1001-1	15	66.47	68.13	1.456	.157
Body Mechanics for Women 1021-1	41	63.12	67.61	4.267	.000*
Women's Team Sports 1121-1	11	66.27	63.00	- .798	.434
Social and Square Dance 1141-1	19	65.16	64.79	- .358	.723
Men's Elementary Gymnastics 1201-1	8	65.50	65.50	.000	1.000
Women's Elementary Gymnastics 1221-1	8	62.13	63.00	.492	.630
Bowling 1241-1	26	66.65	66.38	- .242	.810
Bowling 1241-2	21	64.95	62.95	-1.801	.079
Bowling 1241-3	29	64.10	67.48	.264	.793
Elementary Tennis 1501-1	5	71.60	74.80	1.347	.215
Elementary Tennis 1501-2	5	62.40	62.80	.343	.740
Elementary Tennis 1501-3	16	64.75	65.88	.763	.451
Elementary Tennis 1501-4	10	68.60	67.60	- .605	.553
Intermediate Tennis 1601-1	13	68.23	68.46	.134	.895
Elementary Swimming 1701-1	9	56.33	55.56	- .432	.672

TABLE XIII (continued)

Classes	Number	Mean		t	Probability
		Pre	Post		
Elementary Swimming 1701-2	12	62.75	66.33	2.631	.015*
Intermediate Swimming 1801-1	6	61.33	65.00	3.124	.011*
Advanced Swimming 1901-1	13	66.77	66.00	- .348	.731
Intermediate Modern Dance 1971-1	4	67.00	70.25	1.722	.136
Weight Training for Men 2601-1	14	68.14	69.29	1.114	.276
Weight Training for Men 2601-2	20	65.85	65.55	- .153	.879
Women's Jogging 2652-1	7	64.29	64.29	.000	1.000

*Significant at P .05.

TABLE XIV

PRE-POSTTEST SCORES ON SELF SATISFACTION FOR EXPERIMENTAL GROUP BY CLASSES

Classes	Number	Mean		t	Probability
		Pre	Post		
Men's Team Sports 1001-1	15	100.87	100.60	- .128	.899
Body Mechanics for Women 1021-1	41	99.41	107.20	4.809	.000*
Women's Team Sports 1121-1	11	101.09	104.45	.562	.580
Social and Square Dance 1141-1	19	101.26	100.63	- .292	.772
Men's Elementary Gymnastics 1201-1	8	98.88	102.13	1.378	.190
Women's Elementary Gymnastics 1221-1	8	95.25	103.50	2.972	.010*
Bowling 1241-1	26	102.42	103.15	.414	.681
Bowling 1241-2	21	101.57	100.95	- .323	.748
Bowling 1241-3	29	104.86	105.51	.298	.767
Elementary Tennis 1501-1	5	119.00	116.20	- .413	.691
Elementary Tennis 1501-2	5	90.80	91.40	.097	.925
Elementary Tennis 1501-3	16	101.31	105.13	1.291	.207
Elementary Tennis 1501-4	10	106.70	107.30	.272	.789
Intermediate Tennis 1601-1	13	104.62	110.85	2.184	.039*
Elementary Swimming 1701-1	9	89.22	89.78	.152	.881

TABLE XIV (continued)

Classes	Number	Mean		t	Probability
		Pre	Post		
Elementary Swimming 1701-2	12	98.33	101.75	1.295	.209
Intermediate Swimming 1801-1	6	98.50	99.00	.147	.886
Advanced Swimming 1901-1	13	103.54	102.85	- .238	.814
Intermediate Modern Dance 1971-1	4	93.75	95.75	.562	.595
Weight Training for Men 2601-1	14	102.57	104.93	.875	.390
Weight Training for Men 2601-2	20	99.70	100.65	.311	.758
Women's Jogging 2652-1	7	101.86	104.57	.656	.524

*Significant at P .05.

Men's Team Sports

The men's team sports class did not show a significant gain on any of the four positive scores examined. Three of the measures moved toward the positive while Self Satisfaction moved slightly toward the negative. The Read (36) study dealt with competitive and noncompetitive programs of physical education, and concluded that only constant winners had a slightly higher self concept. Ziegler (43) and Evans (12) studied female basketball team members and found no significant change as a result of a season's play. The Evans study, however, used a 5 week instructional basketball class as the control, and that group showed a significant positive change in self concept. The results in this class, in which five to six weeks were spent in basketball, were difficult to relate to the studies examined. The Evans study showed improvement contrary to this experimental class.

The instructor of this class did not have another activity class so no comparisons could be made there.

Body Mechanics for Women

The body mechanics class improved significantly at .0001 on each of the four positive scores singled out in this study. The Edmund (11) and Hughes (21) studies with female students in weight control and/or fitness classes failed to show any significant improvement in self concept. The Frye (15) and Bile (2) studies, however, reported significant changes with females. Despite the contradictory research, the body mechanics class unquestionably made progress in positively altering self concepts. The philosophy and personality of the instructor could have been a strong determinant in the positive outcome. She had declared

before the study was undertaken that she was sure this class would improve self concepts. Until this study, her convictions were based strictly on "feeling."

Because of the dramatic change in the self concepts in this class, the experiment will be repeated in the spring of 1980 under a different instructor to see if the change was primarily a product of the course or the personality and teaching style of the teacher.

Women's Team Sports

In the women's team sports class none of the four variables showed significant change. Two of the variables showed positive progress, Total P and Self Satisfaction, but the other two variables moved toward the negative.

There was no research reported to either agree or disagree with the results of this study. The same instructor taught the body mechanics class, so if personality was a factor in that class, it was not sufficient for influencing the outcome of this class.

Social and Square Dance

The social and square dance class made positive progress on the Total P and Physical Self, while moving toward the negative on the measures of Personal Self and Self Satisfaction. None of the changes were significant. The Millett (34) study would seem to be in agreement with the finding of this study, no change in self concept as a result of participating in a social dance class. The instructor for this class also taught a second class in this study, intermediate tennis, which was significant on two of the four variables with positive

improvement shown on the other two measures. This would seem to indicate that the personality of the teacher alone is not a strong enough influence to change self concept.

Gymnastics for Men

The men's gymnastics class made progress on three measures and remained unchanged on the fourth measure; none was significant. This faculty member did not teach another activity class. In reviewing the literature, no studies were found on gymnastic classes so there was no basis for comparative discussion.

Women's Elementary Gymnastics

The women's elementary gymnastics class showed significant improvement on two measures, Physical Self and Self Satisfaction. It also made positive progress on the other two variables. Once again, there were no research cited to use in drawing comparisons. The instructor in this class also taught the body mechanics and women's team sports classes. There was no valid way to claim that this could have been the reason the women's gymnastics class showed significant changes when the men's class did not, but the fact should be noted.

Bowling

There were three sections of bowling and all were taught by the same instructor so they will be considered together. None of the classes improved significantly on any of the four positive scores. By sections the following resulted: Section 1 made positive progress on Total P and Self-Satisfaction only; Section 2 was positive on Physical

Self only; and Section 3 was positive on Personal Self and Self Satisfaction. There were more negative results than positive, and those positive gains were slight. The study by Harris (18) used bowling as one of the classes in her study on self concept. She found no significant improvement. This study would support her findings. These were the only classes taught by this instructor.

Elementary Tennis

There were two instructors teaching the four sections of elementary tennis, with Sections 2, 3, and 4 taught by the same person. On these three sections the results showed: Section 2 was positive on Personal Self and Self Satisfaction with neither significant; Section 3 was significantly improved on Physical Self, while the other three variables showed some positive progress; and Section 4 was positive only on Self Satisfaction. The results of the same course, taught by the same instructor, and meeting on the same days were very inconsistent. This was the middle class which showed significant improvement, both in terms of time of day and enrollment; although, the number of students who participated in this study was the greatest. A possible reason for the discrepancy among classes could be the time of day: Section 2 was at 9:30, Section 3 at 10:30, and Section 4 at 11:30. Perhaps one was too early and another too close to lunch.

Section 1 of this study, taught by a different instructor, showed positive improvement on only the Total P and Personal Self variable. This instructor taught the weight training classes which showed no significant changes in the positive scores.

The Deese (9) study was the only tennis study reported on that dealt with self concept, and it was concerned with teaching methods. It was concluded that between the mass and small group methods, neither was superior, and that there was no relationship between the skill level and self concept level. Because there was no comparison made in this study with teaching methods or relationship of skill level to self concept, no comparative discussion will be made.

The two instructors in this study seemed to have had comparable results.

Intermediate Tennis

The intermediate tennis class had significant improvement on the scores of Total P and Self Satisfaction. The other scores showed positive improvement, also. Based on the results of the beginning tennis classes, this intermediate class seemed to have shown exceptional progress. This instructor did not teach a beginning tennis class, but did teach the social and square dance class which failed to show significant gains in self concept scores. Any further discussion on tennis would have been made above with the elementary tennis classes.

Elementary Swimming

The two sections of elementary swimming were taught by different teachers. Section 1 showed slight improvement on the Self Satisfaction measure; the other three measures moved in a negative direction. Section 2 significantly improved on Personal Self and made positive progress on the other measures. Both Hurley (22) and Sheppard (39) reported a lack of significant change in self concept in basic swimming

classes. This would seem to be in agreement with the results in these swimming classes. The difference between classes could be attributed to many factors such as time of day, day of the week, and/or the personality and presentation of the instructors. The instructor in Section 1 also taught the intermediate swim class. The advanced swimming class and jogging class were taught by the instructor of Section 2.

Intermediate Swimming

The intermediate swimming class improved significantly on the measure Personal Self and also showed positive gain on Total P and Self Satisfaction. Any further discussion on swimming was made above with the beginning swimming classes.

Advanced Swimming

The advanced swimming class was the only class with negative results on all four variables, although none was significant. This was also the only class which met at night and for only 10 weeks. The class met for three hours, one night per week. If these factors contributed to the results, it could not be determined in this study and declaring such would be speculation. The instructor of this class also taught beginning swimming, Section 2, and jogging.

Intermediate Modern Dance

Intermediate modern dance did not have a significant change, but each measure did move toward positive improvement in the self concept scores. Jette (25) and Harris (18) reported that there was no

significant change in self concept in modern or contemporary dance classes. Their findings were in total agreement with this study. The faculty member for this class also taught the body mechanics, women's team sports, and women's elementary gymnastics.

Weight Training for Men

There were two sections of weight training, and both had the same teacher. The results showed that neither section had any significant change. Section 1 did show positive progress on all four measures, while Section 2 only improved on the measure of Self Satisfaction.

On the reported research with male students in weight reduction and/or conditioning classes, Brown (3), Christian (7), and Johnson (26) all reported no significant change in self concept as a result of the physical activity. This study would seem consistent with those findings. The instructor of these weight training classes, also taught Section 1 of beginning tennis. Although none of the variables measured in the two weight classes showed a significant change, it should be noted that there was some discrepancy between classes, e.g. Physical Self, where Section 2 showed a negative t with a .0613 probability while Section 1 was a positive .3561. No further attempt was made to analyze those differences.

Jogging for Women

The jogging class was truly an experimental class, in that, it was being offered on a first time basis in an attempt to determine the need for such a class. No significant changes were seen in the self concept,

but three measures moved toward positive improvement, while one measure, Personal Self, remained the same.

Jacobs (23) compared jogging and golf using male students, and concluded that there was no significant change within or between the groups on self concept. The results of this study was in agreement with the Jacob's study. The jogging class was taught by the same faculty member who taught Section 2 of beginning swimming and advanced swimming.

Pre-Posttest Scores on the Total P for Experimental Group by Course Grouping

The tennis class and the all others group showed a significant change in positive self concept scores (Table XV). The tennis change would be on the strength of the one section of intermediate tennis which was significant on the Total P. The all others group would have been swayed by the strong significance of the body mechanics class which was grouped here. The bowling group was negative in direction.

Pre-Posttest Scores on the Physical Self for Experimental Group by Course Grouping

Only the all others group was significant on the Physical Self variable (Table XVI). Again, this would be primarily because of the body mechanics class. The women's gymnastics class would have also been an influence. Both were significant in this grouping. The bowling and swimming groupings moved toward the negative.

TABLE XV

PRE-POSTTEST SCORES ON TOTAL P FOR EXPERIMENTAL GROUP BY COURSE GROUPING

Grouped Courses	Number	Mean		t	Probability
		Pre	Post		
Bowling	76	338.64	337.96	- .248	.085
Swimming	40	328.18	328.38	.051	.960
Tennis	49	341.37	346.73	1.992	.049*
Weight Training	34	338.03	338.79	.165	.869
All Others	113	334.95	343.66	4.555	.000*

*Significant at P .05.

TABLE XVI

PRE-POSTTEST SCORES ON PHYSICAL SELF FOR EXPERIMENTAL GROUP BY COURSE GROUPING

Grouped Courses	Number	Mean		t	Probability
		Pre	Post		
Bowling	76	69.05	68.88	- .254	.800
Swimming	40	65.53	65.25	- .263	.793
Tennis	49	69.49	70.73	1.585	.116
Weight Training	34	69.88	69.91	.026	.979
All Others	113	66.72	69.35	3.545	.001*

*Significant at P .05.

Pre-Posttest Scores on the Personal Self for

Experimental Group by Course Grouping

Again, only the all others grouping was significant on the Personal Self. The body mechanics class would have been the influence. Bowling was negative (Table XVII).

TABLE XVII

PRE-POSTTEST SCORES ON PERSONAL SELF FOR EXPERIMENTAL GROUP BY COURSE GROUPING

Grouped Courses	Number	Mean		t	Probability
		Pre	Post		
Bowling	76	66.36	65.86	- .681	.497
Swimming	40	62.40	63.60	1.236	.220
Tennis	49	66.92	67.51	.756	.451
Weight Training	34	66.79	67.09	.241	.810
All Others	113	64.52	66.17	2.475	.014*

*Significant at P .05.

Pre-Posttest Scores on Self Satisfaction for

Experimental Group by Course Grouping

The results were the same for Self Satisfaction as the two previous variables, only the all others groups showed a significant change. There were no negative changes by the course groupings (Table XVII).

TABLE XVIII

PRE-POSTTEST SCORES ON SELF SATISFACTION FOR EXPERIMENTAL GROUP BY COURSE GROUPING

Grouped Courses	Number	Mean		t	Probability
		Pre	Post		
Bowling	76	103.12	103.45	.287	.775
Swimming	40	98.00	99.00	.653	.516
Tennis	49	104.02	106.82	1.767	.080
Weight Training	34	100.88	102.41	.733	.466
All Others	113	99.70	103.76	3.889	.000*

*Significant at P .05.

Correlation of Grades Received to Mean Change in Variables - Experimental Group

The correlations of grade received in the course to mean changes in all twelve variables range from -.034 to .112 (Table XIX). Although these were weak correlations, with 305 observations the variables Personal Self and Social Self showed a significant relationship.

TABLE XIX

CORRELATION OF GRADES RECEIVED TO MEAN CHANGE IN VARIABLES - EXPERIMENTAL GROUP**

	Variable	Correlation	Probability
Physical Self	1	.072	.212
Moral/Ethical Self	2	.017	.768
Personal Self	3	.111	.053*
Family Self	4	.090	.116
Social Self	5	.112	.049*
Identity	6	-.008	.888
Self Satisfaction	7	.108	.057
Behavior	8	.032	.569
Total P	9	.099	.082
Self Criticism	10	-.001	.982
Total Variability	11	-.034	.544
Total Distribution	12	.023	.687

*Significant at P .05.
**305 Observations.

Discussion of Study

In the opinion of this writer there was a dual influence on the experimental students in this study. The most obvious was the nature of the class. Certain classes could be expected to have a stronger influence on the self concept of the student, e.g. body mechanics compared to bowling. The results of this study would seem to support this influence in some cases while failing to do so in others. For instance, body mechanics for women showed significant changes while weight training did not.

The second influence would seem to be that of the personality and teaching style of the teacher. Knowing each of the teachers who participated, working with them daily for a number of years, brought about the realization that some of them program their classes for affective change while others do not. The warmth, interest, and concern shown to the students by some teachers could have been as great an influence as the course content. This was strictly a personal observation.

CHAPTER V

SUMMARY AND CONCLUSIONS

Purpose of the Study

The purpose of this study was to determine the effects of elective physical education activity classes during the spring of 1979, on the self concept of college students at Southeastern Oklahoma State University.

Data Collecting Procedures

During the first week of classes in the spring semester of 1979, the students enrolled in 22 elective physical education activity classes were administered the Tennessee Self Concept Scale by their respective instructors. For a control group, the students enrolled in three science classes, who were not currently enrolled in an elective physical education class, were also given the TSCS. The tests were repeated during the last week that the classes met. The t-test was used to analyze the data comparing experimental and control pre and posttest scores. Changes in self concept and grade received in the class were correlated on the experimental group.

Findings

1. The self concept scores of the experimental and control groups were not significantly different on any of 12 variables at the beginning of the study.
2. The self concept scores of the experimental and control groups differed significantly at the end of the study only on the variables Family Self and Identity.
3. Within the total control group, there were no significant differences between pre and posttest scores on any of the four variables: Total P, Physical Self, Personal Self, and Self Satisfaction.
4. Within the total experimental group, the resulting changes were significantly higher on all four variables: Total P, Physical Self, Personal Self, and Self Satisfaction.
5. The females were significantly higher on the variables Total P, Physical Self, and Self Satisfaction.
6. The males were significantly higher on the variable Self Satisfaction.
7. By classification, the freshman students were significantly higher on the variables of Total P and Self Satisfaction.
8. The sophomores failed to show any significant change.
9. The juniors showed significant improvement on the variables Physical Self and Personal Self.
10. The senior students improved significantly on Personal Self and Self Satisfaction.

11. The other group was significantly improved on Physical Self and Self Satisfaction.
12. Of 22 classes the following showed significant improvement:
    A. Body mechanics for women on all four variables.
    B. Gymnastics for women on Physical Self and Self Satisfaction.
    C. Elementary tennis, Section 3, on Physical Self.
    D. Intermediate tennis on Total P and Self Satisfaction.
    E. Elementary swimming, Section 2, on Personal Self.
    F. Intermediate swimming on Personal Self.
13. Of the groupings, bowling, swimming, tennis, weight training, and all others, the following showed significant improvement:
    A. Tennis on Total P.
    B. All others on all four variables, Total P, Physical Self, Personal Self, and Self Satisfaction.
14. There were two significant correlations between the twelve variables on the total TSCS and mean changes on the scores. These were Personal Self and Social Self.

Conclusions Based on Hypotheses

1. The hypothesis there will be no significant difference in the self concept scores of the experimental group compared with the control group at the beginning of the study was accepted.
2. The hypothesis there will be no significant difference in the self concept scores of the experimental group compared with the control group at the end of the study was rejected.

3. The hypothesis there will be no significant difference between the pretest and posttest self concept scores of the total control group was accepted.
4. The hypothesis there will be no significant difference between the pretest and posttest self concept scores of the total experimental group was rejected.
5. The hypothesis there will be no significant difference in self concept score changes within the females in the experimental group was rejected.
6. The hypothesis there will be no significant difference in self concept score changes within the males in the experimental group was rejected.
7. The hypothesis there will be no significant difference in self concept score changes among college classifications was rejected.
8. The hypothesis there will be no significant difference in self concept scores after a semester of physical education in any of the 22 experimental classes was rejected.
9. The hypothesis there will be no significant relationship between self concept score changes and the grades received in a class in the experimental group was rejected.

Recommendations

Based on the results of this study the following recommendations were made:

1. Conduct more studies on specific physical activity classes using a control randomly selected from the college population.

2. Match the number of experimental subjects with the number in the control group when possible.
3. Study the personality and self concept of the instructors of physical education activity classes and look for significant deviation from the established norms or differences between instructor. Compare these instructors' influence on self concept of subjects in the same or a similar class. (Not speaking of teaching methods.)

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APPENDIX

GENERAL INSTRUCTIONS FOR TEST ADMINISTRATION

Please have each student fill in his/her name in the space provided; the course number and section in the extra space; school grade as freshman, sophomore, etc.; sex; today's date; the time when they actually begin taking the test; and the time when they finish.

The instructions for taking the test are in the inside cover of the test booklet. Please go over these instructions with the students, stressing an honest description of themselves. If they make an error or change their mind have them X out the wrong answer and circle the answer they want.

Note that the answer sheet will line up with the questions in the test booklet although the numbers are not consecutive in the booklet.

Thank you for your help.

Roberta

If the students want to know "Why are we taking this test?" feel free to explain that we will be comparing scores, looking for a change in self-concept during the semester. They, as individuals are not being evaluated. We are merely looking for change as a class.

VITA[2]

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Candidate for the Degree of

Doctor of Education

Thesis: THE EFFECT OF ELECTIVE PHYSICAL EDUCATION ACTIVITY CLASSES ON THE SELF CONCEPT OF COLLEGE STUDENTS

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