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The impact of interscholastic activity program participation on self-concept

Melanie L. Lawrence
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THE IMPACT OF INTERSCHOLASTIC ACTIVITY PROGRAM PARTICIPATION ON SELF-CONCEPT

by
Melanie L. Lawrence

A Thesis
Submitted in partial fulfillment of the requirements of the Master of Arts Degree in School Psychology of Rowan University
May 1, 1997

Approved by
Date Approved 4/12
ABSTRACT

Melanie L. Lawrence

"The Impact of Interscholastic Activity Program Participation on Self-Concept"

May 1, 1997

Dr. John Klanderman

School Psychology

Self-Concept is one of the most important constructs in an individual's life. It is the backbone of personal development. The purpose of the present study is to determine whether adolescent students participating in an interscholastic athletic program (basketball) accomplish more substantial gains in self-concept than their non-participant peers. The Tennessee Self-Concept Scale (TSCS:2) was used to assess the baseline data of 40 high school students. Twenty of the students composed the non-active control group, while 20 students composed the experimental, active group. After a ten-week interval, post-test data was gathered. Although results differed based on individual scores, on the average, participants involved in the interscholastic activity program did not accomplish a significant gain in self-concept as compared to their non-participant counterparts.
MINI-ABSTRACT

Melanie L. Lawrence
"The Impact of Intercholastic Activity Participation on Self-Concept"
May 1, 1997
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School Psychology

The purpose of this study is to determine whether the adolescent students who participate in an interscholastic basketball program accomplish a more substantial gain in self-concept than their non-participant peers. Data was obtained through the pre-test and post-test administration of the Tennessee Self-Concept Scale (TSCS:2). Individual results varied, however; on the average, students who participated in the interscholastic athletic program did not accomplish significant gains in self-concept as compared to their non-participant counterparts.
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I would also like to thank Dr. Klanderman and Dr. Dihoff for their guidance throughout my research.
CHAPTER ONE

NEED

Self-Concept is one of the most important constructs in an individual's life. It is the backbone of personal development. There is no question that the self-concept affects the emotional, physical, social, and cognitive life of the individual. Children in their teen years face some massive challenges in life that consequently lead to changes in or threats to their self-concept. Adolescents find that they look and feel different, and that others respond to them differently and expect them to act differently. "This leads to what Erickson (1950) has called the crisis of identity" (Hatti, pg. 132).

Some researchers have reported significant declines of self-concept during the adolescent years; in fact, Rosenberg (1979) reported that disturbances in self-concept appear to reach a peak in early adolescence. It is imperative for a successful, productive, fulfilling life that these young adults develop a strong and positive self-concept.

Research indicates that it is possible to improve one's self-concept by providing experiences which challenge and encourage the student during the adolescent years (Wallace, 1967, La Benne). La Benne has stated that organized sport activities are, perhaps, one of the greatest opportunities for providing challenge and success to participating students (LaBenne, pg. 17).
Many school districts in New Jersey are now faced with limited financial budgets, and a cutback in interscholastic sport programs is considered one of the leading solutions to minimize this budget deficit. It is hoped that this study will encourage parents, school teachers and other educational officials to promote involvement in and support of interscholastic athletic programs for our children's physiological and psychological growth and well-being.

PURPOSE

It is the purpose of this study to examine whether the adolescents who participated in interscholastic athletic programs accomplished more substantial gains in self-concept than their non-participant peers. A pre-test of the Tennessee Self-Concept Scale will be given to two groups; one group beginning an interscholastic athletic program and one group which is and remains sedentary. After 10 weeks, a post-test will be given to each group of students enabling the researcher to compare pre and post self-concept scores.

HYPOTHESIS

Students participating in interscholastic athletic programs will demonstrate significantly higher gains on the Tennessee Self-Concept Scale (T.S.C.S:2) than their non-participant counterparts.

THEORY

The important dimensions of self-concept are body self (or body image), cognitive self, social self, and self-esteem (which is the evaluative aspect of the self-concept)
Each of these dimensions interact with the others affecting how we deal with everyday life. Research studies with adolescents have revealed that people who have negative feelings about their bodies are also likely to feel negative about themselves as complete individuals.

For all children, a realistic body image can be developed in school by helping them to focus on and appreciate their body parts. This is especially important with adolescents whose bodies are going through rapid changes. Body movements allow for growth in body self and in other self-concept dimensions as well. As children interact with a group, they develop a positive sense of peer acceptance and involvement giving them a unique and group identity. They observe their relationships with their teammates and their individual contribution to the team which also expands their cognitive abilities (Samuels, 1977). "The American Association of Health, Physical Education, and Recreation supports the importance of sports by stating that the prime goal in physical activity is the development of a strong self-concept or feeling of respect for the mind and body and confidence in one's ability to function effectively" (Latimer, 1979).

Programs with a focus on physical fitness and physical awareness have only recently been implemented as a tool to enhance self-concept. One of the most well-researched programs is the Outward Bound program. The purpose of these programs "is to provide a setting for the adolescent to recognize and understand his own weaknesses, strengths, and resources and thus find within himself the courage to master the difficult and unfamiliar. Marsh and Richards (1988) pointed out that Outward Bound programs affected multiple dimensions of self-concept and not merely physical self-concept" (Hattie, 1992).
Physical activity also promotes desirable emotional releases. Researchers have discovered a relationship between physical exercise and mental states. Davis, Logan, and McKinney state that exercise provides a release from tensions largely caused by worry, cares and a variety of emotional problems. "For many individuals, exercise offers a satisfying emotional outlet; for others, it provides a channel for self-expression and creativity; for still others, a sense of achievement and self-confidence" (Davis, Logan, McKinney, 1965).

Those individuals who participate in exercise programs report positive outlooks, improved self-image, increased self-discipline, elevated moods, cheerfulness, more energy and increased motivation. Studies suggest these changes occur due to a link between regular exercise training and higher levels of norepinephrine and prolactin. Effects are also attributed to the excess release of adrenaline and endorphines which elevate one's mood, causing a euphoric feeling. Regular exercise also results in the production of more brain anti-stress chemicals faster than is experienced by those who remain sedentary in daily life (The Prevention Total Health System, 1985). Another physical effect of exercise is the enlargement of blood vessels which enables more oxygen rich blood to travel throughout one's body. Psychologically this results in feelings of alertness and excitement (Pronk, Course, Rolack; 1995).

The involvement in interscholastic sports is extremely helpful to adolescents in establishing a positive self-concept, hence, a positive outlook on life. Therefore, this study will focus on self-concept and interscholastic sport participation of adolescent students.
DEFINITION OF TERMS

Self-Concept: The self-concept is the way an individual perceives him/herself.

Anything said about or contributed to one's self.

Tennessee Self-Concept Scale, TSCS:2: An instrument to interpret the self-concept of an individual. The TSCS:2 consists of 100 self-descriptive statements which are used by the subject to illustrate his/her view of himself.

Interscholastic Sports: The component of an interscholastic sport, as defined in this study, is basketball. This sport is organized within schools, and competition takes place between participating school districts.

Adolescence: Adolescence defined in this study pertains to students between the ages of 14 and 18.

ASSUMPTIONS

Several assumptions must be made to ensure, in part, the reliability and validity of the research performed in this investigation. These assumptions include that there are no hidden factors or subjects of this study that would, in any way, alter the findings or hinder the search for truth in the following areas.

It is assumed that all 40 participants in this study have no prior knowledge of the TSCS:2. Particularly, none of these subjects are knowledgeable regarding the scaling evaluation and implications of the results.

It is also assumed subjects answered the questions presented to them accurately and honestly.
LIMITATIONS

Limitations for generalizing the results of this investigation exist. These limitations should be considered before any implications are discussed.

The sample size of this study is 40. All the subjects which were studied were drawn from small, middle class, southern New Jersey school districts. The limited sample size and composition do not adequately represent the adolescent population as a whole.

Due to existing school policies, random sampling was impossible. Participants on their own will registered to participate in the interscholastic team try-outs. Those who made the team became subjects in this study.

OVERVIEW

Chapter one acquainted the reader with the need and purpose for conducting a study to determine if adolescent participation in interscholastic sports has a significant effect on their self-concept. In chapter two, previously related research and literature is reviewed. In chapter three the design of the study, the sample, measures, testable hypothesis, and analysis are presented. In chapter four results of the present study are analyzed. Chapter 5 is composed of an over all discussion and a summary of the results obtained from the pre and post tests.
CHAPTER TWO

Speculation about the relationship between the mind and body has been of interest to scientists for many years. Several centuries ago, Socrates (Plato, 1946) proposed the association, and the concept has attracted renewed interest in recent years with the emergence of holistic health and the concept of high-level well-being (Plato, 1946; Tucker, 1982). There appears to be minimal disagreement with the assertion that physical exercise is a relevant component of physical and psychological health. Physical activity and its benefits are seen or discussed everyday in magazines, newspapers, radio, television, and increasingly in the work place and educational institutions. The benefits of regular exercise to mental/emotional well-being are of growing interest and importance. Adolescents, through interscholastic physical activities, reap these psychological benefits in a variety of ways. The most prevalent, self-concept, is a crucial but still unstable aspect of these teens' personal development.

Adolescence, which is generally thought of as a developmental stage between childhood and adulthood, represents a critical period in development (social, cognitive, and physical development). A positive self-concept has been found to make their transition smoother. Adolescents with a high self-concept are found to be better students, cope better with the physical changes of their bodies, are less likely to use
drugs, report less anxiety, are less likely to report depression and less likely to attempt
suicide (McGraw-Hill, 1993). By looking at the different psychological benefits
associated with physical activity, the significance of interscholastic activity programs can
be assessed.

**Literature Regarding The Benefits Of Interscholastic Activity To Self-Concept**

In general, there is little data on students' psychological (i.e., self-concept) changes in
response to interscholastic activity involvement. However, the studies which do exist
suggest this activity involvement is related to an increase in self-concept dimensions.
The strongest support for the positive effects of interscholastic activity programs derives
from longitudinal studies. Hanks and Eckland (1976) noted that participants of exercise
activities in high school demonstrated positive effects 15 years later on education,
occupation, income, and personal/social adjustment. Holland and Andre (1987) found
relationships between interscholastic activity programs and a variety of personal/social
characteristics. Specifically, these included improved personal adjustment, socializing
patterns, and social integration and less estrangement and powerlessness, crucial
characteristics for a high school adolescent. They also associated interscholastic activity
involvement with higher self-concept of participants than their non-active counterparts
(Marsh, 1996). Marsh (1996) also discovered that participation in interscholastic sport
activities leads to increased commitment to school and school values, which leads
indirectly to increased academic success.

Haffield, Vaccaro, and Benedict (1985) recorded the self-concept of 11 children, aged
9 to 14 years, before and after participation in an eight-week jump-rope exercise regimen.
Participation in this interscholastic activity led to significant positive personality changes in the area of self-concept. Their results showed a significant rise in global self-concept as measured by the Piers-Harris scale. The researchers noted that the physical appearance and attributes sub-scale did not show significant change, indicating that the rise in self-concept stemmed from nonspecific and more global areas of change. This also suggests that physical changes (i.e., weight-loss) did not encourage these psychological changes. Investigators such as Koocher (1971), Hatfield, Vaccaro and Benedict (1985) have shown previously that the mastery of physical skill can lead to significant positive personality change. It is the mastery, they suggest, not the physical components of physical activity which lead to increased self-concept.

Gifford and Dean (1990) performed a state-wide investigation of the relationship of participation in school sports to academic achievement, and attitudes toward self and school. The high school students involved in a sport-centered activity yielded a higher GPA (grade point average), plus a positive attitude toward self and toward participation in school. Exercise effects body-image. Exercisers tend to score higher on a body-cathexis scale than non-exercisers (Joesting, 1981). This suggests that people who participate in regular physical activity do have a better view of their bodies, which enhances attitudes toward one's self along with other dimensions of one's self-concept.

A Broad View Of Physical Activity And Its Effect On Self-Concept

"Almost thirty years ago Erickson (1968) suggested that the formation of a strong and coherent sense of identity was the crucial developmental step associated with the transition from adolescence to adulthood. It has also been acknowledged that identity
development may be a difficult and complex task for many adolescents, and that difficulties with this process may be associated with psychological stress and anti-social behavior” (Shaw and Caldwell, 1995). Shaw and Caldwell (1995) have suggested that one important component of adolescent lifestyle which may facilitate or confuse the formation of personal identity is the use of leisure time.

These researchers studied the influence of sports as a leisure activity compared to non-physical leisure activities (i.e., watching television) of adolescents. Shaw and Caldwell (1995) have suggested that sports may be an important type of transitional activity for adolescents. Sport participation offers a physical and mental challenge and also facilitates adolescent development by providing an identity based on a sense of competence and/or identification with a social group. They also stressed the importance for female adolescents to participate in sports. Sport activity can provide females with a new way of thinking about "self" which challenges traditional notions of femininity.

Kleiber and Roberts (1990) showed only a modest positive relationship between sport involvement and identity development. Another study (Mahnisur, 1976), however, found participants had lower rather than higher levels of ego development compared to their non-active counterparts.

Tappe and Duda (1996) found an association between the leisure activity patterns of older adults and life satisfaction. Older adults who were physically active reported high levels of life satisfaction, appeared to be more independent, and less reliant on recognition and feedback from others to continue exercising.

Tucker (1982) studied the effects of a 16-week weight training program on the self-concept of college males. Differences were found in most of the self-concept dimensions
which measured the self as viewed by the self, but the sub-scales that assessed the self as perceived in relation to others (family and social self) were not significantly influenced. "Apparently, regular training with weights tends to bolster feelings of personal pride, confidence, and self-worth, but it does not tend to place the self at an elevated status in relation to kin and friends" (Tucker, 1982). In a later study, Tucker (1983) suggests males with low pre-test self-concepts gain significantly more in measures of self-concept on their post-test than those who initially had high self-concepts.

Plummer and Koh (1987) researched the effect of aerobic activity on self-concepts of college women and also concluded that fitness training seems to help people cope with psychological stresses and tends to promote general well-being in the individual. Here, it was found that participants not only improved on the personal components of self-concept but also the social components. Hence, it appears that exercise, either aerobic or anaerobic, provides benefits to one's self-concept.

It has been found that the positive effects on self-concept resulting from physical activity affect a variety of population groups. Physical exercise has been used as a treatment intervention for many psychological problems. Palmer, Vacc, and Epstein (1988) found the use of physical exercise as a treatment intervention to decrease depression and anxiety in adult inpatient alcoholics while improving physical health and self-concept. Stein and Motto (1992) investigated the effects of exercise on depression. Analysis indicated that exercise involvement was effective in significantly reducing self-reported depression. A similar study was performed by Ossip-Klein, McDougall-Wilson, and Neimeyer (1989) on the effects of aerobic and non-aerobic activity on self-concept in clinically depressed women. The results demonstrated that both activity types
significantly improved self-concept in clinically depressed women and that these results were maintained over time. Petruzello (1995), however, found exercise associated with only a small to moderate reduction in anxiety. This small effect was shown to last between 2 and 4 hours following the cessation of exercise, eventually returning to pre-exercise levels.

**Explanations Pertaining To The Effects Of Physical Activity On Self-Concept**

The previous results have been explained by a variety of theories, each theory a little different from the next. The most prevalent theory states that by engaging in a physical activity regimen, participants perceive themselves as attaining mastery (Stein and Motta, 1992; Tappa and Duda, 1996; Ossip-Klein et al., 1989) which leads to an increase in competence, enhancing self-concept. In contrast, Leonardson and Gargiulo (1978) found actual physical performance and self-concept were not significantly correlated.

Bluechardt and Shepard (1995) proposed that self-concept is enhanced due to the increased attention the individual is receiving through an activity. They have suggested that individuals engaged in a physical activity will show a gain in self-concept equivalent to those students involved in any other activity which results in an increase of attention that is received.

Other researchers have suggested that self-concept may be tied to perceptions about one's body and physical appearance. "The change in self-concept can then be understood in terms of narrowing the discrepancy for these subjects between the ideal body and what they see as their own bodies" (Stein and Motta, 1992). Tucker (1983), in support of this theory, states that changes in body cathexis indicate the positive association between
exercise (specifically weight training) and self-concept enhancement. Changes in body-image, physique or physical fitness, whether actual or perceived, appear to be a viable aspect of self-concept (Leonardson and Gargiulo, 1978).

Chemical changes in active individuals have been proposed as an explanation of the reduction of psychological disorders (i.e., depression, anxiety...). "Theoretically, it is possible that chemical and physiological adaptations in the body are responsible for the positive effects of exercise on mood" (Morgan, 1992).

Shaw and Caldwell (1995) have suggested that engagement in a physical activity program may bridge the gap between childhood play and adult work. Involvement improves social skills, increases competence, allows opportunities to explore alternatives, provides a sense of identity and independence...all enhancing self-concept. Marsh (1996) supports this multi-dimensional view; however, he states that the gender of the individual participant and the specific activity participated in effects self-concept uniquely.

SUMMARY

In conclusion, the literature reviewed supports the notion that physical activity results in physical and psychological well-being. Providing and promoting interscholastic activity programs in our school districts allows participants to benefit from the positive mental/emotional effects which result from these programs. Adolescents, due to their transition from childhood to adulthood, are struggling to form a strong, stable sense of identity. The formation of a positive identity is crucial in this particular stage. Interscholastic activities can foster self-concept and help adolescents form a positive, productive identity.
CHAPTER THREE

SAMPLE

The population used in the study consisted of 40 high school students. The students ranged in grade level from ninth to tenth grade, and ranged from 14 to 16 years of age.

The gender composition of the sample consisted of 15 females and 25 males. All students came from either public or private, middle-class schools in southern New Jersey.

Twenty students participated in an interscholastic basketball sport program; the remaining did not participate in any interscholastic team activity. The basketball program consisted, on average, of 3 team practices per week and 1 competitive game per week.

The participants consisted of 5 females and 15 males. Of the participants, 14 were Caucasian and 4 were African-American, 2 players were Hispanic. The ethnicity of the control subjects consisted of 12 Caucasians, 2 African-Americans, and 1 Hispanic.

MEASUREMENTS

To ascertain a self-concept score, the Tennessee Self-Concept Scale (TSCS-2, Adult Form) was implemented as a pre-test and post-test. It was imperative to measure the self-concept of students prior to engaging in their activity program and after participation had been on-going for 10 weeks. By comparing the differences from the pre-test and post-test
of both the active and non-active groups, the importance of interscholastic activity
participation on self-concept improvement could be assessed.

There are two forms of the TSCS:2, the Adult Form and the Child Form. The Adult
Form, which was implemented in this study, has 82 items. The form consists of self-
descriptive statements that allow the individual to portray his or her own self-picture
using five response categories—"Mostly False," "Mostly True," "Always False,

Two types of reliability estimates—internal consistency and test-retest reliability—are
presented here for the TSCS:2 scores. The higher the internal consistency estimate for a
scale, the more likely it is that the item responses are measuring the same underlying
construct and the more likely it becomes that the scale will correlate with other internally
consistent measures of the same construct. The TSCS:2 internal consistency values
indicate adequate to quite good scale consistency for an instrument of this type. Refer to
Table 2.1 (Fitts, Warren; 1996).

Table 2.1

<table>
<thead>
<tr>
<th>TSCS:2 SCORE</th>
<th>AGE LEVEL</th>
<th>13 - 18 yrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total self-concept</td>
<td></td>
<td>.93</td>
</tr>
<tr>
<td>Physical self-concept</td>
<td></td>
<td>.75</td>
</tr>
<tr>
<td>Moral self-concept</td>
<td></td>
<td>.73</td>
</tr>
<tr>
<td>Personal self-concept</td>
<td></td>
<td>.76</td>
</tr>
<tr>
<td>Family self-concept</td>
<td></td>
<td>.79</td>
</tr>
<tr>
<td>Social self-concept</td>
<td></td>
<td>.73</td>
</tr>
<tr>
<td>Academic / Work self-concept</td>
<td></td>
<td>.81</td>
</tr>
<tr>
<td>Identity</td>
<td></td>
<td>.85</td>
</tr>
<tr>
<td>Satisfaction</td>
<td></td>
<td>.79</td>
</tr>
<tr>
<td>Behavior</td>
<td></td>
<td>.81</td>
</tr>
</tbody>
</table>
One of the most readily apparent ways to estimate reliability is test-retest reliability (Dane, 1990). The test-retest reliabilities of the TSCS:2 were evaluated by examining the responses of 135 high school students who took the Adult Form twice (Fitts, Warren; 1996). Refer to Table 2.2.

Table 2.2

<table>
<thead>
<tr>
<th>VALIDITY SCORES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inconsistent Responding</td>
<td>.47</td>
</tr>
<tr>
<td>Self-Criticism</td>
<td>.67</td>
</tr>
<tr>
<td>Faking Good</td>
<td>.71</td>
</tr>
<tr>
<td>Response Distribution</td>
<td>.74</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUMMARY SCORES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Self-Concept</td>
<td>.82</td>
</tr>
<tr>
<td>Conflict</td>
<td>.62</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SELF-CONCEPT SCALES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>.79</td>
</tr>
<tr>
<td>Moral</td>
<td>.77</td>
</tr>
<tr>
<td>Personal</td>
<td>.73</td>
</tr>
<tr>
<td>Family</td>
<td>.60</td>
</tr>
<tr>
<td>Social</td>
<td>.70</td>
</tr>
<tr>
<td>Academic/Work</td>
<td>.76</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUPPLEMENTARY SCORES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity</td>
<td>.69</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>.75</td>
</tr>
<tr>
<td>Behavior</td>
<td>.75</td>
</tr>
</tbody>
</table>

The TSCS:2 has been shown to be a reliable measure of self-concept. It can be used with confidence to identify strengths and weaknesses in overall self-concept and in specific areas of self-concept, and to plan interventions accordingly (Fitts, Warren; 1996). Refer to Appendix 1 to view sample questions of the TSCS:2.
Along with the TSCS:2 pre-test, a brief questionnaire was given to the subjects. The questionnaire asked subjects to list their name, age, grade level, ethnicity, and the participation, if any, in an after school program (an athletic sport program). Refer to Appendix 2 to view the questionnaire.

The Tennessee Self Concept Scale (TSCS:2) and questionnaire were personally administered. After a brief introduction and call to attention by the students' teacher or coach (according to the specific group I was working with), I passed out the TSCS:2 and questionnaire. I explained to the subjects that I was researching self-concept and its reluctance to change. I then proceeded to read the instructions of the TSCS:2 aloud. All students were allowed to work on both the questionnaire and the self-concept questions at their own pace. However, the approximated time of completion is 10 to 12 minutes.

After 20 minutes I announced to the students who were still working that they should be close to completion. All students completed the questionnaire and TSCS:2 within 25 minutes. This process was repeated 10 weeks later to provide post-test scores.

The research method used was quasi-experimental. It was simply not possible to randomly assign participants to the independent condition (due to basketball try-outs, which are required in all interscholastic sport programs).

The results were scored manually according to the Tennessee Self Concept Scale, Second Edition, Adult Form Manual. A basic experimental design was used to interpret the subjects' TSCS:2 scores. Inferential statistics were used to determine the extent to which the two groups (active 'vs' non-active) performed differently on the dependent variable (self-concept scores). Specifically, an independent t-test was used to analyze the research data (Campbell and Stanley, 1966).
TESTABLE HYPOTHESIS

ALTERNATIVE HYPOTHESIS

Subjects participating on an interscholastic basketball team will demonstrate significantly higher gains on the Tennessee Self-Concept Scale than their non-participant counterparts.

NULL HYPOTHESIS

Subjects participating on an interscholastic basketball team will not demonstrate significantly higher gains on the Tennessee Self-Concept Scale than their non-participant counterparts.

ANALYSIS

The data in this investigation using the Tennessee Self-Concept Scale was analyzed by an independent t-test to detect the quality or change of self-concept between the active and non-active groups. The questionnaire will be used to detect possible confounding variables. A significantly higher gain in self-concept scores (pre to post-test) of the control group represents the notion that adolescents' involvement in interscholastic sport programs tends to result in an increase of their self-concept.

SUMMARY

As can be seen from the preceding description of the procedure used in this study, 20 adolescent high school students were examined. The study was used to determine
whether subjects involved in an interscholastic sports program (basketball) resulted in a higher gain in self-concept compared to those subjects who did not participate in such a program.

The TSCS:2 Adult Form was used, in conjunction with a self-made questionnaire, to ascertain a change in self-concept of both the active and non-active groups. The change in self-concept between the groups was determined by administering a pre-test, then a post-test after the independent variable had been introduced and implemented for 10 weeks.

The upcoming chapters will present the data, highlight the results of data analysis and discuss the conclusions which may be drawn from these.
CHAPTER FOUR

ANALYSIS OF RESULTS

The results of this study will be presented in the order dictated by the hypothesis listed in Chapter Three. In this chapter the hypothesis are restated. The results of the study will be provided, as well as a brief interpretation of the results. A discussion section was added to note possible reasons for the results found.

RESTATEMENT OF HYPOTHESIS

ALTERNATIVE HYPOTHESIS

Students participating in an interscholastic basketball program will demonstrate significantly higher gains on the Tennessee Self-Concept Scale (TSCS:2) than their non-participant counterparts.

NULL HYPOTHESIS

Students participating in an interscholastic basketball program will not demonstrate significantly higher gains on the Tennessee Self-Concept Scale (TSCS:2) than their non-participant counterparts.
RESULTS

This study fails to reject the null hypothesis that students participating in an interscholastic basketball program will not demonstrate significantly higher gains on the TSCS:2 than their non-participant counterparts.

T-Tests for Independent samples of six pre/post test sub-scales were performed. These six scales consisted of subjects' Physical, Moral, Personal, Family, Social and Academic Self-Concepts. The mean pre/post test scores of the participants in an interscholastic activity program are reported in Table 4.1. The mean scores of the non-participant group are reported in Table 4.2. Both Table 4.1 and Table 4.2 illustrate the mean increases or decreases experienced in each group from pre to post testing trials.

Subjects' average score in the experimental group (pre to post-test) increased from 42.7 in the moral sub-scale to 48.85; in the personal sub-scale, 47.7 to 50.5; family, 48.4 to 49.25; social, 46.85 to 47.65. A decrease was experienced in the physical sub-scale, 49.2 to 48.9; and in the academic sub-scale, from 47.75 to 47.5. The control group experienced gains in the physical sub-scale from 44.8 to 45.2; moral, 44.7 to 48.45; personal, 46.85 to 47.45; family, 45.00 to 49.85; social, 47.5 to 51.75; academic, 47.15 to 48.55.

In addition to these results, Table 4.3 compares the gains or deficits experienced from pre- to post-test scores within both the experimental and the control group. Table 4.3 illustrates that the experimental group did not experience significantly higher gains in self-concept from pre- to post-testing as compared to the control group. Negative numbers signify that the mean self-concept scores actually decreased from the pre-test to the post-test. Respectively, positive numbers indicate an average rise in the particular
Table 4.1

$t$-Test Self Concept Sub-Scales Pretest vs Posttest

![Graph showing t-Test Self Concept Sub-Scales Pretest vs Posttest](image-url)
Table 4.2

t-Test for Non Participant SubScales Pretest vs Posttest

<table>
<thead>
<tr>
<th>Sub Scale</th>
<th>Pretest Mean</th>
<th>Posttest Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>46.2000</td>
<td>47.1500</td>
</tr>
<tr>
<td>Moral</td>
<td>44.7000</td>
<td>45.0000</td>
</tr>
<tr>
<td>Personal</td>
<td>48.4500</td>
<td>49.8500</td>
</tr>
<tr>
<td>Family</td>
<td>46.0500</td>
<td>47.5000</td>
</tr>
<tr>
<td>Social</td>
<td>47.5000</td>
<td>48.6500</td>
</tr>
<tr>
<td>Academic</td>
<td>47.1500</td>
<td>48.6500</td>
</tr>
</tbody>
</table>
Table 4.3

Pretest/Posttest Differences on Self Concept Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>Control</th>
<th>Experimental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>-3.4000</td>
<td>-2.0000</td>
</tr>
<tr>
<td>Moral</td>
<td>-1.500</td>
<td>-0.6000</td>
</tr>
<tr>
<td>Personal</td>
<td>-2.0000</td>
<td>-0.8000</td>
</tr>
<tr>
<td>Family</td>
<td>-4.8000</td>
<td>-2.4000</td>
</tr>
<tr>
<td>Social</td>
<td>-4.7500</td>
<td>-2.5000</td>
</tr>
<tr>
<td>Academic</td>
<td>-4.2500</td>
<td>-2.2500</td>
</tr>
</tbody>
</table>
self-concept sub-scale. By examining Table 4.3's data for the experimental group, it becomes apparent that the mean average dropped in the physical and the academic self-concept sub-scales, -.3 in the physical sub-scale and -.25 in the academic sub-scale. In contrast, the control group experienced gains in each sub-scale, .4 and 1.4. The results illustrate that, in all of the self-concept sub-scales, the control group's mean increased. The experimental group did, however, experience greater gains in the moral sub-scale (4.15) compared with the control group (3.75). Greater gains were also experienced in the personal sub-scale (2.8 compared to the control group's gain of 1.6). The greater gains in both the moral and personal sub-scales experienced by the experimental group do not result in a significant increase in overall self-concept. It should be mentioned that a major increase in the family and the social sub-scales were experienced by the control group in comparison with the experimental group. From pre- to post-test, the control group's average score increased 4.85 in the family sub-scale and 4.25 in the social sub-scale. The experimental group, however, increased a mere 1.25 in the former and .8 in the latter sub-scale.

Levene's Test for Equality of Variance was computed and is displayed in Table 4.4. Not one of the six self-concept sub-scales was found to elicit a significant gain.

Table 4.5 clearly states, for all six sub-scales and for both the experimental and the control group, their mean, standard deviation, standard error of mean, and the mean difference between the two groups. This table statistically summarizes the previously discussed results separately for the pre-test and the post-test conditions. The far right hand column was added to separate the mean difference between the pre-test and the post-test of each group. This column was submitted to complement Table 4.3.
Table 4.4

Levene's Test for Equality of Variance

\[ t-\text{Test for Equality of Means} \]

<table>
<thead>
<tr>
<th>Sub Scale</th>
<th>Pretest Significance</th>
<th>Posttest Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>0.288</td>
<td>0.247</td>
</tr>
<tr>
<td>Moral</td>
<td>0.625</td>
<td>0.411</td>
</tr>
<tr>
<td>Personal</td>
<td>0.513</td>
<td>0.244</td>
</tr>
<tr>
<td>Family</td>
<td>0.857</td>
<td>0.045</td>
</tr>
<tr>
<td>Social</td>
<td>0.842</td>
<td>0.045</td>
</tr>
<tr>
<td>Academic</td>
<td>0.731</td>
<td>0.045</td>
</tr>
</tbody>
</table>

Self Concept Sub Scales
Table 4.5

<table>
<thead>
<tr>
<th>Variable Sub Scales</th>
<th>Cases</th>
<th>PRE-TEST</th>
<th>POST-TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self Concept</strong></td>
<td></td>
<td>Mean SD</td>
<td>Mean SD</td>
</tr>
<tr>
<td>Physical</td>
<td>20</td>
<td>44.3000</td>
<td>11.094</td>
</tr>
<tr>
<td>Mental</td>
<td>20</td>
<td>44.7900</td>
<td>10.746</td>
</tr>
<tr>
<td>Personal</td>
<td>20</td>
<td>45.8200</td>
<td>10.591</td>
</tr>
<tr>
<td>Family</td>
<td>20</td>
<td>45.8200</td>
<td>9.672</td>
</tr>
<tr>
<td>Social</td>
<td>20</td>
<td>47.5000</td>
<td>11.047</td>
</tr>
<tr>
<td>Academic</td>
<td>20</td>
<td>47.1800</td>
<td>6.826</td>
</tr>
</tbody>
</table>

<p>| <strong>Mean Difference Between Control and Exp Group</strong> |
| Mean Difference |</p>
<table>
<thead>
<tr>
<th>Mean SD SE of Mean</th>
<th>Mean SD SE of Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.065</td>
<td>0.6060</td>
</tr>
<tr>
<td>2.91</td>
<td>0.8050</td>
</tr>
<tr>
<td>2.72</td>
<td>0.6060</td>
</tr>
<tr>
<td>2.72</td>
<td>0.6060</td>
</tr>
<tr>
<td>2.72</td>
<td>0.6060</td>
</tr>
<tr>
<td>2.72</td>
<td>0.6060</td>
</tr>
</tbody>
</table>

CHAPTER SUMMARY

A significant gain was not achieved on the Tennessee Self-Concept Scale by those students participating in an interscholastic activity program as compared to their non-participant counterparts. All six of the self-concept sub-scores were found to be insignificant. Therefore, this study fails to reject the null hypothesis.
SUMMARY and CONCLUSIONS

SUMMARY

The purpose of this study was to determine if student participation in an interscholastic activity program would result in a significant elevation of self-concept as compared to their non-participant counterparts.

The Tennessee Self-Concept Scale (TSCS:2) was administered to determine subjects' self-concept. The subjects participated in one of the two existing conditions. The control condition was composed of sedentary students (no past, present, or immediate future participation in an interscholastic activity program). The variable condition consisted of students registered to begin participation in an interscholastic basketball program.

A pre-test was administered to reveal each group's base-line self-concept. Ten weeks after the experimental group began participation in their basketball programs (while the control group remained non-active) a post-test was administered.

Six sub-scales were used to determine self-concept scores. The six sub-scales consisted of physical, moral, personal, family, social and academic self-concept. The results in each sub-scale, for each group, were totaled and averaged, then compared to
CONCLUSION

There are a number of conclusions which can be drawn from the results of this study.

1. It appears that student participation in an interscholastic activity program does not automatically result in a significant increase of their self-concept.

2. It has previously been suggested that students who seek out participation in an interscholastic activity program are more confident about the physical, personal, and social aspects of themselves (Finkenberg, 1991). According to the base-line data of the present study, it appears that students who register to participate in an interscholastic activity program do possess a higher initial self-concept in most of the sub-scales as compared to students not interested in participation in a physical activity type program. Participants did have a significantly higher score in the physical and family sub-scales and slightly higher scores in the personal, and academic sub-scales. These elevated sub-scale scores were not produced in the moral or, surprisingly, the social pre-test sub-scores.

3. Self-concept varied tremendously within groups. Subject variability appears to influence one's self-concept significantly more than the effects of participation in an athletic program. The self-concept of some students did significantly improve, which leads me to the conclusion that unique individual characteristics (ie., temperament, environmental situations including economic and family structure variables...)
DISCUSSION

There was not a significant relationship between the hypothesized variable and the group of active students. However, a relationship was found between individual members of the experimental group and self-concept. This finding leads me to believe that individual differences (attitudes, temperament, situational variables...) influence how and what effect participation had on the subjects' self-concept. Two different basketball teams participated. Variables within these groups, such as coaching styles, team and individual attitude, perceived individual and team performance, team rank, family and over-all spectator reactions, could have influenced the individual scores. Therefore, it can be assumed that participation in a physical activity program can help increase self-concept in some individuals and not have a similar effect on other individuals, depending on their unique personality profiles and situations. This finding adds support to Finkenberg's and Teper's (1991) previous findings.

Shockingly, the active group experienced an average score decrease in the physical self-concept sub-scale. Past research has repeatedly claimed that physical activity increases one's confidence and physical self-image (Tucker, 1983). Past theories have stated that physical activity improves physical appearance resulting in an elevated self-image, hence, an increase in the physical self-concept sub-scale. In regards to the present study, it could be possible that the 10-week testing interval did not allow adequate time for perceived
physical improvement, therefore, an increase in the physical self-concept sub-scale was not experienced. Post-test data could have been skewed due to numerous situational variables: both teams were ranked low in their leagues, (unfortunately post-test data was gathered prior to their last, most challenging game) stress levels were high, and coaching styles could have varied within the group. Carlsmith (1962) and O'Reilly (1973) stated, "Improvement of self-concept is considered a process requiring increased sense of competence;" a low ranking team does not usually possess much competence.

In the present study, the control group was composed of individuals whom in the past, present or immediate future were not participating in an interscholastic activity program. These subjects experienced gains in each of the six self-concept sub-scales from pre- to post-test trials. Minimal gains were expected as a result of the practice effect, however, the control group registered greater gains than originally expected. The gains experienced, especially the dramatic gains which occurred in the social sub-scale, could have been a result of participation in a different type of program (which was not previously taken into consideration): an academic program such as the math club, a church club, or any other non-physically oriented organization. It is reasonable to assume that participation in any group organization could result in an increased self-concept (i.e., those involved in a math club would score higher, from pre- to post-testing trials, in the academic sub-scale and most likely the social and personal self-concept sub-scales).

Therefore, involvement in different groups would result in improvement on different self-concept sub-scales. If, for example, a child is acting aggressively in school, possibly due to a poor academic self-concept, a possible intervention would be to encourage him/her to enroll in an after school study group. The key to increasing students' self-concept could
be the act of participation itself within an organization, an organization which fosters individual needs and interests.

There are several factors which have been influential in the results of this study. It is important to mention these factors in order to correctly interpret the results of this study.

First, it must be noted that the observations were done on two different basketball teams. Coaching styles differ, along with individual reactions to the particular coaching technique implemented. It is possible that some of the results gained from the post-tests would have been different if the participants were placed on a different team, with different teammates, or with another coach.

Individual variability within groups may have skewed participant scores. It appears that individual characteristics, including interpersonal variables, have a direct and influential relationship to self-concept in regards to participation in an interscholastic activity program. Individuality must be taken into account when considering the generalizations of the present study.

Team, and individual, success also could have skewed the post-test results. Both of the teams participating in the present study were ranked low in their league. This lack of success could have contributed to feelings of defeat, inferiority, or failure. The post-test was also obtained immediately prior to each team's last game which could have compounded these negative feelings. Anxiety and tension were also due to post-testing conditions.
IMPLICATIONS FOR FURTHER RESEARCH

Increase Testing Interval

This study could have been enhanced by utilizing a longer time interval between pre- and post-test conditions. A 10-week time interval may not have been long enough for participants to see visible improvements in their physical condition or their skill level, therefore, they did not experience the accompanying gain in self-concept post-test scores. If the testing time interval were extended, thereby allowing for perceived social, physical, and personal changes, the research conducted could have provided more reliable results.

Obtaining A More Heterogeneous Sample

The sample used in the present study was relatively heterogeneous in terms of student ethnicity. However, the socioeconomic backgrounds (middle-class) and the gender of the students (a disproportionate representation of the male) was very homogeneous. The limited age distribution also limits the generalizations of this study strictly to the adolescent population. Perhaps, if a more heterogeneous sample were studied, different results would have been acquired.

Obtaining A Larger Sample Size

Generalizations of the results are also risky due to the inadequate number of participants in the study. The number of subjects was not large enough to counter the expected effects of variability within subjects. Since only 20 subjects were employed in each testing condition of this study, generalizations of the results is rather limited.
REFERENCES


Latimer (1979). Thesis. Study to determine the relationship between student self-concept and participation in organized athletic competition involving seventh and eighth grade males in Ocean City, New Jersey.


Appendix 1

Sample Questions of the TSCS: 2

1 = Always False
2 = Mostly False
3 = Partly False and Partly True
4 = Mostly True
5 = Always True

1 2 3 4 5 1. I am an attractive person.

1 2 3 4 5 27. My family would always help me with any kind of trouble.

1 2 3 4 5 40. Once in a while I think of things too bad to talk about.

1 2 3 4 5 64. I feel good most of the time.

1 2 3 4 5 76. I am satisfied with my relationship with God.
Appendix 2

Sample Questionnaire form

Name:

Administration Date:

Age:

Gender:

Grade/Years of Education Completed:

Ethnicity:

Please list any past, or present participation in any physical sport activity program sponsored by your school district: