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The Effects of Weight Training on Self-Esteem

Jeffrey Carpenter

The College at Brockport

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THE EFFECTS OF
WEIGHT TRAINING
ON SELF-ESTEEM

A THESIS PRESENTED TO
THE GRADUATE SCHOOL DIVISION OF PHYSICAL EDUCATION AND SPORT
STATE UNIVERSITY OF NEW YORK
COLLEGE AT BROCKPORT

IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE
MASTERS OF SCIENCE IN EDUCATION
(PHYSICAL EDUCATION)

JEFFREY CARPENTER

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Date: 12/20/91

Chairperson, Department of Physical Education and Sport
ABSTRACT

THE EFFECTS OF WEIGHT TRAINING ON SELF-ESTEEM

JEFFREY CARPENTER

DEPARTMENT OF PHYSICAL EDUCATION AND SPORT
STATE UNIVERSITY OF NEW YORK
COLLEGE AT BROCKPORT, 1991
DR. DANIEL SMITH, ADVISOR

The purpose of this investigation was to examine the effects of weight training on self-esteem. The investigator used a pretest-posttest randomized group design, using Fox' Physical Self-Perception Profile, in two high schools. The experimental group consisted of members of beginning weight training classes offered as part of the physical education curriculum. The control group was comprised of students in regular health classes. The investigation was conducted over a period of five weeks with three sessions per week for the experimental group. The weight training sessions lasted approximately 40 minutes and were supervised by district physical education teachers. Using the analysis of covariance (ANCOVA), results in two of the five subscales demonstrated that the experimental group improved significantly more than the control. In the other three subscales, the experimental group had greater improvement but no statistical significance was evident.

III
ACKNOWLEDGMENTS

With the conclusion of this thesis project, it is important to recognize and acknowledge those people who have supported me in my graduate work. These individuals have played key roles in the completion of my masters degree, but more importantly have helped shape my current and future work.

I would like to thank Dr. Swapan Mookerjee who pushed the idea of doing research as a personal challenge and a contribution to the field. Next, if it were not for my advisor, Dr. Daniel Smith, this project would not have gotten out of the starting gate. Along with his initial encouragement, his expert advice and knowledge in "goal adjustments" kept me going through the trying times.

Without the support of the students and staff at Rush-Henrietta and Churchville-Chili High Schools, this research would not be possible. A special thanks to Jerry Everling, Dick Young, and Fred Carbone at Rush-Henrietta and Gary Boyce, Susan Sage, and Leslie Bowman at Churchville-Chili.

Finally, I wish to thank my wife Angela and daughter Amanda for supporting me throughout the duration of the project. They make the experience of achieving goals a happy and worthwhile endeavor.
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CHAPTER 1

INTRODUCTION

The interest in and the relationship between body and mind has been with mankind since the days of the ancient philosophers such as Socrates (Plato, 1946). The popularity and importance of fitness has been a fluctuating variable in physical education curricula throughout the 1900's in the United States. It is interesting to note that fitness has been heavily influenced by war and politics. Many state laws requiring physical education came about as a result of strong feelings in the area after World War I. Again, after World War II, there was an urgency to emphasize fitness after many draftees had failed physicals or entered the services in poor physical condition (Clarke & Clarke, 1970). This writer believes the fitness explosion of the seventies and eighties has heightened the awareness of many researchers in the fields of psychology and physiology. Proportionately, the importance of physical fitness and appearance to an individual's self-esteem has also grown during this period of time.

Physical education, as a discipline, has always been closely associated with fitness or lack of fitness. While the typical layperson affiliates good fitness with physical
strength, endurance and good health, the well-trained physical educator has an awareness of the benefits far beyond this narrow scope. Development of healthy self-esteem has often been mentioned as a positive consequence of fitness programs.

Children who have symptomatology in the area of school failure, physical and verbal aggression, withdrawn behavior, etc., typically experience a lack of normal development of positive self-esteem. For those who are plagued with poor self-esteem, the impact on their daily life can be destructive. Robson’s (1990, p. 5) belief that once this poor opinion of self is established, it is too easily maintained and supported, does not bode well for the possessors of poor self-esteem. He goes on to state, “the child’s expectations are confirmed, the self-defeating behavior is reinforced and a vicious cycle is completed.”

The importance of good self-esteem cannot be limited to children with emotional problems who have been referred to a restrictive psychiatric setting because of maladaptive behaviors. The ability to constructively deal with life’s daily joys, sorrows and challenges is very much dependent on an individual possessing healthy self-esteem. Those lacking in this area are more prone to experience mood swings, decreased socialization opportunities and a reluctance to try new endeavors.
Jerome Kagan (1986) believes there are two major sources of chronic stress on children, youth and adults. One of these stress themes is uncertainty about one's value and worth leading to the inability to be in control of occurrences that lead to goal actualization. Stithers (1990) draws a parallel between depression and poor self-esteem and the potential for suicide among our youth. Much of the blame for the other listed problems can be attributed to youth seeking alternative solutions to feelings of hopelessness flowing from poor self-esteem.

Within our schools, failure should be seen as part of the learning process. For those who don't have adequate confidence, this normal part of the learning experience can be devastating. The breakdown of the family unit in American society has been a tremendous influence on those children who are members of single parent families. Children who have no sense of belonging experience feelings of low self-worth. In turn, they may resort to drugs, deviant behavior and gang membership for the reinforcement they need to feel important.

As one examines case histories of youth in conflict, a central theme typically emerges in a list of symptoms - poor self-esteem. Long and Wood (1990) refer to the conflict cycle in which a youth becomes entangled in repetitive, negative behavior because the self-concept cannot handle
different types of stress. Until this cycle is broken and the youth feels better about themself (through success experiences), problems will continue to surface. It is at this point that educators and clinicians struggle with the responsibility for and techniques to break the cycle. Educators often deny their role by claiming failures of the parents cannot be undone in six hours of school a day. Parents want, and need, help in developing the positive aspects of their children's personality.

PURPOSE

In this investigation, subjects were assigned to groups according to physical education choices they voluntarily signed up for as part of their ongoing high school education. The treatment group(s) was part of weight training classes designed as part of the physical education curriculum. The control group(s) were health classes not involved in any type of weight training or physical fitness program during the period of time the investigation took place. A pretest and posttest was used to measure improvements for each group. The purpose of the investigation was to determine if there was significant difference in self-esteem improvement between the two groups.
RATIONALE

Weight training has been an optional physical education choice in many high schools and colleges. Recent studies (Holloway, Beuter, & Duda 1988, Jones 1989, Ossip-Klein et al 1989, Tucker 1982, Tucker 1983, Wyrzla 1989) indicate a positive relationship between weight training and an increase in self-esteem. Many educators believe we are at a point where any proven theories that lead to enhancement of self-esteem are worthy for exploration and use in our school districts and treatment centers. The theory that fitness, and weight training in particular, can improve self-esteem needs to be explored. To infer that lifting weights and improving self-esteem would cure America's ills is foolish. To suggest that an overall program of making youth feel better about themselves, as they develop physically and emotionally, is a necessity. What is needed at this time is research to enable educators to focus on the problem in a manner that has been proven.

HYPOTHESIS

Self-esteem improves through weight training.
DELIMITATIONS

The age grouping was comprised of high school students in grades 9-12 and therefore the results may not be applicable to all members of the general population. As the investigation was limited to a five week physical education weight training class, the results may not be compared to involvement in weight training of longer periods of time. The results are very specific to weight training and should not be generalized into an "activity type" category.

LIMITATIONS

Within this investigation several items may have encroached on the findings, therefore are in need of description. Since the investigation was completed at two different high schools from separate districts, there may be subtle differences in the types of students. Teaching philosophies differ between districts and departments, thus the emphasis and methodology in each classroom setting may have been different. Student response to instructors is obviously different as two different physical educators were involved in the instructional process. The availability of instructional material (free weights, nautilus, etc.) varied from district to district. While attendance is mandatory in
each weight training class, student illness is a factor beyond control of the investigator. Each individual student has optimally given their best effort to not only earn a high grade, but to realize the benefits of weight training. However, one cannot control the level of exertion among individuals in a classroom setting. All participants were asked by the investigator and physical educator to give maximum effort for purposeful participation in the class and research project. The control group consisted of students not participating in weight training for the five week period. If they were involved in weight training at home, they were asked not to participate in the investigation.

DEFINITIONS

Throughout the literature, the expressions self-esteem, self-concept, self-awareness and self-confidence are often used interchangeably. Throughout this paper, when an author is referenced, the terminology he or she uses was honored. For the purposes of clarity and descriptiveness, the following definitions were adhered to on a consistent basis.

SELF-CONCEPT: "Multidimensional in structure, the construct refers to the constellation of beliefs, attitudes and
perceptions of one's own abilities, traits, values, physical characteristics and the like" (Tucker 1983 p. 389).

SELF-ESTEEM: "is concerned with the evaluative element of self-concept where individuals formulate a judgment of their own worth" (Fox 1990 p. 2).

WEIGHT TRAINING: a regular, structured program incorporating exercises that involve resistance training with free weights or machines designed to provide resistance. The program should be three times per week for 40 minutes each session.

ARM CURL: start in a standing position with arms out straight in front of body. Barbell is held shoulder width apart using an underhand grip. Keeping the back straight and upper arms stationary, flex the arms completely and then lower to the starting position.

BENCH PRESS: lie on a bench with the arms fully extended above the chest while grasping a barbell, palms away. With the hands spaced wide enough to produce a 90° angle in the elbow when the bar touches the chest, lower the barbell to the chest. Raise it until the arms are straight again.
MAXIMUM WEIGHT: the highest amount of weight one can lift in described exercise for one repetition.

SITUP: lie on back, knees flexed, feet on floor and heels between 12 and 18 inches from the buttocks. The arms are crossed on the chest with the hands on opposite shoulders. Feet are held by partners. With arm contact with the chest, come to a sitting position and touch elbows to the thighs. Return to the down position until the midback makes contact with the surface.
CHAPTER 2

REVIEW OF LITERATURE

CHANGING SELF-ESTEEM

Self-esteem has been defined as the evaluative or judgemental element of self-concept (Fox, 1990). Methods need to be developed to improve one's rating of self. Methodology could include social interaction groups, one-to-one tutoring, modeling class, weight training, etc. There are a multitude of choices one could make to engage in effective work on self-improvement. The individual choice is very much dependent on the weighting a person gives to the importance of the various domains. Rosenberg (1979) has described several areas of content which comprise one's self-concept including the following:

- social identities (age, occupation, family position, etc.), membership groups, labels, derived status, social types.
- dispositions including self-perceptions in abilities, traits, values, habits, preferences.
- physical characteristics.
Thus, when seeking to set a program or plan to improve self-esteem, any of the above content areas could be used. Upon closer examination, one could ascertain that a weight training program may be useful in changing self-esteem in a positive manner in all of the content areas. Weight training could be done within a group context, thereby increasing the individual's sense of social belonging with a corresponding increase in personal worth. The benefit would be even more significant if the individual had been searching unsuccessfully for this sense of membership.

In the disposition content area, the weight trainer's ability level is likely to improve which would increase self-esteem in that area. Finally, the changes likely to result in the area of physical characteristics are well documented. Jones found in his research "that both postpubescent and prepubescent boys can gain in strength and girth measures as a result of a weight training program" (p. 49, 1989). The effect of weight training on physical characteristics is further supported by Tucker who states that "significant gain in strength and muscle girth are common consequences of regular weight training by males" (p. 390, 1983).

In many school and treatment centers attempts to change self-esteem in a positive way are often a primary focus of the teacher or therapist. Descriptions such as the
following are not uncommon in the classroom or gym:

"He doesn't try because he knows he will fail and this keeps him from getting any better."

"She acts out in class to keep the attention away from her sadness."

"He just can't stand to lose."

All of these statements typify students who are plagued by poor self-esteem. Educators are taught to provide success experiences, make the student feel like they belong, give positive feedback, one-to-one attention, and so forth. Weight training is an activity that has all of the above built in and can be taken advantage of by students who are guided correctly.

SELF-ESTEEM AND EXERCISE

It is necessary to examine the relevant literature comparing fitness related activity to the development of self-esteem. As summarized earlier, the possession of positive self-esteem as a personal attribute cannot be disputed. However, the use of weight training as opposed to aerobic exercise, long distance running, etc., to bolster self-esteem can certainly be questioned. The literature contains more results highlighting the positive aspects of these other types of training than that of weight training.
This can be attributed to the recent entry of females into the realm of weight training. Secondly, weight training is being compared to several different activities. Thus, there is no scientific reason to conclude that weight training is not as effective for the purpose of increasing self-esteem as other activities based on sheer number of studies undertaken.

Ossip-Klein, Doyne, Bowman, Osborn, McDougall-Wilson, and Neimeyer (1989) compared the effects of running and weight training on the self-concept of clinically depressed women in a research project done at the University of Rochester. Their findings indicated both forms of exercise served to enhance self-concept and while differences between the groups were small, they slightly favored the weight training group.

The effectiveness of weight training or exercise on enhancing self-esteem can also be traced to several societal factors. In today's world, having a physically attractive body is seen as a positive attribute desired by a great majority. One only needs to count the billions of dollars spent yearly on diet fads, health clubs, exercise clothing and diet centers to substantiate this fact. As a child progresses through crucial developmental stages, they are constantly flooded with a media blitz that emphasizes physical attractiveness. The importance of physical
appearance and performance cannot be argued as an integral part of global self-esteem. Heaps (1978) seeks to minimize the benefits of physical fitness on self-concept by stating any gains result from the emotional or psychological perception of the physical and personal value of continued exertion - not from physical improvement. However, this is exactly the point in using weight training as a self-esteem enhancer. If one is seeking to self improve, one will choose to do so in a category important to them, such as body appearance and fitness. And, if improvement does take place, then it is a natural reinforcer of heightened self-esteem.

What may not possibly improve as a result of a structured exercise program is the level of peer approval. McGowan, Jarman, and Pedersen (1974) found that in the area of endurance training, self-concept significantly increased, but the level of peer approval remained consistent. Peer approval is only one operating factor of several that affects self-esteem and the method of training (running) does not significantly change body appearance. Thus judgement should be withheld until further research addresses peer approval and weight training as an interactional combination.

A study completed by Trujillo (1983) examined the self-esteem of college women in three different groups. The
groups were involved in semester long classes enrolled in running, weight training and a control group. Several of Trujillo's findings are significant although the number of total subjects was relatively low (35). The study found that body image did effect overall self-esteem which over the years has begun to become more universally accepted as a primary domain in self-esteem measurement. Secondly, self-esteem was significantly increased in running and weight training groups with the control group showing a slight decrease. Lastly, the weight training group showed a greater increase in self-esteem than the running group.

In comparing research data examining the effects of exercise on self-esteem, one could conclude that there is a positive relationship in a great majority of studies completed. Upon further examination, in several projects weight training has some support as being more effective than other types of exercise, particularly running, for producing a greater gain in the area of self-esteem.

Perhaps further research could examine whether this is due to the more socially desirable body type produced by weight training, the amount of feedback from significant others, or other reasons. Whatever the reasons, the prime point is the proven effectiveness of exercise and particularly weight training on increasing self-esteem.
SELF-ESTEEM AND WEIGHT TRAINING

The literature addressing individuals and their success at school, work and the social world consistently indicates a need for prescriptive type learning to enhance self-esteem. Rosenberg (1979) states, "The individual strives to excel at that which he values and to value that at which he excels" (p. 75). When one examines this statement, the prime advantage of weight training comes to the forefront. All who participate on a regular basis have an equal opportunity to excel, experience success, and then continue simply because they feel physically and emotionally better because of these gains. Instead of Long's conflict cycle (1990), the youth are now involved in a cycle of healthy choices that self-perpetuate.

As good self-esteem is such an indicator for healthy life, all educators are trained to strive for this as an affective learning objective throughout their lesson plans. In addition, some research indicates that it may be advantageous to introduce youth with poor self-esteem to a weight training program. Tucker (1983) found that those with a low self-concept manifested a higher level of improvement in that area than those with a high self-concept going into a structured weight training program. Hilyer and Mitchell (1979) had similar findings when examining physical
fitness programming and its effect on self-concept. They found that college age students with low self-concepts on the pretest measure made positive changes significant at the .05 level.

In addition to these noted positive studies relevant to increasing self-esteem in those that are operating at an already low level, weight training seems to be a productive way to increase self-esteem in all populations. Wyrzla (1989) found a positive relationship between weight training and improvement in self-concept in college age males. He used groups involved in a golf class, sociology class and a weight training class. While self-esteem remained level (as indicated by a pre/posttest) in the golf and sociology groups, there was an increase in those who participated in the weight training class.

Holloway, Beuter and Duda (1988) examined the relationship between exercise (strength training) and self-esteem among adolescent girls. The group involved in twelve weeks of strength training was compared with a nonactive or mildly active control group. The treatment group improved in strength, weight training efficacy, confrontation efficacy and total efficacy. Most notably, the experimental group was found to have positive changes in perceived physical ability, physical self-presentation confidence and general effectiveness in life. These strengths would
certainly prove beneficial to individuals seeking to find their niche in life throughout the difficult period of adolescence when the risk for negative lifestyle choices is highest.

Our high schools and colleges are seeking to provide proper educational experiences to develop students' attributes in the cognitive, affective and psychomotor domains. The development of self-esteem is directly related to all of these areas and Tucker (1982) has found that an experimental weight training group of college age males showed increases in eight of nine indices on a self-concept scale. At the same time, a control group showed no significant gains in any of the areas. Tucker also found no tendency to increase the subjects status level relative to relatives and friends.

In his study examining the profile of those influenced most by weight training, Tucker (1983) suggested that aerobic and cardiovascular experiments may not generate as much positive feedback as weight training. As positive feedback is a strong agent for bettering self-esteem, it would seem that weight training would be an activity of choice for this purpose. The milieu of the weight room naturally lends itself to both peer and instructor positive feedback. The act of lifting weight in a sequential manner has a natural consequence of increased poundage.
(improvement). Whenever an increase is experienced, the weight trainer will notice improvement as well as peers who spot and the instructor who supervises. The use of charts and measurements may further increase the amount of positive feedback.

The research seems to indicate that weight training may be the activity of choice for the purpose of increasing self-esteem. Not only is the arena in which weight training takes place conducive to positive feedback, but the physical results play an important role. For adolescents and college age students, body appearance is typically of importance and therefore heavily weighted in measures of self-esteem. Body changes in a positive direction are a typical result of consistent, correct weight training. This fact may be of importance in recommending an activity to a student who is in need of positive reinforcement in the area of body imagery.

DURABILITY OF CHANGES AND PROBLEMS IN RESEARCH

Throughout the literature examining the effects of weight training on self-esteem there is one component lacking that would substantiate many studies. There has been a paucity of follow-up studies to ascertain any lasting effects of the initial increase in self-esteem brought about
by weight training. It is extremely difficult to track subjects over a period of time and this may explain why there has not been necessary retesting after several years.

Marsh, Richards and Barnes (1986) did track participants in an Outward Bound program for a period of eighteen months and found that the positive change was maintained over time. The significance is not the program itself, but the fact that the desired change in self-esteem was held internally over a period of time. This, in itself, speaks for developing programs that serve to increase self-esteem as the benefits can be significant over a lifetime.

Another problem in the area of research as described by Folkins and Sime (1981) is that very few control groups are included in the experimental design. They also argued that subjects are abnormal psychologically, physically or cognitively. Researchers since 1981 have corrected both of these problems.

One shortcoming that does appear in the literature is the lack of studies involving female subjects. This can partially be explained by the fact that weight training has not been socially acceptable for women on the level it has for men. This has slowly changed over the past decade and more investigations are surfacing in recent years (Ossip-Klein, et al 1989, Trujillo 1983).
As interest in the field of weight training and self-esteem grows, the amount of research will reflect this growth. Within the last decade, research has become more refined in the areas of numbers of subjects, use of control groups, studies involving both genders, expansion of age range and exploration of different instrumentation to measure self-esteem. All of these improvements in research should result in better curriculum planning and guidance for those who need help.
CHAPTER 3

METHODS AND PROCEDURES

INTRODUCTION

The purpose of this investigation was to examine the effects of weight training on self-esteem in the physical domain. The investigation included a treatment group of beginning weight trainers and a control group of health education students. Any students in either group who were involved in ongoing weight training were asked to exclude themselves from the investigation.

The experimental group received instruction and practiced weight training as part of the regular high school physical education program. A pretest and posttest was given to all participants. The beginning weight training groups met three times weekly for forty minutes for a five week grading period. The control group attended daily health lectures. Each group was administered the pretest on the first day of the five week period and the posttest on the last day of the five week period. Statistical analysis of data consisted of Analysis of Covariance (ANCOVA) and comparison of means.
SUBJECTS

Subjects for the investigation included high school students from Churchville-Chili High School and Rush-Henrietta High School, both located in the suburban Rochester, New York area. A subject mortality section describes in detail the manner in which the number of subjects came about. The subjects ranged in age from 15 to 19 and were enrolled in either group (control or experimental) based on their yearly course of study. The groups chosen to be part of the investigation were selected based on scheduling convenience for district personnel and the investigator.

On the initial day of the investigation, subjects were given a brief description of their role in the investigation and a consent form to be signed by themselves and a parent. Subjects were not required to participate and could not if the consent form was not returned. Subjects were encouraged not to discuss the investigation and questions were deferred until after the posttest was administered. A description of testing materials, methods, subjects, and procedures was submitted to the College Institutional Review Board and approved. The investigation was also approved by the physical education department chairpersons at each high school.
SUBJECT MORTALITY

There are several variables that warrant discussion as causes for the loss of subjects in this investigation. The number of potential subjects lost was greater than the investigator had anticipated. The potential number of subjects in the control group (health classes in both schools combined) was 47 while the potential number of subjects in the experimental group (weight training classes in both schools combined) was 39. The actual number in the control group used was 25 while there were 21 subjects in the experimental group. The reasons for subject mortality were as follows:

Table 1

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<tr>
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</tr>
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</tr>
<tr>
<td><strong>Total</strong></td>
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<td>22</td>
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A pretest-posttest randomized group design was used in this investigation. There was one control group and one experimental group with assignment based on each student's selection of high school courses. The design allows for determining the amount of change caused by the treatment (weight training). The pretest and posttest inventory consisted of Fox's Physical Self-Perception Profile (PSPP). An attempt was made to measure physical performance levels before and after the experimental time period. Due to time constraints, the second set of measurements was incomplete and as a result, not recorded.

TEST INSTRUMENT

Fox's (1990) Physical Self-Perception Profile (PSPP) was chosen as the test instrument because of its effectiveness in addressing self-esteem measurement in the physical domain. The PSPP is also based on the premise that self-evaluation is an important factor in self-esteem. While the instrument is population specific to a young college student population, questions were carefully examined by the investigator and high school instructors for appropriate use with that age group. It was felt that the
questions were suitable for use without amendments. Random questioning of the control and experimental groups after the posttest was administered seemed to support this decision. Students indicated the questions on the profile were easily understood.

Accompanying the PSPP was a Perceived Importance Profile (PIP), also developed by Fox (1990), which weights the subscales on the PSPP for importance to the subject. The PIP can be used as a check for test population validity or factored in as part of the scoring for the PSPP. For the purposes of this investigation, the PIP was used to check the validity with this test population. The PSPP is not an effective measurement tool if the subscale content is not of importance to the subjects. The PIP scores would have a mean above 5.0 if the PSPP is to be deemed reliable. The profiles are equally valid for both genders allowing for gender difference examination.

The Physical Self-Perception Profile consists of five 6-item subscales. Sports competence, physical condition, body attractiveness, and strength are subdomains of the physical self. The fifth subscale, physical self-worth, is designed to measure general overall self-worth. Each subscale is scored 1–4 with a possible range of 6–24. Questions were developed to purposely measure the process, product, and confidence level within each of the subdomains.
This approach allows for the impact on self-esteem throughout the entire learning process of physical skills, not just the end product or skill level. Each subscale was statistically examined individually for significant results.

Internal consistency reliability for each of the subscales was addressed using Cronbach’s Alpha with a range of .81 to .92. Test-retest reliability coefficients ranged from .81 to .88 after the 23-day period between tests.
This investigation examined the effect of weight training on the self-esteem of high school students in the physical domain. A pretest-posttest random group design was used with Fox's (1990) Physical Self-Perception Profile and accompanying Perceived Importance Profile as the test instrument utilized. The purpose of the investigation was to determine the extent of change that may have resulted from weight training and the significance this may have for the population studied.

In this chapter the results of the investigation are presented and interpreted statistically and discussed. The following statistical tools were used to analyze the data:

(1) Mean scores for pretest and posttest Perceived Importance Profile
(2) Analysis of covariance (ANCOVA) in each subscale
(3) Subscale means and standard deviations were presented but not analyzed in depth.
The statistical significance of ANCOVA results were determined using the .05 level.

MEAN SCORES FOR PERCEIVED IMPORTANCE PROFILE

Fox (1990) recommends using the Perceived Importance Profile to validate the reliability of the Physical Self-Perception Profile with different populations. The PSPP was developed and tested primarily with young college age students. The subject pool for this investigation consisted of high school students, thus the age difference was marginal between this project and Fox's work. However, at Fox's (1990) recommendation, the PIP should be used and mean scores in each of the subscales should be above the midrange (5.0). The PIP was administered on both the pretest and the posttest to the experimental and control groups. In both groups, in each subscale, on pre and post tests, the mean scores exceeded the 5.0 level. Thus, the PIP indicated the reliability of the PSPP for this subject pool.

Table 2

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sport</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>5.48</td>
</tr>
<tr>
<td>Control Group Mean</td>
<td>5.68</td>
</tr>
</tbody>
</table>
Table 2 (cont.)

<table>
<thead>
<tr>
<th></th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sport</td>
</tr>
<tr>
<td>Experimental Group Mean</td>
<td>5.67</td>
</tr>
<tr>
<td>Control Group Mean</td>
<td>5.12</td>
</tr>
</tbody>
</table>

SUBSCALE MEAN SCORES AND STANDARD DEVIATIONS

It is interesting to examine the subscale mean scores on the pretest and posttest in both the experimental and control groups for several reasons. While scientific conclusions cannot result from these figures, the investigator may conjecture as to the reasons for obvious figure differences. The control group means in each subscale were higher than those means in the experimental group on the pretest ranging from .11 to 1.51. On the posttest, the experimental group means were higher in 4 out of 5 subscales when compared to the control group. The only subscale in which the experimental group mean remained lower was body attractiveness. This subscale measures perceived attractiveness of figure, ability to maintain an attractive body and confidence in appearance. The experimental group standard deviations were also higher on 9 of the 10 subscales measured in both the pretest and posttest.
Table 3

Pretest

<table>
<thead>
<tr>
<th>Sport</th>
<th>Cond</th>
<th>Body</th>
<th>STR</th>
<th>PSW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group Mean</td>
<td>15.14</td>
<td>16.05</td>
<td>14.05</td>
<td>14.81</td>
</tr>
<tr>
<td>Control Group Mean</td>
<td>16.28</td>
<td>17.56</td>
<td>15.24</td>
<td>14.92</td>
</tr>
<tr>
<td>Experimental S.D.</td>
<td>4.11</td>
<td>4.15</td>
<td>3.85</td>
<td>3.45</td>
</tr>
<tr>
<td>Control S.D.</td>
<td>3.90</td>
<td>3.26</td>
<td>3.63</td>
<td>3.54</td>
</tr>
</tbody>
</table>

Posttest

<table>
<thead>
<tr>
<th>Sport</th>
<th>Cond</th>
<th>Body</th>
<th>STR</th>
<th>PSW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group Mean</td>
<td>16.52</td>
<td>17.29</td>
<td>15.52</td>
<td>15.81</td>
</tr>
<tr>
<td>Control Group Mean</td>
<td>16.12</td>
<td>16.92</td>
<td>15.80</td>
<td>15.24</td>
</tr>
<tr>
<td>Experimental S.D.</td>
<td>4.38</td>
<td>4.19</td>
<td>4.45</td>
<td>4.29</td>
</tr>
<tr>
<td>Control S.D.</td>
<td>4.01</td>
<td>3.14</td>
<td>3.33</td>
<td>3.24</td>
</tr>
</tbody>
</table>

ANALYSIS OF COVARIANCE

Analysis of covariance (ANCOVA) is a statistical tool used for the purpose of accounting for initial differences in subjects before the experiment is implemented. In this investigation, ANCOVA was used to examine differences in the posttest figures while "covaring" out differences in the pretest. ANCOVA is a key statistic allowing the investigator to determine which subscales display the most benefits for the groups. ANCOVA tables and discussion follow in order by subscale. The abbreviations listed in
the tables refer to sum of squares (S.S.), degree of frequency (D.F.), mean square (M.S.), frequency (F), and significance of frequency (SIG of F).

Sports Competence

Table 4

<table>
<thead>
<tr>
<th></th>
<th>S.S.</th>
<th>D.F.</th>
<th>M.S.</th>
<th>F</th>
<th>SIG. of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Effect Group</td>
<td>22.473</td>
<td>1</td>
<td>22.473</td>
<td>4.362</td>
<td>.043</td>
</tr>
</tbody>
</table>

The results indicate that within the subscale of sports competence, using ANCOVA, there is significance at the .05 level. Fox's description of this subscale's intent is to measure "perceptions of sport and athletic ability, ability to learn sport skills, and confidence in the sports environment" (1990, p. 5). This would indicate that in this investigation, weight training had a positive effect on the subjects' self-esteem relevant to sport competence.

Physical Conditioning

Table 5

<table>
<thead>
<tr>
<th></th>
<th>S.S.</th>
<th>D.F.</th>
<th>M.S.</th>
<th>F</th>
<th>SIG. of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Effect Group</td>
<td>26.387</td>
<td>1</td>
<td>26.387</td>
<td>4.968</td>
<td>.031</td>
</tr>
</tbody>
</table>
The results indicate that within the subscale of sports competence, using ANCOVA, there is significance at the .05 level as the Significance of F is .031. Questions in this subscale are designed by Fox (1990) to measure perceptions of "physical conditioning, stamina and fitness, ability to maintain exercise, and confidence in the exercise and fitness setting." The statistical significance discovered in this subscale is similar to that found by Holloway, Beuter, and Duda (1988) in that their subjects had positive changes in perceived physical ability and confidence. The setting for weight training is conducive to positive changes as theorized by Tucker (1983) after his research.

This subscale of physical conditioning would appear to be the one most influenced by weight training previous to the experiment. The statistical ANCOVA supports this thought.

**Body Attractiveness**

**Table 6**

<table>
<thead>
<tr>
<th>Source</th>
<th>S.S.</th>
<th>D.F.</th>
<th>M.S.</th>
<th>F</th>
<th>SIG. of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Effect Group</td>
<td>5.058</td>
<td>1</td>
<td>5.058</td>
<td>.758</td>
<td>.389</td>
</tr>
</tbody>
</table>

The results indicate that within the subscale of body attractiveness, using ANCOVA, there is no significance at
the .05 level. Questions on the PSPP in this subscale are designed to assess perceived attractiveness of figure or physique, ability to maintain an attractive body, and confidence in appearance.

Physical Strength

Table 7

Analysis of Covariance

<table>
<thead>
<tr>
<th>S.S.</th>
<th>D.F.</th>
<th>M.S.</th>
<th>F</th>
<th>SIG. of F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Main Effect

The results indicate that within the subscale of physical strength, using ANCOVA, there is no significance at the .05 level. Questions on the PSPP are designed to measure perceived strength, muscle development, and confidence in situations requiring strength. Of the five subscales, this had the highest F ratio.

Physical Self-Worth

Table 8

Analysis of Covariance

<table>
<thead>
<tr>
<th>S.S.</th>
<th>D.F.</th>
<th>M.S.</th>
<th>F</th>
<th>SIG. of F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Main Effect

The results indicate that within the subscale of physical self-worth, using ANCOVA, there is no significance
at the .05 level. Questions on the PSPP in this subscale measure general feelings of happiness, satisfaction, pride, respect, and confidence in the physical self.

It is noteworthy that the significance of $F$ is .170, very close to the .05 level. Despite the subject variability and five week period, these results may be indicators that weight training can be a very powerful tool in the enhancement of overall physical self-worth.
CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

DISCUSSION

The results described lead to some interesting conclusions that support the use of weight training for a variety of reasons. The subscale means and standard deviations listed in Table 3 are an indicator of improvements in self-esteem that are evident through the use of weight training. However, by examining the statistical data provided through the use of ANCOVA by subscale more significant conclusions can be drawn. The improvements the subjects experienced within the weight training milieu seem to have been internalized by the subjects. Their perception of this success allows for the possibility of this happening elsewhere. Achieving success in one sport arena can instill confidence that a participant will use to better learn in peripheral sport endeavors.

The importance of the sports competence category showing positive changes should not be overlooked. Providing success experiences for students is an important role for all educators. Success leads to students striving
to meet more challenging goals, accelerates learning, and furthers self-esteem development. Martens’ (1987) believes that those who experience poor self-esteem should be immediately placed in a goal-setting program to provide success, therefore increasing self-esteem.

Within the subscale of physical conditioning the most noteworthy improvement was seen according to the ANCOVA. As fitness is a typical goal in the curriculum of most physical education programs, these findings are supportive of district planning. The physical education choices in both participating high schools are designed for all students. As such, the improvement in this category is particularly noteworthy for those students who may not be regular participants on high school athletic teams. It appears that they can still benefit within the physical education setting, specifically weight training.

Those who enter a beginning weight training class with some trepidation appear to exit the class with a higher level of confidence in the setting. This could instill the needed confidence necessary to pursue exercise throughout life which is an important overall goal for physical education in our schools. The weight training classes in both school districts were set up in a supportive environment with direct teacher involvement and self-monitoring on the part of the students. It seems to be
indicated that the students were able to maintain exercise throughout the five week period.

The subscale of body attractiveness did not indicate significance using ANCOVA. One can speculate as to the reasons for this lack of statistical significance. One factor does stand out and that is the limited training period available for the experimental group. The subscale focus cannot readily be improved upon in a five week weight training class for the typical subject. It would seem that most subjects in this age group would like to observe actual physical changes before dramatic improvements would be statistically available in this subscale. These would be more logically the result of a ten week or more weight training class. This would be consistent with previous research held over a longer period of time (Tucker, 1983; Jones, 1989).

Body attractiveness is an important part of global self-esteem for a majority of high school students who are seeking to become comfortable with who they are and what they look like. Therefore, it should be acknowledged within any five week weight training class by the instructor that physical changes may not occur in that time period.

The physical strength subscale did not reveal statistical significance as could be predicted in the five week duration of the investigation. Strength and muscle
development are measurable factors that comprise a large part of this subscale. It is not a measure of feeling good, but actual gain in pounds lifted or inches gained and lost. Over a five week period, these changes are not likely to be dramatic, thus resulting in the statistical results seen in Table 7. Actual gains in these areas are heavy contributors in self-esteem in a weight training program although this statistical data does not indicate the same. In combination with the other subscales, it does indicate that improvement can be made in other areas of self-esteem even without equal gain in this area. Regular weight training contributes to increase in strength and physical girth (Tucker, 1983). Subjects in this investigation were regular for three times weekly, but only for five weeks.

There could be several reasons why there is a lack of statistical significance in the subscale of physical self-worth. Subjects on both the pre and post test may have been reluctant to expose true feelings in this area as they are typically more personal than the other measured subscales. This factor of subject reliability is present throughout any profile but this would seem to be the most sensitive subscale related to this influence.

The above mentioned qualities are typically more internal and difficult to change than subscales such as sport competence and condition. They are possible to
change, but the five week weight training class may not have been long enough to facilitate change in this area. A subject's personal feeling of acceptance within the group could inhibit full development in this subscale while not being so influential in other subscales.

The results of the ANCOVA comparisons in the five subscales indicate the overall benefits of weight training should not be overlooked by professionals in the fields of education and psychology. As self-esteem plays a critical role in both education and psychology, weight training should be introduced and used in several ways. All students should have an introductory course in weight training as the results indicate a benefit even during minimal exposure.

If a student decides to explore more advanced or regular weight training, the benefits will be realized on an elevated, continuing basis. For those students in regular and/or special settings, weight training can be used as a therapeutic tool to enhance self-esteem, therefore positively affecting the student in a variety of endeavors.

The results in the various subscales used by Fox fluctuate, but all indicate some improvement as a benefit of weight training. Students will select weight training as an activity for a variety of reasons. For some, an increase in strength is important and can be realized through weight training. If this is personally important to the student,
and improvement is achieved, then self-esteem will increase accordingly. For the student interested in changing bodily appearance, weight training may also be chosen. However, it may take longer to achieve observable appearance changes than simply for a strength increase. This fact is supported by the statistical data within this investigation. The two subscales with the most improvement, physical conditioning and sport competence, indicate on some operating level that high school students associate weight training with improved athletic performance. While this fact is certainly true, the benefits are much more diverse. Perhaps as these students mature, their attitude for weight training may change and the results could be remarkably different. While the mean scores on the Perceived Importance Profile do not vary tremendously, they do indicate that high school students place value on conditioning and sport competence.

The results from this investigation indicate the importance that weight training can have in the development of self-esteem. Therefore, this supports the introduction of weight training as an important part of high school physical education curriculum. Not only does weight training provide for improvement physically, but also enhances the self-esteem of those participating. Skills and activity learned in the gymnasium can be used throughout the
high school student's endeavors whether they be academic, social, or physical.

CONCLUSIONS

The results of this investigation indicate that weight training has a statistically significant effect on the development of physical self-esteem in the subscales of sport importance and physical conditioning. There may be improvement in the areas of strength, body attractiveness, and overall physical self-worth, although not statistically significant.
RECOMMENDATIONS

After examining the results of this investigation, the following recommendations are made for further research with this age group:

(1) Further investigations with a larger subject pool thus allowing the use of multivariate as opposed to univariate statistics

(2) Further investigations lasting eight or more weeks

(3) Investigations that use an intramural, year long weight training group as an experimental group.

(4) Physical performance measurements before and after the experimental time period.
APPENDICES
APPENDIX A

HUMAN SUBJECTS REVIEW FORM

AND

APPROVAL
Project Title - The Effects of Weight Training on Physical Self-Worth.

Researcher - Jeffrey Carpenter

Project Information

1. The project is designed to measure the effects of weight training on the self-esteem of high school students (male and female) in grades 9-12. Fox’ Physical Self-Perception and Perceived Importance Profiles (attached) will be administered by the researcher to students in regularly scheduled physical education weight training classes. Using Cronbach’s Alpha, the PSPP internal consistency reliability ranged from .81 to .92. Test-retest reliability correlation coefficients range from .74 to .89 over a two to three week period. Scores have also been consistent between samples. The profiles will be administered on the first and last day of the unit. The profiles will also be administered to a control group during the same time period who are not participating in weight training. The human subjects will be notified the project involves investigating the benefits of weight training.

2. The subjects will be high school students of each gender in grades 9-12. They will be drawn from regularly scheduled physical education classes that they have selected (weight training). There will be approximately 120 students from three suburban school districts counting control and experimental groups.
3. The subjects will not be renumerated in any way. They will be drawn from regularly scheduled classes.

4. There will be no research assistants.

5. There will be no funding.

6. The expected starting date to administer the profiles will be March 11, 1991 and end April 15, 1991.

7. Attached, please find a copy of the following
   - statement of consent
   - Fox’ Physical Self-Perception Profile
   - Fox’ Perceived Importance Profile

8. Subjects will be assigned letters corresponding to their profile and name that will be known only to the researcher. These letters will be destroyed at the completion of the research project. They will be kept in a locked file cabinet at the researcher’s home.

9. Subjects will be informed verbally by the researcher of all basic elements of informed consent during their first class meeting. They will also be required to read and sign a consent form. As they will be minors, their parent or guardian will also be required to sign the consent form.

10. The subjects will be drawn from the following high schools with responsible person listed. The responsible person will provide institutional consent in writing before tests are administered.
- Churchville-Chili Central School
  Richard Amundson
  Department Head, Physical Education
- Brighton High School
  Richard Kaplun
  Assistant Athletic Director
- Rush-Henrietta High School
  Richard Young
  Department Head, Physical Education

11. The subjects will not come into contact with any mechanical, electrical, electronic or other equipment.
4/5/91

To:                Jeff Carpenter/ care of Dr. Dan Smith
                   Investigator

From:              Dr. Robert J. McLean
                   Chair, Institutional Review Board

Re:                Project IRB.  91-5

Your proposal entitled ____________________
                            Physical Self-Worth"

The Effect's of Weight Training on

has been reviewed by the IRB. Accordingly, you may proceed
with the work as proposed and approved.

Please contact the Chair, IRB immediately if:

- the project changes substantially,
- a subject is injured,
- the level of risk increases.

Also, the following reports are required as noted on
the attached() below:

Please submit a final report to Dr. McLean, Chair of the IRB
Committee after the project is completed. Thank you.
APPENDIX B

LETTER TO PARENTS
AND CONSENT FORM
March 11, 1991

Dear Parent:

Your child is being asked to participate in a research project being conducted in several physical education classes in his/her high school. All students involved will not be asked to commit any more of their time than that expected in the regular class period. As part of the project, each student will complete a series of questions pertaining to their interests and physical abilities. This will be done at the beginning and end of the five-week unit.

The project has been approved by your high school’s Department of Physical Education and also by the Department of Physical Education and Sport at SUNY College at Brockport. Upon completion of the project, a copy of the results will be made available to your school district.

In order for your child to participate in the project, you must sign the enclosed consent form and have your child return it to the class instructor.

Thank you for your help and cooperation.

Sincerely,

Jeffrey Carpenter
STATEMENT OF CONSENT

You are being asked to make a decision whether or not to participate in a research project. The information listed below is provided to help you make a decision.

1. The study will take place during class time for the five week class period. You will be asked to complete a profile, which should take five minutes in your first and last classes.

2. At no time during the study will you be at any additional risk.

3. As a participant, you will not receive compensation of any type.

4. Your performance as part of this study will not affect your class grade in any way.

5. If you wish to withdraw from the study during the five week period, you have the right to do so.

6. All subject information will be kept confidential.

This study looks at the various benefits of weight training. If you wish to participate and you agree with the statement below, please sign in the space provided and have your parent/guardian sign in the second space. Remember, you may change your mind at any point and withdraw from the study.

I, __________________________, having read (or had read to me) and understand the information provided in this form, agree to participate as a subject in this project.

_______________________________  __________________________
Signature of Subject Date

_______________________________  __________________________
Signature of Parent/Guardian Date
APPENDIX C

HIGH SCHOOL DEPARTMENTAL APPROVALS
The department of health and physical education at Churchville-Chili High School has given consent to Jeffrey Carpenter to conduct an investigation examining the effect of weight training on self-esteem. This consent gives permission to give self-esteem profiles in health and physical education classes. Individual students must have the consent of their parent or guardian before participatory results can be used. The results of individual profile scores will be kept confidential by Mr. Carpenter.

[Signature]
Director of Physical Education

[Signature]
Jeffrey Carpenter

Date: 4/11/91

Date: 4/11/91
The department of health and physical education at Rush-Henrietta High School has given consent to Jeffrey Carpenter to conduct an investigation examining the effect of weight training on self-esteem. This consent gives permission to give self-esteem profiles in health and physical education classes. Individual students must have the consent of their parent or guardian before participatory results can be used. The results of individual profile scores will be kept confidential by Mr. Carpenter.

Richard Young
Director of Physical Education

Jeffrey Carpenter

Date

5/12/91

Date

4-12-91
APPENDIX D

SUBJECT EXPLANATION AND INSTRUCTIONS
SUBJECT EXPLANATION AND INSTRUCTION

My name is Jeff Carpenter and I am a graduate student in physical education. I am working on my masters thesis and would like to use this class as part of my subject pool.

You will be participating in a scientific study examining different aspects of physical education and education in general. You are a volunteer subject and can withdraw from the study at any time over the next five weeks. Your performance in this study will not in any way affect your class grade. The data collected on you as an individual will be kept strictly confidential.

The consent form that you and a parent or guardian will sign states that you understand that your participation is on a voluntary basis and that you can withdraw from the study at any time. Unfortunately, you will not be compensated in any way for your participation other than having the results made available to the department upon completion.

It is important that you strive to succeed in this class as you would any other in your daily schedule for the results of the investigation to be valid. You should attempt to answer all questions as honestly as possible when the survey is given to you today and again in five weeks.
Today, for the first day of the study, you will be given a set of questions to answer. Please put your name on the front page of the survey. As I mentioned, the results will be confidential and your name encoded after the study is completed. After finishing the questions, you will be asked to perform a series of weight training exercises and record the results on the form. Once again, be sure to place your name on the page and it too will be encoded.

I would like to thank you for your cooperation in this investigation.
APPENDIX E

THE PHYSICAL SELF-PERCEPTION PROFILE
THE PHYSICAL SELF PERCEPTION PROFILE (PSPP)

WHAT AM I LIKE?

These are statements which allow people to describe themselves. There are no right or wrong answers since people differ a lot.

First, decide which one of the two statements best describes you.

Then, go to that side of the statement and check if it is just "sort of true" or "really true" FOR YOU.

<table>
<thead>
<tr>
<th>Really True for Me</th>
<th>Sort of True for Me</th>
<th>EXAMPLE</th>
<th>Sort of True for Me</th>
<th>Really True for Me</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Some people are very competitive</td>
<td>Others are not quite so competitive</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BUT</td>
<td></td>
<td>X:</td>
</tr>
</tbody>
</table>

REMEMBER to check only ONE of the four boxes

1. □ □ □ Some people feel that they are not very good when it comes to playing sports
   □ □ □ Others feel that they are really good at just about every sport

2. □ □ □ Some people are not very confident about their level of physical conditioning and fitness
   □ □ □ Others always feel confident that they maintain excellent conditioning and fitness

3. □ □ □ Some people feel that compared to most, they have an attractive body
   □ □ □ Others feel that compared to most, their body is not quite so attractive

4. □ □ □ Some people feel that they are physically stronger than most people of their sex
   □ □ □ Others feel that they lack physical strength compared to most others of their sex

5. □ □ □ Some people feel extremely proud of who they are and what they can do physically
   □ □ □ Others are sometimes not quite so proud of who they are physically

6. □ □ □ Some people feel that they are among the best when it comes to athletic ability
   □ □ □ Others feel that they are not among the most able when it comes to athletics

60
<table>
<thead>
<tr>
<th>Really True for Me</th>
<th>Sort of True for Me</th>
<th>Really True for Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Some people make certain they take part in some form of regular vigorous physical exercise</td>
<td>Others don’t often manage to keep up regular vigorous physical exercise</td>
<td></td>
</tr>
<tr>
<td>8. Some people feel that they have difficulty maintaining an attractive body</td>
<td>Others feel that they are easily able to keep their bodies looking attractive</td>
<td></td>
</tr>
<tr>
<td>9. Some people feel that their muscles are much stronger than most others of their sex</td>
<td>Others feel that on the whole their muscles are not quite so strong as most others of their sex</td>
<td></td>
</tr>
<tr>
<td>10. Some people are sometimes not so happy with the way they are or what they can do physically</td>
<td>Others always feel happy about the kind of person they are physically</td>
<td></td>
</tr>
<tr>
<td>11. Some people are not quite so confident when it comes to taking part in sports activities</td>
<td>Others are among the most confident when it comes to taking part in sports activities</td>
<td></td>
</tr>
<tr>
<td>12. Some people do not usually have a high level of stamina and fitness</td>
<td>Others always maintain a high level of stamina and fitness</td>
<td></td>
</tr>
<tr>
<td>13. Some people feel embarrassed by their bodies when it comes to wearing few clothes</td>
<td>Others do not feel embarrassed by their bodies when it comes to wearing few clothes</td>
<td></td>
</tr>
<tr>
<td>14. When it comes to situations requiring strength some people are one of the first to step forward</td>
<td>When it comes to situations requiring strength some people are one of the last to step forward</td>
<td></td>
</tr>
<tr>
<td>15. When it comes to the physical side of themselves some people do not feel very confident</td>
<td>Others seem to have a real sense of confidence in the physical side of themselves</td>
<td></td>
</tr>
<tr>
<td>16. Some people feel that they are always one of the best when it comes to joining in sports activities</td>
<td>Others feel that they are not one of the best when it comes to joining in sports activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Really Sort of True True for Me for Me</td>
<td>Sort of Really True True for Me for Me</td>
</tr>
<tr>
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<td>----------------------------------------</td>
</tr>
<tr>
<td>17.</td>
<td>Some people tend to feel a little uneasy in fitness and exercise settings</td>
<td>Others feel confident and at ease at all times in fitness and exercise settings</td>
</tr>
<tr>
<td>18.</td>
<td>Some people feel that they are often admired because their physique or figure is considered attractive</td>
<td>Others rarely feel that they receive admiration BUT for the way their body looks</td>
</tr>
<tr>
<td>19.</td>
<td>Some people tend to lack confidence when it comes to their physical strength</td>
<td>Others are extremely confident when it comes to their physical strength</td>
</tr>
<tr>
<td>20.</td>
<td>Some people always have a really positive feeling about the physical side of themselves</td>
<td>Others sometimes do not feel positive about the physical side of themselves</td>
</tr>
<tr>
<td>21.</td>
<td>Some people are sometimes a little slower than most when it comes to learning new skills in a sports situation</td>
<td>Others have always seemed to be among the quickest when it comes to learning new sports skills</td>
</tr>
<tr>
<td>22.</td>
<td>Some people feel extremely confident about their ability to maintain regular exercise and physical condition</td>
<td>Others don’t feel quite so confident about their ability to maintain regular exercise and physical condition</td>
</tr>
<tr>
<td>23.</td>
<td>Some people feel that compared to most, their bodies do not look in the best of shape</td>
<td>Others feel that compared to most their bodies always look in excellent physical shape</td>
</tr>
<tr>
<td>24.</td>
<td>Some people feel that they are very strong and have well developed muscles compared to most people</td>
<td>Others feel that they are not so strong and their muscles are not very well developed</td>
</tr>
<tr>
<td>25.</td>
<td>Some people wish that they could have more respect for their physical selves</td>
<td>Others always have great respect for their physical selves</td>
</tr>
<tr>
<td>26.</td>
<td>Given the chance, some people are always one of the first to join in sports activities</td>
<td>Other people sometimes hold back and are not usually among the first to join in sports</td>
</tr>
<tr>
<td>Really True</td>
<td>Sort of True</td>
<td>Really True</td>
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<td>for Me</td>
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</tbody>
</table>

27. Some people feel that compared to most they always maintain a high level of physical conditioning. **BUT** Others feel that compared to most their level of physical conditioning is not usually so high.

28. Some people are extremely confident about the appearance of their body. **BUT** Others are a little self-conscious about the appearance of their bodies.

29. Some people feel that they are not as good as most at dealing with situations requiring physical strength. **BUT** Others feel that they are among the best at dealing with situations which require physical strength.

30. Some people feel extremely satisfied with the kind of person they are physically. **BUT** Others sometimes feel a little dissatisfied with their physical selves.
APPENDIX F

THE PERCEIVED IMPORTANCE PROFILE
### HOW IMPORTANT ARE THINGS TO YOU?

<table>
<thead>
<tr>
<th></th>
<th>Really True for Me</th>
<th>Sort of True for Me</th>
<th>Really True for Me</th>
<th>Sort of True for Me</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td>BUT</td>
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</tr>
<tr>
<td>Some people feel that being good at sports is vitally important to them</td>
<td></td>
<td>Others feel that being good at sports is not so important to them</td>
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<td>2.</td>
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<td>BUT</td>
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<tr>
<td>Some people do not feel that maintaining a high level of physical conditioning is very important to them</td>
<td></td>
<td>Others feel that maintaining a high level of physical conditioning is extremely important to them</td>
<td></td>
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<td>3.</td>
<td></td>
<td></td>
<td>BUT</td>
<td></td>
</tr>
<tr>
<td>Some people believe that having an attractive physique or figure is vitally important to them</td>
<td></td>
<td>Others believe that having an attractive physique or figure is not all that important in their lives</td>
<td></td>
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<tr>
<td>4.</td>
<td></td>
<td></td>
<td>BUT</td>
<td></td>
</tr>
<tr>
<td>Some people believe that being physically strong is not so important to them</td>
<td></td>
<td>Others feel that it is extremely important to them to be physically strong</td>
<td></td>
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<tr>
<td>5.</td>
<td></td>
<td></td>
<td>BUT</td>
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</tr>
<tr>
<td>Some people feel that having very good sports ability and skill is not so important to them</td>
<td></td>
<td>Others feel that having a high level of sports ability is really important to them</td>
<td></td>
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<td>6.</td>
<td></td>
<td></td>
<td>BUT</td>
<td></td>
</tr>
<tr>
<td>Some people feel that maintaining regular vigorous exercise is vitally important to them</td>
<td></td>
<td>Others feel that keeping up regular vigorous exercise is not of prime importance to them</td>
<td></td>
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<tr>
<td>7.</td>
<td></td>
<td></td>
<td>BUT</td>
<td></td>
</tr>
<tr>
<td>Some people do not feel it so important to them to spend a lot of time and effort maintaining an attractive body</td>
<td></td>
<td>Others think that it is vitally important to spend time and effort maintaining an attractive body</td>
<td></td>
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<tr>
<td>8.</td>
<td></td>
<td></td>
<td>BUT</td>
<td></td>
</tr>
<tr>
<td>Some people feel that being strong and having well developed/toned muscles is vitally important to them</td>
<td></td>
<td>Others feel that being strong and having well developed/toned muscles is not so important to them</td>
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65
APPENDIX G

PSPP & PIP SCORESHEET
PSPP and PIP Scoring Sheet

Name ___________ Gender __________ Group _______ ID ___________  

PSPP Item scores (r = reverse scoring)

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Subscale Totals

PIP Item scores (r = reverse scoring)

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<td>2</td>
<td>3r</td>
<td>4</td>
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<tr>
<td>5</td>
<td>6r</td>
<td>7</td>
<td>8r</td>
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<tbody>
<tr>
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<td>Cond</td>
<td>Body</td>
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<tr>
<td>Imp</td>
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Subscale Totals

Perception Profile

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<tr>
<td>PSPP</td>
<td>PIP</td>
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</tr>
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</tbody>
</table>
APPENDIX H

SUBSCALE MEANS GRAPH
SUBSCALE MEANS

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PRETEST

Experimental Group

Control Group

POSTTEST
REFERENCES


VITA

Jeff Carpenter is a candidate for the Master of Science in Education with a specialization in physical education at SUNY College at Brockport. He graduated in 1974 with a Bachelor of Science with a dual major of History and Recreation. From 1978 to 1981, he completed a New York state teacher certification program in physical education at Brockport.

Jeff has worked at Crestwood Children’s Center, an agency for emotionally disturbed youth and their families, located in Rochester, New York. He has served as a physical education teacher, day treatment supervisor, summer camp director, and recreation therapy coordinator while employed at the center. He has given inservice training on the topic of self-esteem at Crestwood and lectured on weight training for the emotionally disturbed at New York State’s Office of Mental Health annual RTF Conference in 1989.

In addition, he is a freshman soccer coach at Brighton High School and freshman basketball coach at Rush-Henrietta High School.