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ON THE SELF-CONCEPT OF PHYSICALLY HANDICAPPED
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THE UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE

THE EFFECTS OF INDIVIDUAL AND GROUP COUNSELING
ON THE SELF-CONCEPT OF PHYSICALLY
HANDICAPPED COLLEGE STUDENTS

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
in partial fulfillment of the requirements for the
degree of
DOCTOR OF EDUCATION

BY
LYNDALL MEDFORD ROBERTSON
Norman, Oklahoma

1974

THE EFFECTS OF INDIVIDUAL AND GROUP COUNSELING
ON THE SELF-CONCEPT OF PHYSICALLY
HANDICAPPED COLLEGE STUDENTS

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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

In recent years, educators have become keenly aware of the need to make provision for educating the physically handicapped student. Such awareness can be attributed in part to our increasing realization that the physically handicapped in our society can make a significant contribution to the American way of life. For the most part, however, this increased awareness has been the result of Federal legislation. The crux of this legislation is as follows: Those educational institutions which consistently receive federal monies as part of their budget must make their physical facilities accessible to the physically handicapped student in order for them to participate in all educational programs or risk the chance of losing their federal monies. This "accessibility" law has been based on the assumption that the physically handicapped students are equal in every way to the non-physically handicapped student except for their physical limitations. Research has proven this to be a valid assumption for the most part. It has consistently been shown that the physically handicapped and the non-physically handicapped students are more alike than different. However, these same research studies have shown that the differences between

physically handicapped and non-physically handicapped students go far beyond their physical limitations. Significant differences have been reported between their attitudes (Barker, 1953), personalities (Land and Vineberg, 1965) vocational aspirations (Willis, 1970), social relationships (Wright, 1960) and self concepts (Wylie, 1961; Hurlock, 1955). The last of these differences holds important ramifications for education since the students' self concept is closely associated with their academic achievement, (Purkey, 1968). It would follow then that differences between the physically handicapped and non-physically handicapped students' self concepts would necessitate a difference in teaching techniques and/or curricula. At the same time, the research efforts conducted with physically handicapped students have not been at the college level. Before the results of previous studies are implemented into educational programs at the college level, further research is needed on physically handicapped college students. Such research was the essence of the present study.

Statement of the Problem

The problem investigated in the present study was to determine the effects of individual and group counseling sessions on the self concepts of physically handicapped college students. Stated more specifically, the purpose of the proposed study was to determine the effects of individual and group-counseling sessions on nine (9) self-concept

scores (as measured by the Tennessee Self-Concept Scale) of physically handicapped students enrolled at East Central State College (ECSC), Ada, Oklahoma, during an eight-week period of the 1973-74 academic year.

In order to investigate the problem stated in the study it was necessary to make comparisons of pretest-posttest self-concept change scores of three groups of physically handicapped students; (1) students who participated in individualized counseling sessions, (2) students who participated in group counseling sessions, and (3) students who did not participated in either the individual or group counseling sessions. The primary purpose of these comparisons was to determine whether the individual-counseling or group-counseling groups of physically handicapped students had experienced greater pretest-posttest self-concept changes than the pretest-posttest self-concept changes experienced by the group of physically handicapped students who receive no individual or group counseling. Comparisons were made on the three groups' pretest-posttest change scores on nine (9) dimensions (self-concept scales) of the Tennessee Self-Concept Scale.

Additional comparisons were made between each group's pretest and posttest self-concept scores. These comparisons were made to determine the amount of gain experienced by each group as a result of their participating in the experiment.

Hypotheses Tested in the Study

For the purpose of the present study, the following null hypotheses were tested:

- Ho₁ There are no statistically significant differences between the pretest-posttest self-concept change scores (taken from the Tennessee Self-Concept Scale) of those physically handicapped college students who attended individual counseling sessions and the pretest-posttest self-concept changes scores (taken from the Tennessee Self-Concept Scale) of those physically handicapped college students who did not attend individual counseling sessions.
- Ho₂ There are no statistically significant differences between the pretest-posttest self-concept change scores (taken from the Tennessee Self-Concept Scale) of those physically handicapped college students who attended group counseling sessions and the pretest-posttest self-concept change scores (taken from the Tennessee Self-Concept Scale) of those physically handicapped college students who did not attend the group counseling sessions.
- Ho₃ There are no statistically significant differences between the pretest-posttest self-concept change scores (taken from the Tennessee Self-Concept Scale) of those physically handicapped college students who attended individual counseling sessions and the pretest-posttest self-concept change scores (taken from the Tennessee Self-Concept Scale) of those physically handicapped college students who attended group counseling sessions.
- Ho₄ There are no statistically significant differences between the pretest self-concept scores (taken from the Tennessee Self-Concept Scale) of physically handicapped college students who attended individual counseling sessions and the

posttest self-concept scores (taken from the Tennessee Self-Concept Scale) of the same participants.

Ho₅ There are no statistically significant differences between the pretest self-concept scores (taken from the Tennessee Self-Concept Scale) of physically handicapped college students who attended group counseling sessions and the posttest self-concept scores (taken from the Tennessee Self-Concept Scale) of the same participants.

Ho₆ There are no statistically significant differences between the pretest self-concept scores (taken from the Tennessee Self-Concept Scale) of physically handicapped college students who did not attend the individual and group counseling sessions and the posttest self-concept scores (taken from the Tennessee Self-Concept Scale) of the same participants.

Definition of Terms

For the purpose of the proposed study, the following definitions and explanations are presented:

1. Physically Handicapped Student: East Central State College students who are enrolled for the 1973-74 academic year and who have been determined to be "physically disabled" by the Oklahoma State Department of Institutions Vocational and Rehabilitative Services Division.
2. Group-Counseling Group: Those physically handicapped students who chose to attend weekly sessions of group counseling during the eight weeks of the experiment.
3. No-Counseling Group: Those physically handicapped students who did not attend either the individual or group counseling sessions during the eight weeks of the experiment.

4. Individual-Counseling Group: Those physically handicapped students who chose to attend weekly sessions of individual (one-to-one) counseling during the eight weeks of the experiment.
5. Experimental Groups: Physically handicapped students who attended either individual or group counseling sessions each week during the eight-week experiment.
6. Control Group: Physically handicapped students who did not attend either individual or group counseling sessions during the eight-week experiment.
7. Self-Concept Score(s): Subtest and/or total scores taken from the Tennessee Self-Concept Scale (TSCS).
8. Pretest Score(s): Scores taken from the first administration of the Tennessee Self-Concept Scale.
9. Posttest Score(s): Scores taken from the second administration of the Tennessee Self-Concept Scale.
10. Pretest-Posttest Change Score: The arithmetic differences between pretest scores and posttest scores.

Limitations of the Study

Certain limitations were placed on the present study.

The most important of these limitations were as follows:

- (1) The population of physically handicapped college students was limited to those physically handicapped college students who were enrolled at East Central State College, Ada, Oklahoma, during the spring semester for the 1973-74 academic year and who were enrolled in PROJECT GOALS.

- (2) The self-concept data collected were limited to nine (9) self-concept dimensions measured by the Tennessee Self-Concept Scale.

CHAPTER II

REVIEW OF RELATED LITERATURE

One of the major problems faced by today's educators is the extension of academic programs to include the physically handicapped student.

Gust (1969) stated:

Of the more than 2,000 colleges and universities in the United States there were less than 300 to which the physically handicapped could apply, and barely more than a handful of these meet the minimum requirements necessary to accommodate handicapped students (p. 3).

Condon (1957) found in a national survey that less than 20 percent of the colleges and universities surveyed had an organized program for the physically handicapped student. More than 50 percent of these colleges had no such program but expressed interest in furthering the education of the disabled student. Condon concluded that it seemed wise to encourage the physically handicapped student to work and study in the environment of the regular college student and that with the cooperative efforts of the colleges and state agencies the physically handicapped student with good mental ability will eventually be enabled to take his rightful place in our competitive society.

With the passage of Public Law 90-480, physical access to new or extensively remodeled public buildings was assured for the handicapped student. Educators are now becoming aware of the fact that the handicapped student encounters unique problems in the learning environment. He experiences personal needs that cannot be met by the mere removal of architectural barriers. These needs must be met if the fullest growth and development of human potential is to be realized.

In an effort to meet some of these needs, innovative programs have been developed and implemented. Most of these programs have been directed toward the students' adjustment and maintenance of a certain grade-point average.

Individual and group counseling techniques have been successfully used by educators in an effort to raise the grade-point average and increase the retention rate of college freshmen (Shepherd, 1965), low-ability college students (Hendrex, 1965), veterans (Hickerson, 1948), under-achieving college students (Dickenson and Truax, 1966), and freshmen who scored low on entrance examinations.

However, no significant differences were found between the experimental groups (those who received counseling) and the control groups (those who did not receive counseling) when individual and group counseling techniques were employed by Hackett (1955) with students on academic probation, by Gilbreath (1967) with male college under-achievers, by

Holaday (1929) and Freeman and Jones (1933) with students who scored low on entrance examinations.

Improvement of grade-point averages (GPA) and self-actualization scores was reported by Lieb (1967) for both the experimental group (14 members who received group counseling) and the control group (14 members who received no counseling). Negative results were shown by Winborn (1962) when he used group counseling (short term) on potentially superior but under-achieving college students in an attempt to increase their grade-point averages. He found the control group of 67 students (who received no counseling) made significantly higher grade-point averages than the 68 experimental group students (who received regular counseling). Winborn concluded that short term counseling had a negative effect on the grade-point averages of the experimental group.

Since the group counseling and individual counseling techniques yielded conflicting results and none of these studies has been conducted with the physically handicapped as subjects, one cannot be sure of knowing that these techniques can be generalized to the physically handicapped college students.

Educating the Physically Handicapped Student

In 1920 the Federal Vocational Rehabilitation Act was passed by Congress. This legislation provided for the vocational training and rehabilitation of persons disabled in

industry. Programs were oriented toward returning the victims to employment. In 1925 the Oklahoma Vocational Rehabilitation Program was initiated by passage of State Legislation and placed under the State Board of Vocational Education. With the passage of these two acts financial support was provided for educating physically handicapped persons.

Almost a half century later, in 1968, President Johnson signed into law legislation that requires that all federal structures as well as those receiving federal funds be made accessible to the physically handicapped. This legislation will in time remove the insurmountable architectural barriers that have prevented many physically handicapped people capable of obtaining an education and make possible the extension of academic programs to include the handicapped.

Gust (1969) believes that the extension of the programs is hampered by architectural, attitudinal, and administrative barriers related to the handicapped college student. Until now, for the most part, architects have not made provisions for the 10 percent of our population who have been designated as handicapped. Buildings are actually designed for the 90 percent of the population considered to be normal. Academic programs that require art for the blind, speech for the deaf, physical activity courses for the orthopedically disabled are designed more for the physically able student than for the physically disabled student.

Faculty members who resist learning aids such as Braille writers and tape recorders are not oriented toward the physically handicapped student. Gust concludes that unless the campus attitude is one of genuine healthy concern for the future of handicapped young adults, architectural and administrative changes will not come.

In a survey of municipal colleges in New York City, Condon and Lerner (1956) found that the physically handicapped student was expected to pursue the same courses and meet (with minimal adjustment) the same requirements for his degree as non-handicapped students. With the exception of some physical adjustments (early registration, special transportation, and special scheduling to allow travel time to classes), no allowance was made for these students. Condon and Lerner concluded that the colleges are committed to the belief that their present programs are the best way to help physically handicapped students toward their vocational objectives as well as assisting them in developing into well-rounded human beings.

Social Adjustment Problems of the Physically Handicapped

It is quite difficult for the physically handicapped student to gain social acceptance. Social adjustment problems can occur either in the home, in the community, in the school, or on the job. The lack of acceptance by others can seriously affect the self concept.

The self concept is defined according to the theoretical orientation of the various psychologists studying it.

Rogers (1951) states that:

. . . self concept or self-structure may be thought of as an organized configuration of the perceptions of the self which are admissible to awareness. It is composed of such elements as the perception of one's characteristics and abilities, the percepts and concepts of the self in relation to others and to the environment (p. 64).

Sullivan (1953) stresses the role of significant others in the formation of the self concept. He begins by placing an emphasis on the child's mother, but the theory is broad enough to expand to other significant people with whom the child comes into contact. The self concept is really determined by the way in which the child perceives certain crucial experiences. The significant socializing forces are the family, family constellation, peer group, and all of the significant others. Sullivan believes that regardless of the attitudes that the child encounters with these significant others, the important consideration is how the child perceives the attitudes of others, rather than the attitude itself.

Cooley (1956) interpreted the self as involving all that is included in the feeling of "self." A person's idea of self depends on the way others treat him. Cooley's famous theory of the "looking glass self" succinctly describes how the self develops out of social interaction. Cooley believes that the child gradually acquires the ability to

imagine how he appears to another person, how the other person judges him, and to have a resulting feeling such as pride or mortification. Thus for Cooley an individual's self-estimate depend on interaction with others, and this interaction influences the behavior of that individual.

G. H. Mead (1934) discussed the process by which self concepts develop. He is an interactionist. He believes that self awareness develops out of social interaction,

The self is something which has a development; it is not initially there at birth, but it arises in the process of social experience and activity, that is, it develops in the given individual as a result of his relations to that process as a whole and to other individuals within that process (p. 161).

Mead also indicated that the individual experiences himself only indirectly, from the particular standpoint of other individuals of the same social group or from the generalized viewpoint of society to which he belongs.

These definitions suggest that an individual forms impressions of himself as the result of perceptual feedback from others, and that such feedback is accompanied by evaluative information about the self. That the self concept is a social looking glass and that ideas and feelings about the self emerge largely as a result of interaction with others expresses the belief of most psychologists.

Research tends to support the position that self concept plays a significant role in determining behavior. Combs (1962) points out that the kind of self concept an individual possesses determines, in a large measure, whether

he is maladjusted or well adjusted. He believes that the people who see themselves as liked, wanted, acceptable, worthy, and able, get along well in our culture and make important contributions both to themselves and to the societies in which they live. The people who see themselves as unliked, unwanted, unworthy, unimportant, or unable, are the maladjusted, desperate, defeated ones who must be sheltered and protected from life. Such findings have been established by research with subjects of various ages. (Reeder, 1965; Williams and Cole, 1968).

Ausubel (1954) indicated that development of the ego comes from the continual interaction of social experience and the already existent personality structure, mediated by perceptual responses. He depicts the self early in life as localized or focused in the body. Organic sensations, mediate the meaning of the self for the infant or child. Personal experiences of childhood, adolescence, and adulthood shape the self. The ego is an expansion of the self and expresses the aspirations of the individual.

The Adlerian term covering the same area as that of ego psychology or self concept is life style. Through interacting with members of his own family, the child is confronted with carrying out the tasks of life and learning effective methods of coping with them. Adler believes that life style does not come out of any specific experience, but instead, from the continual repetition of the approach used

to cope with the tasks of life. The child's perception determines his behavior more than the so-called reality of the situation. Adler (1969) stated:

in the case of children born with imperfect organs it is the psychological situation which is all important. Because these children are placed in a more difficult situation they show marked indications of an exaggerated feeling of inferiority. At the time their adult life style is being formed they are already more interested in themselves than in others, and they tend to continue that way later on in life . . . these children grow up handicapped and they constantly fear attacks in as much as they have grown up in an environment in which they never learned independence (pp. 6-7).

Adler believes the deformed body which makes life's tasks more difficult to accomplish causes feelings of inferiority and neurosis to develop within the individual.

Barker (1953) believes that the child feels himself inferior only if he is not loved or when love is withdrawn. He states further that organic inferiority does not have the etiological significance for the development of neurosis but because of the frequent tendency to overprotect or to reject crippled children, inferiority feelings are common. For Barker the deformed body in itself does not constitute a cause for neurosis and feelings of inferiority to develop within the individual but the felt rejection of significant others causes these personality problems.

It seems that inferiority is developed as a part of the self concept as the child becomes aware of others' reactions to him. Self awareness develops out of interaction with others and is not present at birth. It arises as a result

of the individual's relationship with other individuals, and it is learned from the treatment received by the child from those who surround him in the process of his growing up. The child's most important early perception of his environment is dependent upon the mother-father-home atmosphere.

Erikson (1960) stated that the infant's sense of well being in a world that is pleased with his presence is dependent on the quality of the mother's presence. The first psychological task for the infant is the development of a basic sense of trust in himself and his environment. This trust is sometimes difficult for the physically handicapped child to develop because of the reactions to him of significant others. Zuk (1962) found that the usual emotional states and feelings experienced by other family members when they become aware of the fact that a child is mentally or physically handicapped are disappointment, anger, and guilt. Zuk believes that disappointment arises from the awareness that the child will not be able to fulfill hopes and expectations which have been ascribed to him even before he is born. Parents normally direct anger at the child since he is the obvious source of their frustration. Consequently, guilt feelings arise from the parents' need to deny that they are angry with their child.

Cutter (1959) believes that the child's most important early perception of his environment is dependent upon the

home atmosphere. He states further:

A generalization that can be made is that parents intuitively sense that their child is mentally or physically different or severely emotionally disturbed. They develop intense feelings of failure and personal inadequacy. The presence of the child in the home furthers these feelings. The parents react in accordance with their individual and collective security and maturity. Mature parents, though hurt, are able adequately to accept the child and meet his physical and emotional needs. Less mature parents, or parents who have conflicts in their relationship, react quite differently. The parent experiences guilt, anxiety, and confusion. This blocks him from giving freely of himself to the child. The child in turn reacts as if he interprets as rejection the well-intentioned but inadequate supply of love, acceptance and understanding . . . The most important hurt is that of felt-rejection by the parents. This rejection is not conscious or purposeful, but is based on parental feelings evoked by having produced a child who, in their eyes is not perfect or the image of their expectations (p. 4-5).

Miller (1958), Haring (1959), and Hall (1963) conducted studies with cerebral palsied children. The crux of their findings were: that disturbed parent-child relationships tend to play a more significant role in personality development than the severity of the disability; that since the parents' attitudes and reactions govern the way they relate, handle, discipline, and train their children, they sometimes react with emotional lavishness one day, and withhold favors the next, thus causing a confused self concept for the child; and, that the family into which a cerebral palsied child is born is high risk in terms of potential family breakdown. Hall concluded that the families that were faced with a multiplicity of problems and harsh realities, ordinarily experience feelings of guilt, uncertainty, hopelessness,

desperation and frustration. In an investigation of parental attitudes toward handicapped children, Coughlin (1941) selected fifty-one children from the Detroit Orthopaedic Clinic and studied their parents' responses to them. He found that the feelings could be placed in four broad categories. A relatively small number of parents had sufficient intellectual insight and were well adjusted personally and they were able, while fully realizing the implications of the problem, to accept it and turn their attention and energies toward finding means of compensating for it. A second group had generally positive attitude toward the child on an emotional level, but they had very little or no intellectual insight. Another group had an adequate intellectual understanding of the child's problem but were emotionally unable to provide him with complete acceptance. The last group were emotionally and intellectually unable to accept the child. The fears of this group included fear that the child might get worse, fear of what society would think, and fear of inability to be economically independent.

Coughlin believes that the small percentage of parents who can accept the child and plan a helping program for him may be able to aid him in his development of a positive self concept that will enable him to gain social acceptance. The majority of parents cannot accept the handicapped child and reflect positive feelings to him that will enable him to develop a feeling toward himself of positive acceptance.

Since a child's idea of self depends on the reactions that he receives from significant others, these findings tend to support the idea that a disabled child will find it difficult to develop a positive self concept. As he faces rejection, anxiety, guilt, uncertainty, frustration, and hopelessness from his parents in his earliest contacts with people in his home environment, the handicapped child will tend to develop negative feelings toward himself.

An individual begins his association with peer groups through school and community activities as he matures and his perceptual field enlarges to include significant others. Sometimes it is difficult for the handicapped person to gain acceptance from his peer group. In a study involving 230 non-disabled 2 to 6 year-old children, Jones and Sisk (1967) found that children as young as 4 or 5 years rejected the drawing of an orthopedically disabled child more frequently than that of the non-disabled child on the question, "Would you play with him?" These children frequently qualified their responses by indicating the conditions under which they believed the disabled would be acceptable. Four was found to be the age at which perceptions of the limitations imposed by orthopedic disability first appeared with consistency.

In an investigation of the uniform reactions to physical disability in our culture, Richardson, Goodman, Hastorf and Dornbusch (1961) found that 10 and 11 year-old children

with and without physical handicaps all rank the able-bodied child as first choice. This study is concluded with:

. . .there is considerable evidence in our culture of a deprecatory evaluation of persons with physical disabilities. This evaluation is commonly found in the mass media, in which cultural stereotypes of physical beauty are identified with goodness and stereotypes of disfigurement are identified with evil. In children's literature, persons with a handicap are frequently shown in an unfavorable light--e.g., Captain Hook, Long John Silver, Rumpelstiltskin, and witches (p. 897).

Similar findings were reported by Jones, Gottfried, and Owens (1966) in a study of 186 high school students. They found that the "average" and the "gifted" children comprise the most acceptable groups in most situations.

It has been shown by educators that some non-handicapped children hold attitudes that are unfavorable toward crippled children and those attitudes tend to reject and devalue the crippled child, forcing him into an ambiguous and underprivileged position, thus breeding in him insecurity, conflict and frustration. There seems to be a significant difference between attitudes which children display toward crippled children and those which they display toward non-crippled children. The crippled children seem to be considered as "inferior" and to be avoided or rejected by their peers. Such findings have been established by research with subjects of various ages, (Mussen and Barker 1944; Billings 1963; Force 1956). However, in an unpublished study, Cruickshank investigated the social acceptance of children by their physically normal peers. This study

included 807 non-handicapped and 29 handicapped children. The conclusion from the study was that there appears to be no significant difference in the rate of acceptance or rejection between the crippled and non-crippled children as demonstrated by the children's own choices when the responses on a sociometric test of the social acceptance or rejection of each child was investigated. Cruickshank believes that the factor of visible physical disability alone is apparently not the basis on which acceptance or rejection of a crippled child is made.

The previous studies indicate that handicapped people are frequently rejected by their peers at all age levels. They are often devalued as people, considered inferior, and avoided. Such treatment can be very detrimental to the individual's self image. Among the significant people believed to affect the child's feelings about himself after his parents and peers are his teachers.

In an investigation of the levels of acceptance or rejection of disabled persons by public school teachers Conine (1969) used a random sample of 501 teachers. He found that none showed a high degree (99th percentile or higher) of acceptance of disabled persons. He hypothesized that since the teachers' attitudes appear to be similar to the attitudes of the public toward disabled people, unfavorable attitudes of the public toward disabled people, may, at least in part, reflect the reactions of prejudiced school

teachers. Cutter (1959) contends that the handicapped child's physical difference stirs up personal subconscious problems in the teacher and the teacher is psychologically blocked in teaching children with physical differences.

In a study of the attitudes of classroom teachers toward exceptional children, Haring (1956) stated that the attitudes and understanding that teachers have about exceptional children influence the intellectual, social, and emotional development of these children.

Silberman (1969) found that teachers display to their students feelings of attachment, concern, indifference, and rejection despite their efforts to restrain their expression. Silberman states that:

. . .students who receive them are aware of most behavioral expressions of their teachers attitudes
. . .These actions not only serve to communicate to students the regard in which they are held by the significant adult, but they also guide the perception of and behavior toward these students by peers (pp. 14-15).

This statement adequately reflects the importance which others have placed on the teacher in setting the emotional tone of the classroom, and the acceptance or rejection of some students by all through the teacher's influence. Davidson and Lang (1960) investigated how the child's perception of his teacher's feelings, irrespective of its accuracy, related to his self concept, school achievement and classroom behavior. The conclusion was that there exists a positive correlation between children's perception

of themselves, their academic achievement, and their classroom behavior.

Through the use of a Draw-a-Person Test Wysocki (1965) found that the feelings of crippled children toward themselves can be differentiated from the feelings of non-crippled children toward themselves in terms of the handicapped experiencing higher levels of feelings of inferiority, anxiety, and aggression. The aggression is often directed toward parents or some other person whom the child feels is in some way responsible for his handicap. Wysocki stated:

Common observation will show that loss of function is not acceptable to a person be it a child or an adult and invariably gives rise to feelings of self-depreciation or worthlessness, feelings of culpability for the loss and so forth. Depression, hypermania, regression and hypochondriasis, and denial are some of the manifest defenses one may observe as frequently accompanying loss of function (p. 504).

Zion (1963) in an investigation involving 200 freshmen women at Humbolt State College found a linear relationship between self concept and body concept in most of the dimensions measured. It appears to her that the security one has in one's body is related to the security with which one faces one's self and the world. Similar findings were reported by Friend (1970) in a study of the self concept of rehabilitation students. She concluded that body-concept and self concept were related for all the students.

Cruickshank (1951) administered a Projective Sentence Completion Test to 264 physically handicapped children and

to a similar group of non-handicapped children. He found that children with various types of orthopedic, cardiac, and neurological handicaps see themselves as having more fears and more feelings of guilt than children of normal physical characteristics. He concluded that the presence of such emotions and feelings has a direct impact on the less satisfactory social adjustment which the handicapped children feel they are making.

Cutter (1962) believes that the handicapped child wants to be like other children, and learn in the school environment. However, his physical appearance causes adverse reactions which the handicapped child interprets as rejection. This rejection causes the child to experience feelings of anxiety and fearfulness toward himself. In trying to protect his feelings about himself (self concept) he dares not participate in the school learning experience. Cutter continues:

In the stressful situation he (the handicapped child) will act and react according to previously learned patterns, in attempting to achieve comfort and relative safety. There is no economy in these patterns. Rather they are pathological in that he becomes insulated and isolated from learning. The problem for the child is further compounded by negative reactions of the teacher and pupils. The vicious cycle in which the child is caught continues and expands. Soon the physical differences become minor and the child is emotionally and attitudinally handicapped (pp. 348-349).

Cutter believes that because learning is an ego function, any disorders which occur in a physically handicapped child's self concept will manifest themselves as educational

problems. The student's chances of academic success at any level are directly related to his self concept.

According to studies by Rosenthal and Jacobsen, there is a definite relationship between achievement and self concept. They conducted studies which revealed that as self concept improves and becomes more positive, achievement levels improve. Reverse studies were also done to see if as achievement improved, self concepts would improve. Conclusions were in the affirmative.

Combs and Snygg (1959) believe that the self is the individual's basic frame of reference, the central core, around which the remainder of the perceptual field is organized, and in this sense, the self concept is both product of the individual's experience and producer of whatever new experience he is capable of. On this assumption it can be stated that if a child does not see himself as succeeding academically he probably will not make the effort that is required for the attainment of academic success.

The relationship between academic underachievement and self concept was investigated by Fink (1962), who studied two groups of ninth-grade students paired on achievement and underachievement. The self concept of each student was judged as adequate or inadequate by two school psychologists and a clinical psychologist, on the basis of data from the California Psychological Inventory, the Bender Visual-Motor Gestalt Test, the Draw-a-Person Test, the Gough Adjective

Checklist, a personal data sheet and a student essay entitled "What I will be in 20 years."

The results of this study appear to show significant differences between achievers and underachievers, the achievers being rated as far more adequate in their concepts of themselves. Fink concluded that there is a significant relationship between self concept and academic underachievement among high school students.

The relationship between academic achievement and the self concept of college students was investigated by Stevens (1956). He studied 101 college sophomores. Fifty-two of the students were on the honor roll and 49 were on probation because of poor grades. The intelligence scores were all above the 75th percentile. Stevens concluded that the self concept of college students was seemingly directly related to academic achievement.

Research tends to support the position that poor self concepts, with their accompanying lack of confidence, feelings of inferiority, and anxieties, usually accompany deficiency in the child's school performances at all age levels. (Caplin 1969; Reeder 1955)

Therefore, academic success or failure appears to be as deeply rooted in the self concept as it is in measured mental ability. In 1967, Irwin studied the self reports of freshmen college students and reported significant relationships between their reported self concept and academic achievement.

He summarized his research by stating:

It may well be that a positive conception of one's self as a person is not only more important than striving to get ahead and enthusiasm for studying and going to school, but that it is a central factor when considering optimal scholastic performance (pp. 7-9).

Studies have been made on how the successful student sees himself and how his self concept contrasts with the self-image of the failing student. There seems to be evidence that self concept and scholastic success are directly related. Results further suggest a reciprocal relationship and give some reason to assume that enhancing the self concept is of vital importance in improving academic performance.

Helping Students by Enhancing Their Self Concept

While some school systems administer intelligence and achievement tests, very few attempt to provide valid, reliable measurements of the self concept. This may be due to the lack of information on the part of administrators and teachers concerning the possible importance of self concept to academic adjustment and success. Academic success is not determined by any one variable, but it is determined by many interacting variables. Intellectual ability is one determinant, but self-esteem may prove to be another major determinant. It should be the business of educators to identify students with derogatory self-esteem, to determine

the factors that have and are contributing to the low self-appraisal and to embark on a program of correction.

Methods of Enhancing the Self Concept

Davidson and Lang (1960) believe that it is essential that teachers communicate positive feelings to their students and that this will not only strengthen the students' positive self appraisals but stimulate their growth, academically as well as interpersonally.

Brookover (1965) involved training parents in an effort to improve their children's self-concept. The parents were trained to give positive communication to the children concerning the child's ability. The child's self concept improved and also his grade-point average; however, this improvement did not carry over into the next academic year. Similar positive communication from experts and counselors did not have a significant effect on self concept or achievement for these same children. Brookover concluded that it is more efficacious to work through established significant others such as parents than to attempt to develop new significant others as a basis of influence.

Before the handicapped person can develop a positive self concept, he must feel that he is a worthwhile person and is accepted by the group. To bring about this condition in the school room, Force (1956) suggests that the normal and physically handicapped children have as much contact between them as is educationally possible. He suggests that

deliberate efforts must be made by all members of the group before a feeling of belonging can be engendered in the physically handicapped child.

Cruickshank believes that attitudes can be changed by educators and other professional persons since they can influence the disabled under selected conditions. He thinks that the most promising approach to enhancing self concepts of the handicapped is planned interaction between disabled and nondisabled children under conditions favorable for both groups. He states, that group encounters under adult leadership seem to offer the most productive approach to attitude modification for both groups. The attitudes of both groups must be modified because the handicapped perceive the negative attitude as rejection of them as persons, not merely a rejection of their handicap.

Rogers believes that if a person is fully accepted, and in this acceptance there is no judgment, only compassion and sympathy, the individual is able to come to grips with himself, to develop the courage to give up his defenses and face his true self.

Roger's identification of the necessary conditions for therapeutic change are as follows: (1) congruence--the degree to which the therapist is genuine and without front, being open with feelings and attitudes; (2) empathy--the accuracy with which the therapist can understand the client's private world; (3) positive regard--the degree to which the

therapist values the client as a person regardless of the client's behavior at a particular moment; and (4) unconditionality of regard--the therapist's acceptance of all feelings of the client, not accepting some feelings and rejecting others. In addition Rogers indicates that the client must perceive these conditions in the relationship with the therapist before change will occur.

Combs, (1959) in his discussion of the development of a positive self stated:

People develop feelings that they are liked, wanted, acceptable and able from having been liked, wanted accepted and from having been successful. One learns that he is these things, not from telling, but from experience. To produce a positive self, it is necessary to provide experiences that teach individuals they are positive people . . . people learn that they are able, not from failure, but from success (p. 61).

Gazda (1970) believes that the goal of therapy should be to eliminate suffering by changing habits judged undesirable. The attainment of this primary goal appears to have a positive secondary effect of increasing the person's self-esteem, Gazda reports that those clients whose changes are measurable move in the direction of increased self-confidence and feelings of self worth, coupled with a more positive acceptance of their fellow man.

Gazda and Ohlsen (1966) found that two of three groups of parents who participated in short-term group counseling sessions significantly increased in acceptance of themselves and others.

Wylie (1961) reviewed the literature concerning the effects of counseling on the students' self concept. She found only four studies, Caplan (1957), Rogers and Dymond (1954), Butler and Haigh (1954), and Berdie (1954), comparing the self concepts of counseled versus non-counseled subjects. Caplan found significant increases of self-ideal congruence among seventeen problem boys who received group counseling as contrasted to seventeen non-counseled boys matched for IQ, sex, school record, economic status, and initial self-ideal congruence.

Butler and Haigh report that clients who waited sixty days for therapy showed no improvement in self-ideal congruence over the waiting period, while from pre-counseling to follow-up there was significant improvement. The therapy patients were also compared to non-therapy controls who showed no change in self-ideal congruence over the period from pre-therapy to follow-up.

The therapy research reported by Rogers and Dymond (1954) paralleled those studies reported by Butler and Haigh. They found no change in subjects' self-reports of the no-therapy control subjects. But, there was a significant change toward reports of greater "maturity" from pre-therapy to post-therapy in subjects who received therapy.

Berdie (1954) tested the hypothesis that counseling will increase the realism of the self concept. He compared the self-concept realism scores of an experimental and control

group. The experimental group received vocational counseling and educational counseling, while the control group did not. The counseling was aimed at increasing the subjects' accuracy in appraising their vocational interests, probable college achievement, college aptitude, and personality characteristics. Results indicated that college men (but not women) improved their ability to estimate probable college achievement and vocational interests. No differences were found between experimental and control groups' ability to estimate aptitude or personality characteristics.

These research results tend to support the premise that counseling is effective in increasing the congruence of the self-ideal, maturity, and accuracy of self appraisal.

Summary of Review of Related Literature

In an effort to meet the needs of the physically handicapped student Federal and State agencies have provided financial means to enable the student to gain post high school training and education. These same agencies have provided for the removal of architectural barriers in new or extensively remodeled buildings if federal funds are involved in the construction. It is now apparent to educators that problems are encountered by the handicapped student other than the problem of the physical access to buildings and the financial problems that have been provided for with federal funds.

In an effort to meet some of the unique needs of students, innovative programs have been developed and implemented on some campuses. The majority of these programs have been directed toward the student's adjustment in college. Educators have attempted in various ways to aid the student in his attempt to maintain an adequate grade-point average and make a successful adjustment to college. Group and individual counseling techniques have been used as a means of helping students. A review of the literature presents conflicting results from these efforts.

The physically handicapped student seems to have the same problems and frustrations while trying to succeed on the campus that other students experience. Added to these problems are the frustrations of being physically disabled. This disability is not contained in the loss of function of one part of the body, but it spreads to cover other facets of the person's life.

Self concept is built upon the treatment one receives from others. Respect and love build a worthwhile concept, criticism and contempt suggest to the person that he is of little worth.

It is difficult for the physically handicapped student to gain social acceptance. The lack of acceptance by others can effect the self concept, since the individual forms impressions of himself as the result of perceptual feedback

from others, and such feedback is accompanied by evaluative information about the self.

A person's most important early perception of his environment is dependent upon the mother-father-home atmosphere. The parents of handicapped children often experience feelings of guilt, uncertainty, hopelessness, desperation and frustration. As the child faces these emotions in his environment, he can develop negative feelings toward himself.

As he matures and his perceptual field enlarges to include significant others, the child begins his association with peer groups through neighborhood, school, and community activities. There seems to be a significant difference between attitudes which children display toward crippled children and those which they display toward non-crippled children. The crippled children seem to be considered as inferior and to be avoided or rejected by their peers. This rejection may cause personality problems for the handicapped child at all age levels.

Investigators reported results which support the theoretical contention that feelings about the self are established early in life and are modified by subsequent experiences. Among the significant people believed to affect the child's feelings about himself after his parents and peers are his teachers. Teachers often show rejection of the physically handicapped child which in turn causes the students to also reject the child. This felt rejection by

others may cause the handicapped person to reject himself. Research supports the premise that the handicapped person often does show self rejection.

Since learning is an ego function, any disorders which occur in a physically handicapped child's self concept will manifest themselves as educational problems. The student's chances of academic success at any level are directly related to his self concept.

One way of helping the physically handicapped student to succeed on the campus would be to find ways to increase his positive feelings toward himself and raise his self concept. Counseling has been used successfully by researchers to improve the self concept and make the person more mature. These research results tend to support the premise that counseling is effective in increasing congruence of the self-ideal, maturity, and accuracy of self-appraisal.

CHAPTER III

METHODS AND PROCEDURES

In the present study the researcher conducted several individual (one-to-one) and group counseling sessions for two groups of physically handicapped students enrolled at East Central State College at Ada, Oklahoma during both semesters of the 1973-74 academic year. Individual counseling sessions were conducted for one (1) hour per week during the eight-week experiment. Group counseling sessions were conducted for one and one-half ($1\frac{1}{2}$) hours per week during the eight-week experiment. The Tennessee Self-Concept Scale was administered to the eighteen (N=18) students chosen for group counseling sessions, the twenty (N=20) students chosen for individual counseling sessions, and twenty (N=20) students chosen as a control group. The self-concept scale was administered as a pretest at the beginning of the second semester and again eight weeks later as a posttest. The data collected from the TSCS were used to test the six hypotheses stated in Chapter 1.

The methods and procedures used in the study were all classified as follows: (1) Pre-Experimental Procedures, (2) Experimental Procedures, and (3) Data Analysis Procedures. Each of these areas is discussed in this Chapter.

PRE-EXPERIMENTAL PROCEDURES

The pre-experimental procedures consisted of all those tasks which the researcher had to complete before the actual collection of the data began. The most important of these tasks are described in the following sections.

Choice of Research Design

The first pre-experimental procedure was to choose the proper research design for the conduct of the study. The words "research design" are intended to mean the plan, structure, and strategy of investigation conceived to obtain answers to research questions and to control external sources of variation. The Plan is the overall scheme or program of the evaluation problem; the Structure is the more specific structure or paradigm of the actual manipulation of the independent variables being controlled; and the Strategy as used here is even more specific than the structure--it is the actual methods to be used in the gathering and analysis of the data.

A research design serves two basic purposes: (1) it provides answers to research questions posed by the investigator; and (2) it controls external sources (independent variables) of variation. In other words, it is through the design of a study that research is made effective and interpretable. Kerlinger (1964) makes the following statement in regard to research and evaluation designs:

. . . How does design accomplish this? Research designs set up the framework for 'adequate' tests of the relations among variables. The design tells us, in a sense, what observations (measurements) to make, how to make them, and how to analyze the quantitative representations (data) of the observations. Strictly speaking, design does not 'tell' us precisely what to do, but rather suggests the directions of observation-making and analysis, how many observations should be made, and which variables (independent variables) can then act to manipulate (control) the active variables and to dichotomize or trichotomize or otherwise categorize the assigned variables. A design tells us what type of statistical analysis to use. Finally, an adequate (proper for the particular situation) design outlines possible conclusions to be drawn from the statistical analysis (pp. 196-197) (Parentheses material added).

The research design chosen for the present experiment was a three-sample true experimental design preceded by the sampling of participants from three (3) finite populations. A paradigm of this research design is presented in Figure 1.

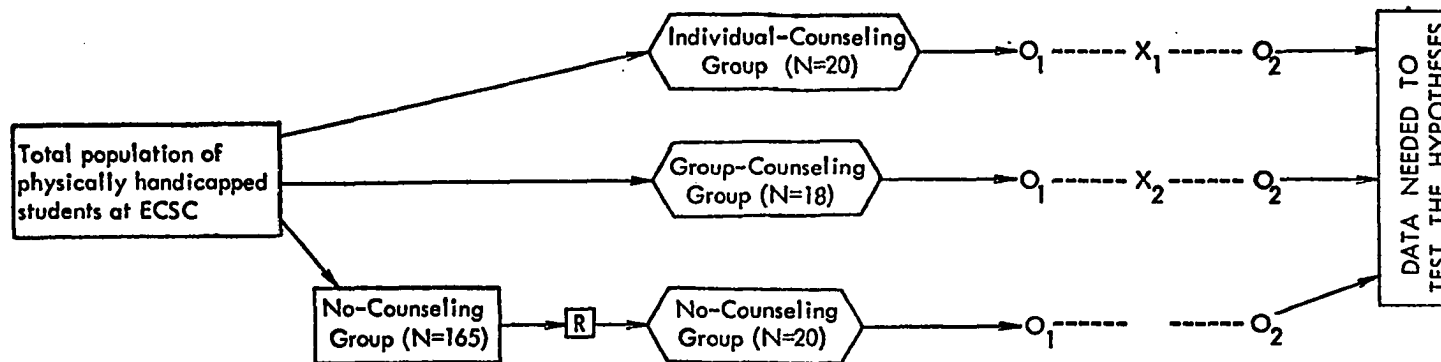
Methodological Literature

Rogers (1961) indicates that after choosing the hypotheses which we wish to test, and the instruments most suitable for their operational measurement, the next step is to decide on the method to use in getting the information we need. The research design that Rogers felt to be most effective in most experimental situations was the pretest-posttest control group design. This was one of the major reasons for choosing the design used in the present study.

A second reason for choosing the design shown in Figure 1 was its use in previous studies. In a survey conducted by

Figure 1

RESEARCH DESIGN USED IN THE EXPERIMENT



Explanation of Symbols:

- [R]** = Random selection or assignment
- O₁** = Pretest administration of the Tennessee Self-Concept Scale
- O₂** = Posttest administration of the Tennessee Self-Concept Scale
- X₁** = Individual Counseling sessions conducted
- X₂** = Group Counseling sessions conducted

the Student Personnel and Guidance Journal of thirty-eight different and independent studies concerning the outcomes of group counseling ranging in time from 1959 through 1967, thirty of the studies used a pretest-posttest control group design.

One criticism of the design shown in Figure 1 is that it tends to propagate the Hawthorne Effect (Campbell & Stanley, 1963). The Hawthorne Effect is an experimental effect resulting from the participants' extra effort and superior performance simply because they know they are part of an experiment (Orne, 1962). While such an effect probably did occur in the present study, all three student groups should have received equal amounts of the phenomenon, and the overall effects of the Hawthorne Effect were considered to be controlled by the same-to-all principle (Kerlinger, 1973).

Selection of an Instrument for Measuring Self Concept

The final step of the pre-experimental procedures was the selection of a standardized test for measuring the physically handicapped students' self concept. The one chosen for the present study was the Tennessee Self-Concept Scale (Fitts, 1964). The Tennessee Self-Concept Scale (TSCS) is an instrument designed to record a standardized measure of the respondents self concept in the following areas:

- (1) Self Identity - (What I Am)
- (2) Self Satisfaction
- (3) Behavioral Self - (What I do)
- (4) Physical Self - (My view of my physical body)
- (5) Moral and Ethical Self - (Describes self as being good of bad)
- (6) Personal Self
- (7) Family Self - (Feelings of adequacy in the family)
- (8) Social Self - (Relationship to others)
- (9) Total Positive Self

Buros (1970) reports the concurrent validity of the TSCS as ranging from .61 to .77. This same source reports the test-retest reliability as ranging from .81 to .87. These validity and reliability figures indicate that the Tennessee Self-Concept Scale (TSCS) contains sufficient reliability and validity for use in the present study.

Selection of Study Participants

The next step of the pre-experimental procedures was the selection of the study participants. This selection procedure posed some problems since the nature of the Federal programs involved will not allow the practice of selectively choosing groups to receive special treatment or assistance. This discriminatory practice was avoided by allowing the potential participants to "sort themselves" into three groups.

At the beginning of the study, two-hundred fourteen (N=214) students enrolled at East Central State College

(ECSC) qualified for the services and assistance provided by Project GOALS. Project GOALS is funded by the Department of Health Education and Welfare's Office of Education. This program has expressed the ultimate goal to assist the physically handicapped college student to acquire education and/or professional training in spite of his physical disability.

At the beginning of the Spring semester, thirty-eight (N=38) students were enrolled with one counselor in the GOALS programs. Twenty (N=20) participated in the individual counseling sessions and twenty (N=20) participated in the group-counseling sessions. Later, it was necessary to drop two of the group-counseling participants thereby reducing the final group size to eighteen (N=18). Pretest-posttest self-concept scores reported by the two counseling groups from the nine Tennessee Self-Concept Scales were compared to self-concept scores reported by those physically handicapped students who did not participate in either of the counseling programs. The sampling paradigm used in the present study is shown in Figure 2.

Figure 2

SAMPLING DESIGN USED IN THE STUDY

The Groups of Physically Handicapped College Students Involved in the Study	Individual-Counseling Group	Group-Counseling Group	No-Counseling Group	TOTAL Number of All Groups
	(N = 20)	(N = 18)	(N = 20)	(N = 58)

EXPERIMENTAL PROCEDURES

The second phase of the method and procedures performed in the conduct of the study was termed the experimental procedures. These procedures included all those tasks performed from the pretest administration of the TSCS to the posttest administration of the same instrument eight weeks later.

At the beginning of the second semester (1973-74 academic year), those ECSC students who were enrolled in the program were given the TSCS and told that individual and group counseling sessions were available to them if they needed or desired such assistance. It was anticipated that some would choose the individual counseling sessions, some would choose the group counseling sessions, and some would not participate in either. Individual and group counseling sessions were held on a weekly basis with the individual counseling sessions consuming approximately one (1) hour each and the group counseling sessions consuming approximately one and one-half ($1\frac{1}{2}$) hours each.

Description of Experimental Treatments

The experimental treatments used in this study were designed to test the effectiveness of individual and group counseling at changing the self concept of handicapped college students. The treatment was based on assumptions made by educators (Ohlsen, 1970), (Rogers, 1961), (Combs,

1968) that adjustment is a dynamic process and that a well adjusted person realizes that he is gradually becoming his "wished-for" self (ideal self) and is able to accept himself and others. Rogers states further:

During therapy feelings which have previously been denied to awareness are experienced, and are assimilated into the concept of self; during therapy the concept of the self becomes more congruent with the concept of the ideal self; during and after therapy the observed behavior of the client becomes more socialized and mature, during and after therapy the client increases in attitudes of self-acceptance, and this is correlated with an increase in acceptance of others (p. 125).

Rogers continued that further careful evaluation of his research findings enabled him to draw certain conclusions such as these:

During and after therapy profound changes occur in the perceived self of the client and there is constructive changes in the client's personality characteristics and personality structure, changes which bring him closer to the personality characteristics of the well functioning person; that there are changes in directions defined as personal integration and adjustment; that there are changes in the maturity of the client's behavior as observed by friends. In each instance the change is significantly greater than that found in the control group or in the clients during the own-control group (p. 127).

Because of the time-limited treatment, (one time per week for eight weeks), it was necessary to encourage the subjects to become aware of and verbalize their current attitudes and opinions regarding their physical condition. A list of topics discussed is as follows:

1. The subjects' perceptions of themselves.

2. The subjects' attitudes and opinions about being handicapped.
3. The subjects' attitudes and opinions regarding how they think others see them.
4. The subjects' perceptions of how their family members consider them to be limited academically, physically, and socially by their physical disabilities.
5. The subjects' perceptions of the roles they play in their families.
6. The subjects' perceptions of their abilities to perform academically on the campus.
7. The subjects' attitudes and opinions about their social roles on the campus.
8. The subjects' attitudes and opinions regarding their abilities to choose a realistic college major that will lead to a satisfying life in the world of work after college graduation.

The first five topics were chosen because they are germane to evaluating one's self concept. The review of literature related to self concept (Fitts, 1971, Mead, 1934) has as its central theme one's perception of himself, and his perceptions, attitudes, and opinions of how others view his actions and behavior. It has been previously established that academic achievement and the student's self concept are highly related (Purkey, 1968).

Discussion topics six through eight allowed the subjects a chance to express their attitudes and opinions regarding their perceived roles on the campus.

The topics discussed in the counseling sessions were relevant in that the design permitted subjects to evaluate

their own attitudes and opinions about themselves as well as others' attitudes and opinions about them.

The subjects, in individual counseling, were encouraged to do some introspection and also become aware of the perceptions of others. They were encouraged to discuss problems that they were experiencing. Once these problems were exposed, the subjects were encouraged to discuss alternatives and solutions. This approach was designed to assist subjects to become aware of the fact that there are solutions to their problems and that through their own efforts and resources they are capable of handling and solving them. It was anticipated that this would help them establish confidence in themselves, so that they would develop an attitude of confidence in their abilities to handle both immediate and future problems. As they feel themselves able to cope with and solve problems, their self concepts would, hopefully, improve.

The subjects, in group sessions, were encouraged to openly present their attitudes, opinions and/or thoughts to the inspection of their peers. It was anticipated that these procedures would have the effect of helping participants to view and accept their own attitudes in a more realistic light when they realized that most people seem to experience the same fears, anxieties, and feelings of inferiority.

At the end of the eight-week experiment, the Tennessee Self-Concept Scale was again administered to the participants of all three groups. This administration of the instrument was considered to be the posttest measure.

Although there was a substantial number of physically handicapped students who did not participate in either the individual or group-counseling sessions, it was necessary to randomly select a group of twenty ($N=20$) of these students as a means of testing the hypotheses. However, there was no way of anticipating which students would be randomly selected until after the experiment was complete, and it was necessary to administer the TSCS to all members of the no-counseling group on a pretest-posttest basis. After the posttest administration of the instrument, twenty ($N=20$) were randomly selected from the total population of the no-counseling group. Changes in the self-concept scores of the individual-counseling, group-counseling, and no-counseling groups were compared in an attempt to determine the effects of the counseling sessions on the self-concept scores of the two counseling groups.

It should be noted that all students who were assigned to the individual-counseling group attended sessions conducted by only one counselor. In addition, those students who were assigned to the group-counseling group attended sessions conducted by only one counselor. However, it was later learned that two of the group counseling participants

had attended group counseling sessions conducted by a second counselor, and it was necessary to eliminate these two students from the group-counseling group in order to avoid possible contamination of the research data due to difference in the group counselors.

Data-Analysis Procedures

The final phase of the methods and procedures was the data-analysis procedures. These procedures included all those tasks which had to be performed after the data were collected. These tasks included the preliminary coding and scoring of the Tennessee Self-Concept Scale answer sheets, entry of the participants' self-concept scores on IBM cards, calculation of descriptive and inferential statistics, and testing of the hypotheses stated in Chapter I.

The preliminary coding and scoring of the TSCS answer sheets and the entry of data on IBM cards was accomplished by returning the respondents' TSCS answer sheets to the publisher. The Tennessee State Department of Mental Health provides a computerized scoring service of the TSCS which results in a self-concept score on each subtest on the TSCS which is entered on an IBM card along with the participant's name. The IBM cards were used in the statistical calculations.

The next step of the data analysis procedures was the calculation of descriptive statistics on TSCS scores. The

primary statistics calculated were the mean ($\bar{X}$), standard deviation (SD), and the variance (S^2).

The next step was the calculation of the inferential statistics needed to test the hypotheses. The six null hypotheses tested are presented in Figure 3 along with the statistics used to test each.

The Testing Statistic

The statistic chosen for testing the hypotheses was a Student's t-test (Student, 1927). This particular testing statistic was chosen for two reasons; (1) publishers of the Tennessee Self-Concept Scale suggest that the sub-scale scores be statistically compared with either the t-test or an analysis of variance technique (Fitts, 1964), and (2) research criteria showed the t-test to be the most appropriate statistic for the research design chosen for the study.

Siegel (1966) suggests several criteria be considered when choosing a testing statistic. He suggests the level of measurement of the data collected, number of groups being compared at any one time, number of subjects within each group, nature of the null hypothesis being tested with the statistic, and the assumptions underlying the testing statistic chosen. When these five criteria were considered, the Student's t-test was chosen, since no other testing statistic was considered to be appropriate. The results derived from testing the hypotheses are presented in Chapter IV.

Figure 3

INFERENTIAL STATISTICS USED TO TEST THE NULL HYPOTHESES

Hypothesis Number	Null Hypothesis Tested	Testing Statistic(s)	Data Involved in the Calculations
One	Ho ₁ There are no statistically significant differences among the pretest-posttest self-concept change scores (taken from the <u>Tennessee Self-Concept Scale</u>) of those physically handicapped college students who attend individual counseling sessions AND the pretest-posttest self-concept change scores (taken from the <u>Tennessee Self-Concept Scale</u>) of those physically handicapped college students who do not attend individual counseling sessions.	Multiple t-tests among the two groups' self-concept scores	(1) Individual-Counseling Group's nine self-concept scores (2) No-Counseling Group's nine self-concept scores
Two	Ho ₂ There are no statistically significant differences among the pretest-posttest self-concept change scores (taken from the <u>Tennessee Self-Concept Scale</u>) of those physically handicapped college students who attend group counseling sessions AND the pretest-posttest self-concept change scores (taken from the <u>Tennessee Self-Concept Scale</u>) of those physically handicapped college students who do not attend the group counseling sessions.	Multiple t-tests among the two groups' self-concept scores	(1) Group-Counseling Group's nine self-concept scores (2) No-Counseling Group's nine self-concept scores
Three	Ho ₃ There are no statistically significant differences among the pretest-posttest self-concept change scores (taken from the <u>Tennessee Self-Concept Scale</u>) of those physically handicapped college students who attend individual counseling sessions AND the pretest-posttest self-concept change scores (taken from the <u>Tennessee Self-Concept Scale</u>) of those physically handicapped college students who attend group counseling sessions.	Multiple t-tests among the two groups' self-concept scores	(1) Individual-Counseling Group's nine self-concept scores (2) Group-Counseling Group's nine self-concept scores
Four	Ho ₄ There are no statistically significant differences between the pretest self-concept scores (taken from the <u>Tennessee Self-Concept Scale</u>) of physically handicapped college students who attended individual counseling sessions and the posttest self-concept scores (taken from the <u>Tennessee Self-Concept Scale</u>) of the same participants.	Multiple t-tests between pretest and posttest scores	Individual-Counseling Group's nine self-concept scores from the pretest and posttest TSCS
Five	Ho ₅ There are no statistically significant differences between the pretest self-concept scores (taken from the <u>Tennessee Self-Concept Scale</u>) of physically handicapped college students who attended group counseling sessions and the posttest self-concept scores (taken from the <u>Tennessee Self-Concept Scale</u>) of the same participants.	Multiple t-tests between pretest and posttest scores	Group-Counseling Group's nine self-concept scores from the pretest and posttest TSCS
Six	Ho ₆ There are no statistically significant differences between the pretest self-concept scores (taken from the <u>Tennessee Self-Concept Scale</u>) of physically handicapped college students who did not attend the individual and group counseling sessions and the posttest self-concept scores (taken from the <u>Tennessee Self-Concept Scale</u>) of the same participants.	Multiple t-tests between pretest and posttest scores	No-Counseling Group's nine self-concept scores from the pretest and posttest TSCS

CHAPTER IV

RESULTS OF DATA ANALYSIS

Fifty-eight (N=58) physically handicapped college students enrolled at East Central State College (Ada, Oklahoma) were asked to participate in the present experiment to determine the effects of individual and group counseling sessions on the participants' self concepts. The Tennessee Self-Concept Scale was administered to all participants at the beginning of the study (pretest) and again eight weeks later (posttest). Scores from the nine subareas of the test were compared to test the six hypotheses stated in the first chapter. It was hypothesized that individual and group counseling sessions conducted for the physically handicapped students would enhance their self esteem (self concepts). This chapter contains the results of testing these six hypotheses.

The tables contained in Chapter IV contain only the descriptive statistics needed to test each hypothesis. The raw scores recorded for each participant in each group are presented in the appendices.

It should further be mentioned that there is a definite pattern in presenting the statistical results. First, the hypothesis being tested is stated. This is followed by

a statement of the statistical procedures used to test the hypothesis and table(s) containing the statistical results obtained from the calculations. The statistical results are followed by a brief explanation and summary. The chapter ends with a short summary of all the results obtained in testing the six hypotheses.

Results of Testing Null Hypothesis Number One (H_{01})

The exact form of the null proposition tested in hypothesis number one was as follows:

H_{01} There are no statistically significant differences between the pretest-posttest self-concept change scores (taken from the Tennessee Self-Concept Scale) of the physically handicapped college students who attended individual counseling sessions and the pretest-posttest self-concept change scores (taken from the Tennessee Self-Concept Scale) of the physically handicapped college students who did not attend the individual counseling sessions.

The first null hypothesis was tested by performing multiple t-tests between the pretest-posttest self-concept change scores computed for the two groups being compared in the hypothesis. The means and standard deviations computed for the pretest, posttest, and change scores are presented in Table 1. Results of the t-test calculations are presented in Table 2, in addition to the means and standard deviations used in the calculations.

The statistical results presented in Table 2 indicate that there were significant differences between the self-concept change scores of the two groups being compared in

TABLE 1

DESCRIPTIVE STATISTICS COMPUTED FOR THE PRETEST, POSTTEST, AND DIFFERENCE MEASURES OF SELF CONCEPT AS RECORDED FOR THE INDIVIDUAL-COUNSELING GROUP AND THE NO-COUNSELING GROUP

Subareas of the Tennessee Self-Concept Scale		Individual-Counseling Group			No-Counseling Group		
		Pretest	Posttest	Difference	Pretest	Posttest	Difference
TOTAL POSITIVE	$\bar{X}^*$ SD**	337.95 25.97	342.75 32.62	4.80 12.37	336.60 30.97	333.50 29.42	-3.10 10.52
Self Identity	$\bar{X}$ SD	123.65 10.38	127.95 15.16	4.30 5.44	124.50 12.82	122.75 13.15	-1.75 5.89
Self Satisfaction	$\bar{X}$ SD	103.85 14.85	106.30 15.70	2.45 5.62	103.00 13.37	100.90 14.20	-2.10 5.35
Behavioral Self	$\bar{X}$ SD	110.45 10.33	111.50 11.81	1.05 8.00	108.60 12.28	109.80 9.53	1.20 6.58
Physical Self	$\bar{X}$ SD	66.15 7.01	67.70 7.39	1.55 6.03	67.75 7.59	67.00 7.55	-0.75 4.42
Moral/Ethical Self	$\bar{X}$ SD	70.00 9.70	69.70 9.34	-0.30 5.70	68.95 6.13	67.35 5.89	-1.60 3.19
Personal Self	$\bar{X}$ SD	63.55 7.79	65.65 8.29	2.10 3.57	65.85 6.25	64.70 6.28	-1.15 2.69
Family Self	$\bar{X}$ SD	69.75 8.56	70.45 9.09	0.70 5.04	69.20 9.04	68.15 8.99	-1.05 3.25
Social Self	$\bar{X}$ SD	68.70 7.27	69.25 7.05	0.55 7.93	66.00 7.85	66.05 7.36	0.05 4.17

* $\bar{X}$ = Mean (Average)

** SD = Standard Deviation

TABLE 2

**COMPARISONS OF THE SELF-CONCEPT CHANGES RECORDED FOR STUDENTS FROM
THE INDIVIDUAL-COUNSELING GROUP AND THE NO-COUNSELING GROUP**

Subareas of the <u>Tennessee Self-Concept Scale</u>	Change Scores of Individual-Counseling Group		Change Scores of No-Counseling Group		Calculated t-Value	Significance Level
	Mean	Standard Deviation	Mean	Standard Deviation		
TOTAL POSITIVE	4.80	12.37	-3.10	10.52	2.176	< .05
Self Identity	4.30	5.44	-1.75	5.89	3.374	< .01
Self Satisfaction	2.45	5.62	-2.10	5.35	2.623	< .05
Behavioral Self	1.05	8.00	1.20	6.58	0.065	> .05
Physical Self	1.55	6.03	-0.75	4.42	1.375	> .05
Moral/Ethical Self	-0.30	5.70	-1.60	3.19	0.890	> .05
Personal Self	2.10	3.57	-1.15	2.69	3.250	< .01
Family Self	0.70	5.04	-1.05	3.25	1.305	> .05
Social Self	0.55	7.93	0.05	4.17	0.250	> .05

the first hypothesis. The individual-counseling group showed significantly greater gains than the no-counseling group on the following subareas of the Tennessee Self-Concept Scale: (1) Total Positive Self, (2) Self Identity, (3) Self Satisfaction, and (4) Personal Self. The individual-counseling group showed greater, though insignificant, gains than the no-counseling group on the following subareas of the Tennessee Self-Concept Scale (TSCS): (1) Physical Self, (2) Moral/Ethical Self, (3) Family Self, and (4) Social Self. On the other hand the no-counseling group showed a greater, though insignificant, gain than the individual-counseling group on the subarea of Behavioral Self of the TSCS.

These results allowed the researcher to reject the first null hypothesis and conclude that the physically handicapped students who participated in the individual counseling sessions showed significantly greater improvement in their self concepts than those physically handicapped students who did not participate in the individual counseling sessions.

Results of Testing Null Hypothesis Two (H_{02})

The exact form of the null proposition tested in hypothesis number two was as follows:

H_{02} There are no statistically significant differences between the pretest-posttest self-concept change scores (taken from the Tennessee Self-Concept Scale) of the physically handicapped college students who

attended group counseling sessions and the pretest-posttest self-concept change scores (taken from the Tennessee Self-Concept Scale) of the physically handicapped college students who did not attend the group counseling sessions.

The second null hypothesis was tested by performing multiple t-tests between the pretest-posttest self-concept change scores computed for the two groups being compared in the hypothesis. The means and standard deviations computed for the pretest, posttest, and change scores are presented in Table 3. Results of the t-test calculations are presented in Table 4, in addition to the means and standard deviations used in the calculations.

The statistical results presented in Table 4 indicate that there were significant differences between the self-concept change scores of the two groups being compared in the second hypothesis. The group-counseling group showed significantly greater gains than the no-counseling group on the following subareas of the Tennessee Self-Concept Scale (TSCS): (1) Total Positive Self, (2) Self Identity, (3) Self Satisfaction, (4) Physical Self, (5) Personal Self, (6) Family Self, and (7) Social Self. In addition, the group-counseling group showed greater, though insignificant, gains than the no-counseling group on the following two areas of the Tennessee Self-Concept Scale: (1) Behavioral Self and (2) Moral/Ethical Self.

These results allowed the researcher to reject the second null hypothesis and conclude that the physically

TABLE 3
DESCRIPTIVE STATISTICS COMPUTED FOR THE PRETEST, POSTTEST, AND DIFFERENCE
MEASURES OF SELF CONCEPT AS RECORDED FOR THE GROUP-COUNSELING
GROUP AND THE NO-COUNSELING GROUP

Subareas of the Tennessee Self-Concept Scale		Group-Counseling Group			No-Counseling Group		
		Pretest	Posttest	Difference	Pretest	Posttest	Difference
TOTAL POSITIVE	$\bar{X}^*$	324.56	348.89	24.33	336.60	333.50	-3.10
	SD**	43.28	31.69	14.21	30.97	29.42	10.52
Self Identity	$\bar{X}$	120.56	128.44	7.88	124.50	122.75	-1.75
	SD	9.78	12.36	6.33	12.82	13.15	5.89
Self Satisfaction	$\bar{X}$	99.39	107.06	7.67	103.00	100.90	-2.10
	SD	12.67	18.02	6.44	13.37	14.20	5.35
Behavioral Self	$\bar{X}$	110.17	113.94	3.77	108.60	109.80	1.20
	SD	12.62	10.84	11.86	12.28	9.53	6.58
Physical Self	$\bar{X}$	67.44	70.06	2.62	67.75	67.00	-0.75
	SD	8.25	7.17	4.29	7.59	7.55	4.42
Moral/Ethical Self	$\bar{X}$	71.28	72.83	1.55	68.95	67.35	-1.60
	SD	7.03	7.56	5.92	6.13	5.89	3.19
Personal Self	$\bar{X}$	62.44	66.89	4.45	65.85	64.70	-1.15
	SD	8.27	10.32	3.13	6.25	6.28	2.69
Family Self	$\bar{X}$	64.72	70.44	5.72	69.20	68.15	-1.05
	SD	8.74	10.62	7.80	9.04	8.99	3.25
Social Self	$\bar{X}$	64.78	67.72	2.94	66.00	66.05	0.05
	SD	7.42	9.37	4.58	7.85	7.36	4.17

* $\bar{X}$ = Mean (Average)

** SD = Standard Deviation

TABLE 4
COMPARISONS OF THE SELF-CONCEPT CHANGES RECORDED FOR STUDENTS FROM
THE GROUP-COUNSELING GROUP AND THE NO-COUNSELING GROUP

Subareas of the <u>Tennessee Self-Concept</u> <u>Scale</u>	Change Scores of Group-Counseling Group		Change Scores of No-Counseling Group		Calculated t-Value	Significance Level
	Mean	Standard Deviation	Mean	Standard Deviation		
TOTAL POSITIVE	24.33	14.21	-3.10	10.52	9.649	< .001
Self Identity	7.88	6.33	-1.75	5.89	4.980	< .001
Self Satisfaction	7.67	6.44	-2.10	5.35	5.219	< .001
Behavioral Self	3.77	11.86	1.20	6.58	0.813	> .05
Physical Self	2.62	4.29	-0.75	4.42	2.446	< .05
Moral/Ethical Self	1.55	5.92	-1.60	3.19	2.011	> .05
Personal Self	4.45	3.13	-1.15	2.69	6.063	< .001
Family Self	5.72	7.80	-1.05	3.25	3.425	< .001
Social Self	2.94	4.58	0.052	4.17	2.086	< .05

handicapped students who participated in the group counseling sessions showed significantly greater improvement in their self concepts than those physically handicapped students who did not participate in the group counseling sessions.

Results of Testing Null Hypothesis Number Three (H_{o_3})

The exact form of the null proposition tested in hypothesis number three was as follows:

H_{o_3} There are no statistically significant differences between the pretest-posttest self-concept change scores (taken from the Tennessee Self-Concept Scale) of the physically handicapped college students who attended individual counseling sessions and the pretest-posttest self-concept change scores (taken from the Tennessee Self-Concept Scale) of the physically handicapped college students who attended group counseling sessions.

The third null hypothesis was tested by performing multiple t-tests between the pretest-posttest self-concept change scores computed for the two groups being compared in the hypothesis. The means and standard deviations computed for the pretest, posttest, and change scores are presented in Table 5. Results of the t-test calculations are presented in Table 6, in addition to the means and standard deviations used in the calculations.

The statistical results presented in Table 6 indicate that there were significant differences between the self-concept change scores of the two groups being compared in the third hypothesis. The group-counseling group showed significantly greater gains than the individual-counseling

TABLE 5
DESCRIPTIVE STATISTICS COMPUTED FOR THE PRETEST, POSTTEST, AND DIFFERENCE
MEASURES OF SELF CONCEPT AS RECORDED FOR THE INDIVIDUAL-COUNSELING
GROUP AND THE GROUP-COUNSELING GROUP

Subareas of the Tennessee Self-Concept Scale		Individual-Counseling Group			Group-Counseling Group		
		Pretest	Posttest	Difference	Pretest	Posttest	Difference
TOTAL POSITIVE	$\bar{X}^*$	337.95	342.75	4.80	324.56	348.89	24.33
	SD**	25.97	32.62	12.37	43.28	31.69	14.21
Self Identity	$\bar{X}$	123.65	127.95	4.30	120.56	128.44	7.88
	SD	10.38	15.16	5.44	9.78	12.36	6.33
Self Satisfaction	$\bar{X}$	103.85	106.30	2.45	99.39	107.06	7.67
	SD	14.85	15.70	5.62	12.67	18.02	6.44
Behavioral Self	$\bar{X}$	110.45	111.50	0.75	110.17	113.94	3.77
	SD	10.33	11.81	8.00	12.62	10.84	11.86
Physical Self	$\bar{X}$	66.15	67.70	1.55	67.44	70.06	2.62
	SD	7.01	7.39	6.03	8.25	7.17	4.29
Moral/Ethical Self	$\bar{X}$	70.00	69.70	-0.30	71.28	72.83	1.55
	SD	9.70	9.34	5.70	7.03	7.56	5.92
Personal Self	$\bar{X}$	63.55	65.65	2.10	62.44	66.89	4.45
	SD	7.79	8.29	3.57	8.27	10.32	3.13
Family Self	$\bar{X}$	69.75	70.45	0.70	64.72	70.44	5.72
	SD	8.56	9.09	5.04	8.74	10.62	7.80
Social Self	$\bar{X}$	68.70	69.25	0.55	64.78	67.72	2.94
	SD	7.27	7.05	7.93	7.42	9.37	4.58

* $\bar{X}$ = Mean (Average)
 ** SD = Standard Deviation

TABLE 6
COMPARISONS OF THE SELF-CONCEPT CHANGES RECORDED FOR STUDENTS FROM
THE INDIVIDUAL-COUNSELING GROUP AND THE GROUP-COUNSELING GROUP

Subareas of the <u>Tennessee Self-Concept</u> <u>Scale</u>	Change Scores of Individual-Counseling Group		Change Scores of Group-Counseling Group		Calculated t-Value	Significance Level
	Mean	Standard Deviation	Mean	Standard Deviation		
TOTAL POSITIVE	4.80	12.37	24.33	14.21	7.010	< .001
Self Identity	4.30	5.44	7.88	6.33	1.918	> .05
Self Satisfaction	2.45	5.62	7.67	6.44	2.731	< .05
Behavioral Self	0.75	8.00	3.77	11.86	0.910	> .05
Physical Self	1.55	6.03	2.62	4.29	0.647	> .05
Moral/Ethical Self	-0.30	5.70	1.55	5.92	0.978	> .05
Personal Self	2.10	3.57	4.45	3.13	2.214	< .05
Family Self	0.70	5.04	5.72	7.80	2.329	< .05
Social Self	0.55	7.93	2.94	4.58	1.167	> .05

group on the following subareas of the Tennessee Self-Concept Scale: (1) Total Positive Self, (2) Self Satisfaction, (3) Personal Self, and (4) Family Self. In addition, the group-counseling group showed greater, though insignificant, gains than the individual-counseling group on the following five subareas of the Tennessee Self-Concept Scale: (1) Self Identity, (2) Behavioral Self, (3) Physical Self, (4) Moral/Ethical Self, and (5) Social Self.

These results allowed the researcher to reject the third null hypothesis and conclude that the physically handicapped students who participated in the group counseling sessions showed significantly greater improvement in their self concepts than those physically handicapped students who participated in the individual counseling sessions.

Results of Testing Null Hypothesis Number Four (Ho₄)

The exact form of the null proposition tested in hypothesis number four was as follows:

- Ho₄ There are no statistically significant differences between the pretest self-concept scores (taken from the Tennessee Self-Concept Scale) of physically handicapped college students who attended individual counseling sessions and the posttest self-concept scores (taken from the Tennessee Self-Concept Scale) of the same participants.

The fourth null hypothesis was tested by performing multiple t-tests between the pretest and posttest self-concept scores recorded for those students who participated in the individual counseling sessions during the course of

the experiment. The means and standard deviations computed for the participants' pretest, posttest, and change scores are presented in Table 7, in addition to the t values calculated for each subtest of the Tennessee Self-Concept Scale (TSCS).

The statistical results presented in Table 7 indicate that there were significant differences between the pretest self-concept scores of the individual-counseling group and the posttest self-concept scores recorded for the same group while utilizing the same data collection instrument (the Tennessee Self-Concept Scale). The physically handicapped students who participated in the individual counseling sessions made significant gains on the following subareas of the Tennessee Self-Concept Scale (TSCS): (1) Self Identity and (2) Personal Self. In addition, the individual-counseling group showed gains (not statistically significant) on the following subareas of the TSCS: (1) Total Positive Self, (2) Self Satisfaction, (3) Behavioral Self, (4) Physical Self, (5) Family Self, and (6) Social Self. However, participants showed a slight loss (not statistically significant) on the subarea of Moral/Ethical Self of the TSCS.

These results allowed the researcher to reject the fourth null hypothesis and conclude that the physically handicapped students who participated in the individual counseling sessions made significant improvements in their

TABLE 7
COMPARISONS OF PRETEST AND POSTTEST SELF-CONCEPT SCORES RECORDED
FOR STUDENTS IN THE INDIVIDUAL-COUNSELING GROUP

Subareas of the <u>Tennessee Self-Concept</u> <u>Scale</u>	Pretest Scores		Posttest Scores		Calculated t-Value	Significance Level
	Mean	Standard Deviation	Mean	Standard Deviation		
TOTAL POSITIVE	337.95	25.97	342.75	32.62	0.627	> .05
Self Identity	123.65	10.38	127.95	15.16	2.905	< .01
Self Satisfaction	103.85	14.85	106.30	15.70	1.552	> .05
Behavioral Self	110.45	10.33	111.50	11.81	0.328	> .05
Physical Self	66.15	7.01	67.70	7.39	0.853	> .05
Moral/Ethical Self	70.00	9.70	69.70	9.34	0.185	> .05
Personal Self	63.55	7.79	65.65	8.29	3.297	< .01
Family Self	69.75	8.56	70.45	9.09	0.552	> .05
Social Self	68.70	7.27	69.25	7.05	0.175	> .05

self concepts. While some of these improvements were greater than others, only one area, the Moral/Ethical Self, failed to show improvement.

Results of Testing Null Hypothesis Number Five (Ho₅)

The exact form of the null proposition tested in hypothesis number five was as follows:

Ho₅ There are no statistically significant differences between the pretest self-concept scores (taken from the Tennessee Self-Concept Scale) of physically handicapped college students who attended group counseling sessions and the posttest self-concept scores (taken from the Tennessee Self-Concept Scale) of the same participants.

The fifth null hypothesis was tested by performing multiple t-tests between the pretest and posttest self-concept scores recorded for those students who participated in the group counseling sessions during the course of the experiment. The means and standard deviations computed for the participants' pretest, posttest, and change scores are presented in Table 8, in addition to the t values calculated for each subtest of the Tennessee Self-Concept Scale.

The statistical results presented in Table 8 indicate that there were significant differences between the pretest self-concept scores of the group-counseling group and the posttest self-concept scores recorded for the same group while utilizing the same data collection instrument (the Tennessee Self-Concept Scale). Physically handicapped students who participated in the group counseling sessions made

TABLE 8
COMPARISONS OF PRETEST AND POSTTEST SELF-CONCEPT SCORES RECORDED
FOR STUDENTS IN THE GROUP-COUNSELING GROUP

Subareas of the Tennessee Self-Concept Scale	Pretest Scores		Posttest Scores		Calculated Significance t-Value Level	
	Mean	Standard Deviation	Mean	Standard Deviation		
TOTAL POSITIVE	324.56	43.28	348.89	31.69	3.400	< .01
Self Identity	120.56	9.78	128.44	12.36	3.934	< .001
Self Satisfaction	99.39	12.67	107.06	18.02	3.698	< .001
Behavioral Self	110.17	12.62	113.94	10.84	0.482	> .05
Physical Self	67.44	8.25	70.06	7.17	2.848	< .01
Moral/Ethical Self	71.28	7.03	72.83	7.56	0.796	> .05
Personal Self	62.44	8.27	66.89	10.32	9.082	< .001
Family Self	64.72	8.74	70.44	10.62	1.693	> .05
Social Self	64.78	7.42	67.72	9.37	2.803	< .01

significant gains in the following areas of the Tennessee Self-Concept Scale: (1) Total Positive Self, (2) Self Identity, (3) Self Satisfaction, (4) Physical Self, (5) Personal Self, and (6) Social Self. In addition to these significant gains, the group-counseling group showed gains (not statistically significant) on the following subareas of the TSCS: (1) Behavioral Self, (2) Moral/Ethical Self, and (3) Family Self.

These results allowed the researcher to reject the fifth null hypothesis and conclude that the physically handicapped students who participated in the group counseling sessions made significant improvements in their self concepts. While some of these improvements were greater than others, all areas did show a positive improvement.

Results of Testing Null Hypothesis Number Six (Ho₆)

The exact form of the null proposition tested in hypothesis number six was as follows:

Ho₆ There are no statistically significant differences between the pretest self-concept scores (taken from the Tennessee Self-Concept Scale) of physically handicapped college students who did not attend the individual and group counseling sessions and the posttest self-concept scores (taken from the Tennessee Self-Concept Scale) of the same participants.

The sixth null hypothesis was tested by performing multiple t-tests between the pretest and posttest self-concept scores recorded for those physically handicapped students who did not participate in the individual and

group counseling sessions during the course of the experiment. The means and standard deviations computed for the participants' pretest, posttest, and change scores are presented in Table 9, in addition to the t values calculated for each subtest of the Tennessee Self-Concept Scale.

The statistical results presented in Table 9 indicate that there were significant differences between the pretest self-concept scores of the no-counseling group and the posttest self-concept scores recorded for the same group while utilizing the same data collection instrument (Tennessee Self-Concept Scale). However, these participants showed a general deterioration in their self concepts rather than an improvement. Physically handicapped students who did not participate in individual counseling sessions nor the group counseling sessions showed significant losses on the following areas of the Tennessee Self-Concept Scale: (1) Moral/Ethical Self and (2) Personal Self. In addition to these significant losses, the no-counseling group showed losses (not statistically significant) on the following subareas of the TSCS: (1) Total Positive Self, (2) Self Identity, (3) Self Satisfaction, (4) Physical Self, and (5) Family Self. On the other hand, the no-counseling group showed slight gains (not statistically significant) on the following two subareas of the TSCS: (1) Behavioral Self and (2) Social Self.

TABLE 9
COMPARISONS OF PRETEST AND POSTTEST SELF-CONCEPT SCORES RECORDED
FOR STUDENTS IN THE NO-COUNSELING GROUP

Subareas of the <u>Tennessee Self-Concept</u> <u>Scale</u>	Pretest Scores		Posttest Scores		Calculated t-Value	Significance Level
	Mean	Standard Deviation	Mean	Standard Deviation		
TOTAL POSITIVE	336.60	30.97	333.50	29.42	-0.560	> .05
Self Identity	124.50	12.82	122.75	13.15	-1.008	> .05
Self Satisfaction	103.00	13.37	100.90	14.20	-1.468	> .05
Behavioral Self	108.60	12.28	109.80	9.53	0.554	> .05
Physical Self	67.75	7.59	67.00	7.55	-0.767	> .05
Moral/Ethical Self	68.95	6.13	67.35	5.89	-3.156	< .01
Personal Self	65.85	6.25	64.70	6.28	-3.168	< .01
Family Self	69.20	9.04	68.15	8.99	-1.985	> .05
Social Self	66.00	7.85	66.05	7.36	0.057	> .05

These results allowed the researcher to reject the sixth null hypothesis and conclude that the physically handicapped students who did not participate in either the individual counseling sessions or the group counseling sessions showed a general deterioration in their self concepts during the course of the experiment. While the losses in some areas were more significant than others, seven of the nine subareas of the Tennessee Self-Concept Scale showed a negative trend in the participants' self concepts. While two of the TSCS subareas showed slight improvements, the losses of self esteem experienced by the no-counseling group were obvious.

Summary of Hypothesis Testing Results

The inter-group comparisons made in hypotheses one, two and three showed that both the individual-counseling group and the group-counseling group made significantly greater gains in their self-concept scores than the no-counseling group. In addition, the results presented in Table 6 show that the group-counseling group made significantly greater gains in their self-concept scores than the gains shown by the individual-counseling group.

Comparisons of the three groups' pretest and posttest scores on the TSCS were made in testing hypotheses four, five and six. These comparisons allowed the researcher to examine the gain or loss in the various areas of self concept experienced by the three groups during the course

of the experiment. Statistical results of these hypotheses supported the results shown in testing the first three hypotheses. The group-counseling group showed greater gains than either the individual-counseling group or the no-counseling group. However, the individual-counseling group showed greater gains in self-concept scores than the no-counseling group. In fact, the no-counseling group showed losses in self-concept scores on seven of the nine subareas of the Tennessee Self-Concept Scale. These results are further expanded in the final chapter. Chapter V also contains a cogent summary of the entire experimental study, the obvious conclusions which can be drawn from the results presented in Chapter IV, and several implications for further research studies involving physically handicapped college students.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS FOR FURTHER RESEARCH

The purpose of the present study was to determine the effects of individual and group-counseling techniques on the self concepts of physically handicapped college students. Stated more specifically, the purpose of this study was to determine the effects of individual and group-counseling techniques on nine (9) self-concept scores (as measured by the Tennessee Self-Concept Scale) of physically handicapped students enrolled at a public four-year college during eight weeks of the 1973-74 academic year.

It had been established earlier that enhancement of the physically handicapped students' self concepts would also increase their academic achievement, peer group relationships, and general attitudes. The Tennessee Self-Concept Scale was administered to all participants at the beginning of the study (pretest) and again eight weeks later (posttest).

Individual-counseling sessions were conducted for one (1) hour per week during the eight-week experiment. Group-counseling sessions were conducted for one and one-half ($1\frac{1}{2}$) hours per week for the same number of weeks. The Tennessee

Self-Concept Scale was administered to eighteen (N=18) students chosen for group-counseling sessions, twenty (N=20) students chosen for individual-counseling sessions, and twenty (N=20) students chosen as a control group.

Scores from nine (9) subareas of the test were compared to test six (6) hypotheses. A Student's t-test was the primary testing statistic used. It was hypothesized that individual and group-counseling sessions conducted for the physically handicapped college students would enhance their self esteem (self concepts) much more than the self enhancement experienced by physically handicapped college students who did not participate in the individual and group-counseling sessions.

Results of testing the hypotheses showed that both the individual-counseling group and the group-counseling group made significantly greater gains in their self-concept scores than the no-counseling group. In addition, the group-counseling group made significantly greater gains in their self-concept scores than the gains shown by the individual-counseling group.

Comparisons of the three groups' pretest and posttest self-concept scores taken from the TSCS were made. Results showed that the group-counseling group showed greater gains than either the individual-counseling group or the no-counseling group. However, the individual-counseling group showed greater gains in their self-concept scores than the

no-counseling group. In fact, the no-counseling group showed losses in self-concept scores on seven of the nine (9) subareas of the Tennessee Self-Concept Scale. The conclusions drawn from these results are presented in the following sections.

CONCLUSIONS

The conclusions presented in this section are the major conclusions which could be defensibly drawn from the results obtained while testing the hypotheses. It should be noted that only one major conclusion has been drawn from the results of each hypothesis. The generalization of the results obtained in the present study should be approached with caution until more research has been conducted in the area.

CONCLUSION #1: From the results derived from testing hypothesis number one, it was concluded that individual-counseling techniques can be successfully used with physically handicapped college students as a means of aiding the student in raising his self concept and increasing his self esteem.

This suggests the value of an adult whom the student regards as a "significant other" fully accepting the student with no judgment, only compassion and empathy and helping the student to develop the courage to face his true

self, as he grows toward maturity and self acceptance.

CONCLUSION #2: From the results derived from testing hypothesis number two, it was concluded that group-counseling techniques can be successfully used as a means of aiding the physically handicapped college student in raising his feelings of positive self acceptance and self esteem.

This conclusion suggests the value of a student, a group of peers, and a counselor meeting together in a therapeutic, accepting, and helping atmosphere. Through group activities, participants learn to accept others and themselves more readily.

CONCLUSION #3: From the results derived from testing hypothesis number three, it was concluded that group-counseling techniques with physically handicapped college students among peers and a professional counselor can be more successfully used as a means of aiding the student in raising his feelings of positive self acceptance and self esteem than can the individual counseling of one student by a professional counselor.

This suggests that when a counselor enlists the aid of a student peer group in a counseling setting for the physically handicapped students an atmosphere which suggests

peer acceptance and support is most conducive to the growth of self esteem and feelings of self worth. It can be further concluded that as a handicapped student gains more acceptance with a counselor and/or his peers, this feeling of acceptance can aid him in his own self acceptance and the acceptance of others.

CONCLUSION #4: From the results derived from testing the fourth null hypothesis, it was concluded that individual-counseling techniques can be successfully used with the physically handicapped college students to increase their positive feelings toward themselves.

Students in the individual-counseling group showed more positive change in their self concepts than the non-counseled group but they also showed a marked improvement from the pretest self-concept scores to the posttest self-concept scores. This suggests further that individual positive growth can be facilitated through one-to-one counseling sessions with an accepting, non-judgmental counselor.

CONCLUSION #5: From the results derived from testing hypothesis number five, it was concluded that group-counseling techniques can be successfully used with college students

who are physically handicapped in helping them to increase their positive feelings toward themselves and others.

Physically handicapped students in the group-counseling group not only showed more positive change in their self concepts than students in the individual-counseling group and the non-counseling group, they also showed dramatic improvements between their pretest self-concept scores and their posttest self-concept scores. This type of counseling technique further suggests that individuals give and receive help not only from the counselor but also from other group members.

CONCLUSION #6: From the results derived from testing the sixth null hypothesis, it was concluded that physically handicapped college students need the support of peers and/or a counselor in order to maintain or improve their self-concepts.

Physically handicapped college students who did not participate in either group- or individual-counseling groups experienced losses in their self esteem. This further suggests that a handicapped student on a college campus who is not enrolled in a program or activity which provides contact with a representative of the institution who will take the time to listen, give information, help, care, offer

acceptance and assistance may experience self devaluation and lowered self esteem as he attempts to succeed in the college environment.

IMPLICATIONS FOR FURTHER RESEARCH

Many research possibilities became apparent during the conduct of the present study. Some of these are mentioned in the following sections.

A follow-up study could be conducted with these same physically handicapped students who participated in the present study in order to determine whether the self-concept growth patterns observed in the present study remain stable over a prolonged period of time. The results of such a study would give some indication of the feasibility of a follow-up program for the physically handicapped college student.

A replication of the present study could also be done with slight changes in the experimental treatments. The individual and group-counseling sessions could be conducted in shorter sessions and at more frequent intervals. For instance, the individual counseling sessions could be conducted as two thirty-minute sessions per week instead of one one-hour session as in the present study. It is possible that by increasing the number of sessions and decreasing the amount of time spent in each session that more areas of self concept could be considered in the

training program being conducted by the rehabilitation office.

Replication of the present study could also be done by matching physically handicapped students on the variables of sex, age, physical disability (type and degree), and mental ability. The results of such a study would provide information about the effects of short term counseling on a wide range of other variables usually associated with the student's academic progress in college.

Further studies could also be conducted in which the self-concept scores of physically handicapped and the self-concept scores of the non-physically handicapped college students were compared. Information from such a study would provide possible guidelines for the development of curricula specifically designed for the physically handicapped college student.

Perhaps the area of research which should receive the most attention in the immediate future would be to determine the academic success (defined in measurable terms) and retention rates of physically handicapped college students who participated in the present study and/or similar projects in other colleges and universities. Academic success could be defined in terms of a number of variables such as; (1) overall grade-point average, (2) whether the student graduated or not, (3) number of social organizations the

belongs to, (4) popularity with other students as well as instructors, etc. Information from such a study would certainly help educators arrive at defensible solutions to the problems associated with physically handicapped college students.

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APPENDIX A

THE TENNESSEE SELF-CONCEPT SCALE

TENNESSEE

(Department of Mental Health)

SELF CONCEPT SCALE

by

William H. Fitts, PhD.

Published by

Counselor Recordings and Tests

Box 6184 - Acklen Station Nashville, Tennessee 37212

INSTRUCTIONS

On the top line of the separate answer sheet, fill in your name and the other information except for the time information in the last three boxes. You will fill these boxes in later. Write only on the answer sheet. Do not put any marks in this booklet.

The statements in this booklet are to help you describe yourself as you see yourself. Please respond to them as if you were describing yourself to yourself. Do not omit any item! Read each statement carefully, then select one of the five responses listed below. On your answer sheet, put a circle around the response you chose. If you want to change an answer after you have circled it, do not erase it but put an X mark through the response and then circle the response you want.

When you are ready to start, find the box on your answer sheet marked time started and record the time. When you are finished, record the time finished in the box on your answer sheet marked time finished.

As you start, be sure that your answer sheet and this booklet are lined up evenly so that the item numbers match each other.

Remember, put a circle around the response number you have chosen for each statement.

Responses-	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

You will find these response numbers repeated at the bottom of each page to help you remember them.

Page 1						Item No.
1. I have a healthy body.....						1
3. I am an attractive person.....						3
5. I consider myself a sloppy person.....						5
19. I am a decent sort of person.....						19
21. I am an honest person.....						21
23. I am a bad person.....						23
37. I am a cheerful person.....						37
39. I am a calm and easy going person.....						39
41. I am a nobody.....						41
55. I have a family that would always help me in any kind of trouble.....						55
57. I am a member of a happy family.....						57
59. My friends have no confidence in me.....						59
73. I am a friendly person.....						73
75. I am popular with men.....						75
77. I am not interested in what other people do.....						77
91. I do not always tell the truth.....						91
93. I get angry sometimes.....						93
Responses-	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true	
	1	2	3	4	5	

Appendix A (Cont'd)

Page 2						Item No.
2. I like to look nice and neat all the time.....						2
4. I am full of aches and pains.....						4
6. I am a sick person.....						6
20. I am a religious person.....						20
22. I am a moral failure.....						22
24. I am a morally weak person.....						24
38. I have a lot of self-control.....						38
40. I am a hateful person.....						40
42. I am losing my mind.....						42
56. I am an important person to my friends and family.....						56
58. I am not loved by my family.....						58
60. I feel that my family doesn't trust me.....						60
74. I am popular with women.....						74
76. I am mad at the whole world.....						76
78. I am hard to be friendly with.....						78
92. Once in a while I think of things too bad to talk about.....						92
94. Sometimes, when I am not feeling well, I am cross.....						94
Responses-	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true	
	1	2	3	4	5	

Page 3						Item No.
						7
7. I am neither too fat nor too thin.....						9
9. I like my looks just the way they are.....						11
11. I would like to change some parts of my body.....						25
25. I am satisfied with my moral behavior.....						27
27. I am satisfied with my relationship to God.....						29
29. I ought to go to church more.....						43
43. I am satisfied to be just what I am.....						45
45. I am just as nice as I should be.....						47
47. I despise myself.....						61
61. I am satisfied with my family relationships.....						63
63. I understand my family as well as I should.....						65
65. I should trust my family more.....						79
79. I am as sociable as I want to be.....						81
81. I try to please others, but I don't overdo it.....						83
83. I am no good at all from a social standpoint.....						95
95. I do not like everyone I know.....						97
97. Once in a while, I laugh at a dirty joke.....						
Responses-	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true	
	1	2	3	4	5	

Page 4					Item No.
8.	I am neither too tall nor too short.....				8
10.	I don't feel as well as I should.....				10
12.	I should have more sex appeal.....				12
26.	I am as religious as I want to be.....				26
28.	I wish I could be more trustworthy.....				28
30.	I shouldn't tell so many lies.....				30
44.	I am as smart as I want to be.....				44
46.	I am not the person I would like to be.....				46
48.	I wish I didn't give up as easily as I do.....				48
62.	I treat my parents as well as I should (Use past tense if parents are not living).....				62
64.	I am too sensitive to things my family say.....				64
66.	I should love my family more.....				66
80.	I am satisfied with the way I treat other people.....				80
82.	I should be more polite to others.....				82
84.	I ought to get along better with other people.....				84
96.	I gossip a little at times.....				96
98.	At times I feel like swearing.....				98
Responses -	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

	Page 5	Item No.
13. I take good care of myself physically.....		13
15. I try to be careful about my appearance.....		15
17. I often act like I am "all thumbs".....		17
31. I am true to my religion in my everyday life.....		31
33. I try to change when I know I'm doing things that are wrong.....		33
35. I sometimes do very bad things.....		35
49. I can always take care of myself in any situation.....		49
51. I take the blame for things without getting mad.....		51
53. I do things without thinking about them first.....		53
67. I try to play fair with my friends and family.....		67
69. I take a real interest in my family.....		69
71. I give in to my parents. (Use past tense if parents are not living).....		71
85. I try to understand the other fellow's point of view.....		85
87. I get along well with other people.....		87
89. I do not forgive others easily.....		89
99. I would rather win than lose in a game.....		99

Responses -	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

	Page 6	Item No.
14. I feel good most of the time		14
16. I do poorly in sports and games		16
18. I am a poor sleeper		18
32. I do what is right most of the time		32
34. I sometimes use unfair means to get ahead		34
36. I have trouble doing the things that are right		36
50. I solve my problems quite easily		50
52. I change my mind a lot		52
54. I try to run away from my problems		54
68. I do my share of work at home		68
70. I quarrel with my family		70
72. I do not act like my family thinks I should		72
86. I see good points in all the people I meet		86
88. I do not feel at ease with other people		88
90. I find it hard to talk with strangers		90
100. Once in a while I put off until tomorrow what I ought to do today		100

Responses-	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

APPENDIX B

**THE PRETEST, POSTTEST, AND CHANGE SCORES FROM NINE SUBAREAS
AND THE TOTAL OF THE TENNESSEE SELF-CONCEPT SCALE AS
RECORDED FOR THE PHYSICALLY HANDICAPPED STUDENTS
IN THE THREE COUNSELING GROUPS (N=58)**

TABLE 10

THE PRETEST, POSTTEST, AND CHANGE SCORES FROM NINE SUBAREAS AND THE TOTAL OF THE
TENNESSEE SELF-CONCEPT SCALE AS RECORDED FOR THE PHYSICALLY HANDICAPPED
 COLLEGE STUDENTS IN THE INDIVIDUAL-COUNSELING GROUP (N=20).

TOTAL			Self Identity			Self Satisfaction			Behavioral Self			Physical Self			Moral/Ethical Self			Personal Self			Family Self			Social Self		
Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff
313	305	-8	112	122	10	77	93	-4	104	90	-14	64	66	2	58	59	1	59	55	-4	70	64	-6	63	61	-2
379	359	-20	134	128	-6	122	113	-9	114	118	4	64	70	6	77	76	-1	70	68	-2	77	82	5	82	73	-9
356	379	23	138	137	-1	100	114	14	118	119	1	79	80	1	72	71	-1	62	71	9	71	78	7	72	70	-2
333	324	-9	127	117	-10	100	101	1	106	104	-2	68	60	-8	63	61	-2	68	68	0	69	69	0	65	66	1
366	376	10	139	140	1	113	119	6	114	117	3	61	68	7	77	77	0	78	77	-1	73	79	6	72	75	3
322	304	-18	123	117	-6	98	91	-7	101	96	-5	66	58	-8	56	57	1	59	59	0	68	72	4	73	58	-15
273	322	49	123	118	-5	84	103	19	96	101	15	55	65	10	62	64	2	57	57	0	65	71	6	54	65	11
329	337	8	121	142	21	85	111	26	114	136	22	66	74	8	77	78	1	48	75	27	69	79	10	60	83	23
371	382	11	126	133	7	126	131	5	119	118	-1	74	78	4	83	88	5	65	71	6	81	75	-6	68	70	2
360	400	40	107	129	20	122	140	18	129	131	2	64	71	7	73	84	11	65	80	15	60	82	22	78	83	5
343	356	13	129	135	6	105	108	3	109	113	4	71	76	5	61	65	4	67	69	2	69	73	4	75	73	-2
326	307	-19	123	113	-10	97	91	-6	106	105	-1	68	67	-1	69	57	-12	59	56	-3	62	62	0	68	67	-1
322	324	2	121	124	3	98	93	-5	103	107	4	52	60	8	79	70	-9	64	61	-3	71	70	-1	56	63	7
391	374	-17	136	133	-3	125	117	-8	130	124	-6	70	60	-10	87	75	-12	74	73	-1	83	82	-1	77	74	-3
356	363	7	137	131	-6	101	113	12	118	124	6	66	72	6	72	75	3	68	71	3	73	73	0	77	77	0
331	314	-17	113	117	4	110	96	-14	108	101	-7	68	60	-8	53	58	5	68	62	-6	76	72	-4	66	62	-4
314	307	-7	124	126	2	80	78	-2	110	105	-5	61	62	1	64	65	1	62	60	-2	59	54	-5	68	66	-2
317	301	-16	119	107	-12	81	84	3	117	110	-7	73	74	1	65	62	-3	45	48	3	66	57	-9	68	60	-8
305	322	17	99	111	12	109	109	0	97	102	5	56	56	0	68	72	4	68	69	1	47	54	7	66	71	5
359	347	-12	120	177	57	124	121	-3	106	109	3	77	77	0	84	80	-4	65	63	-2	61	61	0	63	66	3
$\bar{X} = 317.9$			123.7	123.9	4.3	103.9	106.3	2.5	110.5	111.5	0.8	66.2	67.7	1.6	70.0	69.7	-0.3	63.6	65.6	2.1	69.8	70.5	0.7	68.7	69.3	0.6
$SD = 25.9$			10.4	15.2	5.4	14.9	15.7	5.6	10.3	11.8	8.0	7.0	7.4	6.0	9.7	9.3	5.7	7.8	8.3	3.6	8.6	9.1	5.0	7.3	7.1	7.9

TABLE 11

THE PRETEST, POSTTEST, AND CHANGE SCORES FROM NINE SUBAREAS AND THE TOTAL OF THE
TENNESSEE SELF-CONCEPT SCALE AS RECORDED FOR THE PHYSICALLY HANDICAPPED
 COLLEGE STUDENTS IN THE GROUP-COUNSELING GROUP (N=18)

TOTAL			Self Identity			Self Satisfaction			Behavioral Self			Physical Self			Moral/Ethical Self			Personal Self			Family Self			Social Self		
Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff
289	382	93	117	140	23	88	122	34	84	120	36	65	76	11	62	70	8	51	72	21	57	81	24	54	83	29
317	344	27	112	128	16	92	106	14	113	110	-3	63	70	7	76	79	3	49	60	11	66	76	10	63	59	-4
311	355	44	111	132	21	99	114	15	101	109	8	48	62	14	73	76	3	64	71	7	67	80	13	59	66	7
333	353	20	119	122	3	103	118	15	111	113	2	76	74	-2	69	74	5	66	70	4	62	70	8	60	65	5
369	345	-24	131	133	2	102	91	-11	136	121	-15	75	71	-4	80	66	-14	73	70	-3	76	81	5	65	57	-8
344	357	13	121	126	5	111	112	1	112	119	7	72	71	-1	66	70	4	69	69	0	65	75	10	72	72	0
308	293	-15	126	131	5	80	63	-17	102	99	-3	63	58	-5	71	70	1	54	60	6	66	54	-12	54	54	0
371	406	35	126	136	10	127	142	15	118	128	10	71	82	11	82	85	3	69	77	8	67	77	10	82	85	3
279	294	15	113	103	-10	74	92	18	92	99	7	61	62	1	60	58	-2	53	31	-22	51	57	6	54	56	2
360	365	5	135	141	6	102	109	7	123	115	-8	76	77	1	68	72	4	77	74	-3	74	72	-2	65	70	5
319	358	39	115	134	19	100	130	30	104	104	0	64	74	10	71	78	7	51	66	15	68	83	15	65	67	2
298	303	5	101	110	9	100	86	-14	97	107	10	55	55	0	82	75	-7	61	67	6	41	44	3	59	62	3
323	349	26	118	137	19	93	94	1	112	118	6	64	74	10	62	68	6	68	72	4	64	67	3	65	68	3
344	307	-37	125	105	-20	112	108	-4	107	94	-13	76	63	-13	65	61	-4	68	59	-9	64	64	0	71	60	-11
353	361	8	125	117	-8	112	123	11	116	121	5	77	73	-4	70	74	4	58	67	9	79	79	0	69	68	-1
347	382	35	108	141	33	110	111	1	129	130	1	68	74	6	82	83	1	64	74	10	70	76	6	73	75	2
349	346	-3	139	133	-6	95	101	6	115	112	-3	77	75	-2	70	67	-3	69	71	2	66	65	-1	67	68	1
328	380	52	128	143	15	89	105	16	111	132	21	63	70	7	74	85	11	60	74	14	62	67	5	69	84	15
$\bar{X} = 324.6$			120.6	123.4	7.9	99.4	107.1	7.7	110.2	113.9	3.8	67.4	70.1	2.6	71.3	72.8	1.6	62.4	66.9	4.5	64.7	70.4	5.7	64.8	67.7	2.9
SD = 43.3			9.8	12.4	6.3	12.7	18.0	6.4	12.6	10.8	11.9	8.3	7.2	4.3	7.0	7.6	5.9	8.3	10.3	3.1	8.7	10.6	7.8	7.4	9.4	4.6

TABLE 12

THE PRETEST, POSTTEST, AND CHANGE SCORES FROM NINE SUBAREAS AND THE TOTAL OF THE
TENNESSEE SELF-CONCEPT SCALE AS RECORDED FOR THE PHYSICALLY HANDICAPPED
 COLLEGE STUDENTS IN THE NO-COUNSELING GROUP (N=20)

TOTAL			Self Identity			Self Satisfaction			Behavioral Self			Physical Self			Moral/Ethical Self			Personal Self			Family Self			Social Self		
Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff
257	255	-4	100	98	-2	96	96	0	93	91	-2	62	63	1	53	53	-3	61	59	-2	55	56	1	59	57	-1
376	373	-3	133	135	-3	118	118	0	120	120	0	70	70	0	71	71	0	75	75	0	80	77	-3	80	80	0
361	356	-5	129	133	4	117	111	-6	115	112	-3	62	65	3	71	73	-1	75	67	-8	84	82	-2	67	72	3
276	276	-20	117	97	-20	92	82	-10	87	97	10	60	54	-6	63	57	-6	56	55	-1	58	53	-3	57	55	-4
324	322	-2	123	125	2	91	91	0	110	106	-4	70	73	3	65	63	-2	60	60	0	63	63	0	66	63	-3
311	311	0	90	97	7	120	114	-6	101	100	-1	56	64	8	65	70	5	68	62	-6	60	56	-4	62	57	-3
315	310	-5	123	123	0	91	88	-3	101	99	-2	57	57	0	67	66	-1	62	62	0	65	61	-4	64	64	0
366	366	0	133	126	-7	117	121	4	116	119	3	73	70	-3	76	74	-2	69	68	-1	79	81	2	69	73	4
276	272	16	116	111	-5	79	77	-2	81	104	23	57	52	-5	64	62	-2	54	53	-1	60	64	4	64	61	-3
303	329	21	120	127	7	84	91	7	104	111	7	63	69	6	72	69	-3	57	59	2	62	64	4	54	66	12
364	352	-12	135	128	-7	105	105	0	124	119	-5	70	70	0	76	73	-3	69	69	0	76	70	-6	73	70	-3
323	331	6	129	129	0	96	100	4	100	102	2	62	62	0	68	68	0	69	69	0	71	70	-1	55	62	7
370	356	-14	138	139	1	109	102	-7	123	115	-8	82	75	-7	64	63	4	67	66	-1	75	70	-5	82	77	-5
357	357	0	125	125	0	109	109	0	123	123	0	76	75	-1	72	72	0	71	71	0	81	81	0	57	53	1
338	338	0	135	137	2	84	80	-4	119	121	2	75	77	2	69	66	-3	62	62	0	67	67	0	65	66	1
373	373	0	138	137	-1	119	119	0	121	122	1	79	80	1	75	74	-1	67	67	0	81	81	0	76	76	0
330	324	-6	112	112	0	112	106	-6	106	106	0	68	65	-3	69	69	0	66	65	-1	57	57	0	70	68	-2
334	334	0	124	120	-4	103	106	3	107	108	1	68	68	0	67	67	0	68	73	5	70	67	-3	61	57	-2
341	316	-25	135	129	-6	99	83	-16	107	103	-4	71	60	-11	70	66	-4	65	65	0	70	64	-6	65	61	-4
373	364	-9	130	127	-3	119	119	0	114	118	4	74	71	-3	82	72	-10	76	72	-4	70	75	5	71	74	3
$\bar{X} = 336.5$			124.5	122.8	-1.8	103.0	100.9	-2.1	108.6	109.8	1.2	67.8	67.0	-0.8	68.9	67.4	-1.6	65.9	64.7	-1.2	69.2	68.2	-1.1	66.8	66.1	0.1
SD = 30.9			12.8	13.2	5.9	13.4	14.2	5.4	12.3	9.5	6.6	7.6	7.6	4.4	6.1	5.9	3.2	6.3	6.3	2.7	7.0	8.9	3.3	7.9	7.4	4.2