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SELF CONCEPT CHANGES IN COLLEGE FRESHMEN

WOMEN IN A BASIC PHYSICAL EDUCATION

COURSE USING TWO METHODS

OF INSTRUCTION

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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* * * * * *

The Ohio State University
1968

Approved by

Advisor

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To Shakespeare must go the credit for the original interest in Self Concept.

This above all:

To thine ownself be true, And it must follow as night the day Thou canst not then be false to any man.
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CHAPTER I

INTRODUCTION

With the shocking realization of Sputnik, our country was launched in the pursuit of an educational program that emphasized subject matter, intellectualism, and science. Our students, who were to become leaders of tomorrow, had to be able to compete with the world in all scientific endeavors. Now that the humiliating crisis is a matter of history and the results of the ensuing "knowledge explosion" can be evaluated, it seems inevitable that the next educational innovation would have to point toward a more humanistic approach. Educators are engaged in returning to the American ideal of placing the well being of the individual at the center of educational planning. The emphasis of using traditional subject matter fields to achieve objectives in the cognitive domain is broadening to include objectives in the affective domain as well,\(^1\) for does a human being ever think without feeling or act without thinking? Such a philosophy "liberates us to go beyond this now-question of what our children and youth should learn to the real question of what persons they should be."\(^2\)


Learning situations should be provided that not only confront the student with concrete, symbolic data but also prepare settings that will motivate him to behave creatively in a complex, frustrating society. Many educators are advocating problem-solving and "process thinking" as necessary methods of instruction to develop one's creative potential. The emphasis toward individualism is the humanistic approach—"a way of life centered upon human interests or values."¹

Every educator, who is a truly dedicated person, is vitally interested in his students as individual selves, physically, socially, and mentally. If our entire system of education is grounded in the basic concept of individualism, one of the prime concerns of educators should be the role they play in helping young people develop and understand their self concepts. At the present time here and throughout the world there is a definite movement to know and to understand the "self" more fully. The domain of self psychology is broad and includes a variety of theories which deal with the central role of the self. Some of these theorists (e.g., Rogers, Lecky, Combs, Snygg, Maslow, Kelly) have been called phenomenological theorists because of their stress on the role of the conscious self concept in determining a person's behavior.² The word "self" is used here as the self of awareness, the phenomenal self, the personal embodiment of conscious goals, values, and attitudes. Rogers and Maslow have described "the


fully adequate person" and "the fully functioning personality" as one who has a good self concept and is happier, more well adjusted, and more productive.¹

Self theorists are concerned about the discrepancy that exists between the actual self and the ideal self as a possible basis for behavioral patterns. The concern for self perception with all its contributing attributes and potentials is rapidly becoming a central focus of contemporary psychological inquiries.² One aspect of self perception holding considerable promise has to do with studies of body image, for the way in which one perceives his body gives hints as to one's self concept,³ a concern especially important for physical educators. Jersild has pointed out that

there is a tremendous need for doing something in our physical education programs to help college women acquire realistic attitudes of self acceptance. A large proportion of our young women now entering adulthood are burdened with anxiety and defensive attitudes toward themselves and others.⁴

It is important that students gain more insight into their physical self images, form health concepts concerning their bodies and relate these concepts to other aspects of their lives. Unfortunately, there


has been limited research dealing with the concept one has of one's body in relation to the concept one has of one's self. It should be established whether knowledge concerning one's physical image does affect self concept changes and in a desirable direction.

"The most intimate and decisive aspects of learning are in the domain of attitudes and emotion."¹ The child from an early age, without being deliberate about it, acquires ideas and concepts about himself and others. These concepts become woven into the pattern of his life, and they may be healthy, false, or unrealistic. Whether formal educational methods and procedures can significantly affect the values and concepts of students deserves vital attention because research studies have shown that traditional procedures have not had a great impact on favorably changing beliefs, prejudices, values, and attitudes; these personality factors appear to show resistance to change. Any matter having such educational relevance should lead to investigation of important queries. Physical educators should be concerned with methods that will focus on affecting and changing the self-concept.

One method which has not been thoroughly investigated as to its effectiveness in the area of self-concept changes is the utilization of instructional television. It has already been established through numerous studies (over four hundred) that instructional television is an effective medium for acquisition of knowledge. Evidence is needed, however, to show that in college and university courses television does work toward a substantial improvement in the quality of education and

does not exist merely as "talking textbooks" which aim to cover rather than uncover subject matter. Research should be geared to substantiating the fact that television is or is not effective in the process of self-concept learning and concept change. If this information were available, physical educators could teach more effectively and thereby meet student needs more adequately.

Statement of the Problem

It was the purpose of this study to investigate self-concept changes in freshmen college women using two methods of instruction in a basic physical education course. It was designed to compare the use of instructional television with the traditional methods of lecture and discussion in changing self concept. The hypotheses as stated in null form were:

1. There is no significant different in self-concept changes between a group of college freshmen women enrolled in a televised basic physical education course and a group of college freshmen women enrolled in a non-televised basic physical education course.

2. There is no significant difference in self-concept changes between a group of college freshmen women enrolled in a televised basic physical education course and a group of college freshmen women not involved in a basic physical education course in any way.

3. There is no significant difference in self-concept changes between a group of college freshmen women enrolled in a non-televised

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course and a group of college freshmen women not enrolled in the basic physical education course.

Purpose of the Study

At Kent State University all freshmen women are required to take a fundamental course in physical education during their first quarter on campus. This study grew out of a need to evaluate the present methods and procedures used in teaching Health and Physical Education 130, basic course for women, titled "Foundations for Fitness."

For the past three years the major portion of the theoretical and conceptual content in H.P.E. 130 has been presented by television video tapes via a closed circuit system. The class meets two times a week, one of which is devoted to televised teaching. The length of the television lessons averages twenty-five minutes, leaving ten minutes for the classroom teacher to discuss and answer questions.

The content presented by television has been geared to meeting the major objective of the course: "to develop an awareness and encourage the understanding of one's physical self image, its potential, and its relationship to sociological and psychological implications."¹

Ten video tapes are shown exploring the following topics:

1. Definition of terms, physical self image, body image: statement of objectives of course

2. Relaxation and the part it plays in our physical structure

3. Flexibility--its significance to fitness and movement

¹Syllabus, H.P.E. 130, Division of Health, Physical Education, Recreation, and Athletics (Kent State University, Mimeographed 1960).
4. Strength—as a basic component of fitness and movement
5. Cardiovascular efficiency—role it plays in vigor and vitality
6. Posture—role it plays in self image concept
7. Balance—as an underlying basis for efficient movement
8. Principles of movement—for a basic understanding of levers, gravity, force, power
9. Weight control—as basis for optimal performance and appearance in dealing with one's self concept
10. Rhythm—as the epitome of effective, efficient movement

Recently an evaluation was completed dealing with all aspects of H.P.E. 130. One of the major questions evolving from the report was whether television should be continued or eliminated. The question was raised whether the use of video tapes is effective in changing the self concept of freshmen women. The results of this study will help in planning future action.

Limitations of the Study

The results of this self-concept study will be interpreted with recognition that certain limitations were inherent throughout the experiment.

1. The women subjects involved in the study were not drawn from the total student population of Kent State University. The sample included only first quarter freshmen women who were enrolled in the basic physical education course. In addition the subjects were taken only from the 2 P.M. and 3 P.M. classes.
2. The results obtained pertain only to the students enrolled in those particular classes which were instructed by one person. The same instructor taught both classes and also was the television teacher. The students, therefore, were exposed to one instructor. In no way did the study predict or evaluate changes for HPE 130 students other than those involved in the experimental groups.

3. Results of the Q-sort were not analyzed in detail to determine whether the changes that occurred were due to a change in the student's concept of her perceived self or in the ideal self. Generalizations were made only on the basis of the change in discrepancies of correlations based on pre and post tests.

4. The pre and post tests were based on the instrument known as Q-sort, and results were subject to limitations associated with that particular instrument.

5. The experimental study extended over just an eleven week period, the time of a full fall quarter of academic work. Results were based on that period of time—from pre-test to post-test.

6. The control subjects were selected only from specific sports classes—swimming, volleyball, and badminton. Because there were so many basic courses offered, the number of sports offered fall quarter was limited.
Definition of Terms

1. **Body concept**: the systematic impression an individual has of his body, cognitive and affective, conscious and unconscious formed in the course of growing up.¹

2. **Body image**: refers to the body as a psychological experience and focuses on the individual's feelings and attitudes toward his own body.²

3. **Educational television**: implies the operation of a non-commercial broadcast television which provides continuing education service for its community (ETV).

4. **Instructional television**: principal instruction is provided by the television teacher and followed up by a classroom teacher, but all the teaching is done in conjunction with television. ITV lessons can be transmitted either by open circuit broadcast or by a closed circuit facility.

5. **Personality**: a person studied psychologically or as a unique whole; the self, the psyche, the psychological individual.³

6. **Q-sort**: a personality inventory in which a subject sorts a large number of items into piles which are arranged on a continuum according to the degree to which they are characteristic of the subject's self. The subject is forced by the instructions to place specific number of items in each pile so as to yield a quasi-normal distribution of items. Subject then sorts the same items according to the ideal for himself.⁴


7. **Q-technique or methodology:** a procedure for correlating persons instead of tests. A person's scores are correlated on the same test but at different times.¹

8. **Self concept:** "an organized, fluid but consistent pattern of self perceptions which are admissible to awareness and the values attached to these perceptions."² Theorists endorsing this view are listed by Wylie.³

   - **Ideal self:** the individual a person would like to be
   - **Other self:** what an individual believes others think he is
   - **Perceived self or cognized self:** what the individual perceives and conceives himself to be
   - **Real self:** what the individual actually is

9. **Self-esteem:** congruence between self and ideal self; being proud of one's self or evaluating one's attributes highly. Another term that refers to congruence is discrepancy relationship. (Note: some authors refer to a person's evaluation of his own worth, adequacy and competence by using the following terms as synonyms: self regard, self satisfaction, self respect, self esteem, self acceptance.)

**Significance of Study**

Little research has been done by physical educators in the area of the self concept and how it relates to the physical self image or body image. Is it not time to recognize that physical education courses at the college level should be re-evaluated as to their objectives and how they pertain to modern-day living? There is a need for studies to be completed in physical education that establish whether body image does play an important role in the total self concept development of college women.

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³Wylie, *op. cit.*, p. 3.
The author could find no research in which television was used as a medium in changing the self concept of college women. Certainly the need for studies evaluating the worth of all modern media is essential.

The entire realm of self psychology needs to be explored as it relates to physical education. Such information would be useful to researchers in both physical education and psychology in their efforts to evaluate methods and materials helpful in developing each individual to his fullest capacity or self-actualization. It is hoped that this study will provide incentive for further research in the area of the self concept and its pertinence to the objectives of physical education.
Due to the nature of this study, it was necessary to delve into the literature regarding several different topics all relevant to some specific aspect of the problem.

The review of literature, in keeping with the problem, will be divided into sections, each dealing with pertinent research related to the following topics: (1) the self-concept, (2) body image, (3) Q-sort and (4) instructional television. Each area represents a subject well researched and well documented in literature. It was necessary to limit the review to specific information having significant reference to some segment of the study.

Self Concept

Throughout timeless ages, man has been intrigued by the question—who, what, and why am I? It is a question as old as the human race and goes back to the time when man first began to think, to dream, and to question. It has always been the search for meaning that has driven man incessantly to try to comprehend reality. The search for meaning is essentially a search for self.

In psychological discussions the word "self" has been used many different ways, but generally two meanings have emerged: the self as subject or agent, and the self as the individual who is known to himself or as object. "Self-concept" has come into common use when
referring to the second meaning. Whereas the first theory, referred to by Kaplan\(^1\) as the psychoanalytic theory, emphasizes the unconscious interplay of three psychic forces—the id, ego, and superego, the second theory emphasizes the conscious awareness of an individual about himself. The latter has been referred to as the genetic theory of self development and stresses growth, maturation, and experiences through which the self-image, self-ideal, and self-role evolve.\(^2\)

The self-as-object refers to a person's attitudes, feelings, perceptions, and evaluations about himself as an object. Other terms which hold the same connotation are perceptual self, self of awareness, or the phenomenal self. Developmental theorists have agreed that the self concept begins to form in infancy, expands during childhood, is reformed in adolescence, and assumes a relatively stable form during postadolescence.\(^3\)

The theoretical rationale used throughout this study is based on Carl Rogers' definition of the self concept and on the propositions of his theory of personality and behavior (see appendix for propositions).

The self structure is an organized configuration of perceptions of the self which are admissible to awareness. It is composed of such elements as the perceptions of one's characteristics and abilities; the percepts and concepts of the self in relation to others and to the

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\(^2\)Ibid., p. 145.

\(^3\)Ibid., p. 144.
environment; the value qualities which are perceived as associated with experiences and objects; the goals and ideals which are perceived as having positive or negative valence.\(^1\)

The concept of the phenomenal self is closely related to the empirical data of behavior and also to the theoretical aspects of personality; therefore, it assumes great importance for educators. The time-honored value of self development has been recognized implicitly and explicitly as a fundamental aim of American education.

This aim, as part of man's historical search for self, has driven him through centuries of anxiety-ridden and turbulent struggles and given form to the ideas of the individual's uniqueness, dignity, and freedom.\(^2\)

It has been established that the self concept is learned. People discover who they are and what they are from the ways in which they have been treated by those around them in the process of growing up.

Outside the child's own family, no institution in our society is in a better position to affect the growth and development of an individual's self concept than our public schools. Educators must know what kinds of self concepts are desirable and then set about the business of exploring types of curricula and methods of instruction likely to produce them.\(^3\)

Vast mountains of research have provided us with information about education and its processes as seen from an outside observer. We have

\(^1\)Rogers, op. cit., p. 498.


\(^3\)Arthur Combs, "New Horizons in Field Research: The Self Concept." Educational Leadership (Ed.) Alexander Frazier (Vol. XV No. 3).
practically none in which the curriculum has been studied from the point of view of the learner.\(^1\)

It is the fully-functioning, self actualizing personality that is described as adequate and refers to the type of personality that education seeks to produce. Kelly sees this type of personality as consisting of an organization of accumulated experiences over a whole life time.\(^2\) Since the self is achieved through social contact, it has to be understood in terms of others. His definition of a "fully functioning self" is outlined as one who: thinks well of himself, thinks well of others, therefore sees his stake in others, sees himself as a part of a world in movement—in process of becoming, sees the value of mistakes, develops and holds human values, knows no other way to live except in keeping with his values, is cast in a creative role.

Combs emphasizes what a person should have in order to be truly healthy, adequate, and self-actualizing. The individual should have:

1. a positive view of self—as persons who are liked, wanted, acceptable, able; as persons of dignity and integrity, of worth and importance.

2. a capacity for identification with his fellows—a deep sensitivity to the feelings and attitudes of others.

3. an openness to experience and acceptance—their perceptual fields are capable of change and adjustment as to make fullest possible use of their experiences.

4. a rich and available perceptual field—well informed, understanding of events.\(^3\)

\(^1\)Ibid., p. 317.

\(^2\)Kelly, Perceiving, Behaving, Becoming, op. cit., pp. 17-20.

\(^3\)Combs, Perceiving, Behaving, Becoming, op. cit., pp. 50-59.
The emphasis is made that the individual who appears to have made important strides toward a fully-functioning, adequate personality seems to be in a state of movement; he is becoming and not in the state of being.

Rogers speaks of two directions that clients take when undergoing therapy as if they were aiming toward the kind of person or the goal they would like to be or achieve.

A major observation is that the individual moves toward being open to his experience, the polar opposite of defensiveness--There would be barriers, no inhibitions which would prevent the full experiencing of whatever was organically present. . . . The second major trend is that the individual moves toward more acceptantly being a process, a fluidity, a changing. He lives on a more existential fashion, living fully in each moment . . . one way of expressing the fluidity which is present in such existential living is to say that the self and personality emerge from experience rather than experience being translated or twisted to fit a pre-conceived self-structure.¹

In summarizing the writings of phenomenal psychologists, the adequate person sees himself: (1) in essentially positive ways, (2) accurately and realistically, (3) characterized by a high degree of identification with other people, (4) capable of accepting himself and others.

The core of the realm of "self" is highly complex. When one describes the characteristics and attributes of a particular given self, the task becomes difficult, for a self can be observed from many frames of reference, either by others or by the individual himself.

¹Rogers, Perceiving, Behaving, Becoming, op. cit., pp. 25-20.
Combs and Snygg point out that:

What the particular qualities of a "real self" are, of course, we can never know, for the self can be understood through somebody's perceptions. ... In fact, the question of whether a real self exists or does not exist is primarily an academic or philosophical question. ... The ways in which the self is perceived can be studied, and that is all that is necessary for us to deal effectively with it.¹

Theorists have proposed that self exists at different levels. Kaplan lists the following aspects of the self in his developmental theory:

- **Self-image**—the core of the self concept, the conscious appraisal of oneself. What he thinks he is.
- **Self-ideal**—what he would like to be. It is a composite of desires, aspirations, fantasies, and dreams, derived from a series of interactions with real and imaginary figures.
- **Self-role**—the way other people react to him.²

The individual's self concept consists then, not of a single perception of self, but it consists of self from many references. Parents and teachers should be interested in knowing the extent of the discrepancy between the student's perceived self concept and the self-ideal because it is an indication of the development and learning that has taken place. "It also reveals the degree of inner harmony and self-adjustment."³

Hanlon, Hofstaetter, and O'Connor have indicated that a positive and significantly high correlation should exist between the measure of

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²Kaplan, op. cit., pp. 132-134.
³Perkins, op. cit., p. 450.
adjustment and the congruence of the self concept and the ideal self. This correlation should exist in a sample from a population within the "normal range," that is, in a population whose members are not patients. Both concepts of self are operationally defined by the results of respective Q sorts. The same authors found the following results in studies dealing with "self-ideal" congruence.

1. The correlation between I.Q. and self-ideal congruence, I.Q. and total adjustment, I.Q. and self adjustment, and I.Q. and social adjustment were all found to be not significant.

2. The correlation between self concept and ideal concept tends to be positive with a mean value in an unselected population between the fiducial limits of .33 and .46; therefore, the overall tendency is toward a congruence of the two concepts of self.

3. Congruence between self and ideal self is a normally distributed trait.

4. The correlation between self-ideal congruence and total adjustment is positive and highly significant with regression being rectilinear.¹

Studies using children as subjects have been reported by Perkins and Hill. Perkins testing the hypothesis that children in a group-centered climate will show greater congruency between the self concept and the ideal self than children in a teacher-centered climate, found that children will register a positive and significant change toward congruency between the self concept and the ideal self, in time.²


Hill's main finding was that attitudes toward self seem to vary significantly with chronological age, improving as age increases.¹

Cole reports that, in general, the larger the discrepancy, the greater the tension and the more serious the emotional maladjustment, and in addition, sometimes a person can reject himself and prefer to live with his idealized self rather than with his real self. Such alienation or estrangement from the self is characteristic of many neurotic patients.² Students, likewise, should make progression in narrowing the gap between what they are and what they want to become, and it is a major aspect of their self development. The need for educational programs that provide curricular methods and materials to develop environments for self development is most essential in our society. In fact it constitutes perhaps the greatest challenge for educators in the years ahead.

Rogers said, "I have come to feel that the only learning which significantly influences behavior is self-discovered and self-appropriated "learning."³ Education should focus on facilitating changes in ways the learner sees and feels about himself in relation to his experience rather than upon producing stereotyped and identical behavioral responses of conformity with standardized norms.⁴ An


³Carl R. Rogers, "Personal Thoughts on Teaching and Learning" Self in Growth Teaching and Learning, op. cit., p. 455.

⁴Perkins, op. cit., p. 158.
adequate self must be stable, but not rigid; it must be changing but not fluctuating. Individuals change their concept in order to meet needs more adequately in certain situations. The self was shown to be an aspect of individuality which . . . "is comfortably discovered in one's experiences, not something imposed upon it."\(^1\) It is not merely what a person knows that determines his behavior; it is the way he feels and perceives himself in that situation.

Perception then plays a major never-ending role in growth and self differentiation. The process of self conceptualization depends on perceptive ability because it is, as Kelly states,

\[\ldots\] the stuff of growth for the psychological self. The perceptive process is the avenue by which the self can be fed.' \(^2\) Through perception all of man's experiences are recognized, and as the human develops his concept of self, he 'adds, assimilates, and integrates within his own system that which is essential and authentic while renouncing what is unessential, strange, and harmful.'\(^2\)

Perception as a dynamic process involves more than a response to sensory stimulation. Cratty says:

It is a holistic term referring to meanings attached to an object, event, or situation occurring within spatial and temporal proximity of the individual. Perception is an ever continuing, as well as an immediate, phenomenon, dependent not only upon a situation's momentary core but also upon the context in which the event occurs and upon past experience.\(^3\)

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\(^2\)Kelly, op. cit., p. 19.

The perceptual phenomena can be examined from the visual-spatial, olfactory, and auditory stimuli, or it can be explored from a philosophical biological, behavioral approach, but to pursue a thorough study of perception is out of the realm of this study.

The first step in the acquisition of new concepts or to change existing concepts must come as a result of the individual's perception that the new experience does not "jibe" with his existing phenomenal self. Perception inconsistent with existing concepts of self may also be experienced by the individual. Combs and Snygg list the following factors as being present whether or not a change is affected in the perceived self:

1. The place of the new concept in the individual's present self organization.

2. The relation of the new concept to the person's basic need.

3. The clarity of the experience of the new perception.¹

Self concept, then, as it is used throughout this study refers to Rogers' definition of an organized configuration of perceptions of the self which are admissible to awareness. Self structure begins in infancy, is molded by "important" persons, is fluid but becomes relativley stable in postadolescence. Self esteem, or the congruence between the perceived self and ideal self plays an important role in personality development. In education we are striving to develop "fully functioning" personalities, those who think well of themselves, see their stake in others, see themselves as a part of a world in movement.

¹Combs and Snygg, op. cit., p. 158.
In order to change self concept it is necessary to help individuals perceive themselves as they are and then to recognize what perceptual experiences will affect a conceptual relationship in the individual's present self organization.

**BODY IMAGE**

Freshmen college women are in a stage of gradual emergence into adulthood. In the emergence of adult femaleness, body-image plays a distinctive and significant role. This psychic reality, which is the innermost core of the self-concept, is simply the mental picture of her physical self. It is what the young woman pictures herself to be along physical dimensions—height, weight, her walk, her gestures, her smile, her femininity, her energy, her posture, the condition of her skins, her attractiveness, her figure, the quality of her voice, her motor skills based on agility and coordination. These are some of the factors that are organized into the body image, and it is this image or mental picture of herself that constitutes the center of her self concept.

Moser says about young women:

A large measure of her self-acceptance centers around the acceptance of her body. This is a symbol of self. It has a realism beyond other aspects of personality. It represents the impression of her which is held by others. Her own concept of self is well-nigh impossible apart from her body ... To have a body which conforms to her idea of what it should be is a tremendous advantage. Such a body will support her desire to be attractive, to be popular, to be sought.1

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Celeste Ulrich has pointed out that for older girls there are implications of the self with regard to play. Young women are very conscious of their bodies, of their movement patterns and of their selves when they are participating in a physical education class. Those who consider themselves unacceptable with regard to what their body form appears to be seem to have a very difficult time in moving with any fluidity. If women think they move poorly, they may seek to compensate by ignoring all movement activities and concentrate on verbal or manual activities.¹

Schneiders links body-image, self-concept and self-expression when he states that

Through the medium of self-expression we express our thoughts and attitudes, our feelings and desires, our likes and dislikes. Thus we smile or laugh, frown or cry, nod our head, shake hands, or utter a curse, depending upon our feelings and thoughts of the moment. The facility with which such expressions are executed, the smoothness or clumsiness of the performance, the gracefulness of our movements—all these tend to make us keenly aware of our physical organism... the self concept embraces an image of the body and what it should and should not do.... Expressive movement is the mode par excellence by which the self is externalized, and for that reason it plays a leading role in the development of the self-concept.²

It is apparent that most of the research and literature dealing with self concept has been done by psychologists, but within the last ten to fifteen years, physical educators have taken interest in how self


concept is changed by the experiences an individual has encountered in relationship to his physical image.

Considerable research has been published on the relationship of body structure, physiological functioning, body distortion, and body malfunction to personality variables. Limited research has been available dealing with the concept a person has of his body or relation to the concept the person has of himself. Several theorists have operated on the hypothesis that a person's attitudes concerning his conception of himself will influence and be influenced by his view of his physical appearance and physical abilities. The emphasis is on what a person thinks he is—not what he is in reality.

Henry Head was one of the first to conceptualize a body image concept for normal individuals. Up to the 1920's neurologists had dealt with the relationship between the body-image concept to phantom limbs. Head's concept was of a postural model against which all body movements and postures were judged.¹

Body image is the mental picture that an individual has of his own body.², ³, ⁴, ⁵ Fisher and Cleveland refer to body image as a

⁴Seymour Fisher and Sidney E. Cleveland, op. cit., p. 8.
psychological experience and focus on the individual's feelings and attitudes toward his own body.¹ Some psychologists feel that the term "body image" involves no assumption regarding the availability to conscious knowledge of such attitudes and feelings. "Indeed, it is currently a loose generalized term with very few specific connotations."²

The terms "body concept" and "body percept" are used to describe the systematic impressions an individual has of his body, cognitive and affective, conscious and unconscious, formed in the course of growing up.³ The child's conception of his body is rather general, but later he develops an impression of the body as having definite limits or boundaries. He begins to think of body parts as being discreet yet interrelated and joined in a whole structure. When the individual reaches that stage of an articulated body concept, it is an indication of differentiation. Witkin states that, "From the way a person perceives his body, inference may be drawn about the nature of his body concept."⁴

In Zion's study on body concept as it relates to self concept, she concluded that there is a significant linear relationship between self concept and body concept in most of the dimensions measured. It

¹Fisher and Cleveland, op. cit., p. X.
²Ibid., p. 8.
⁴Ibid., p. 28.
appears that the security one has in one's body is related to the
security with which one faces one's self and the world.¹

Another term, body cathexis, refers to the manner in which the
individual regards his body.² The terms, postural model and body scheme
refer to the architectural aspects of the image.³ The body image
concept, as developed by Fisher and Cleveland, appears to be more
comprehensive and inclusive of all previous definitions.

Paul Schilder's interest in body image has encompassed a very
broad foundation based on a personal physiological aspect as it relates
to sociology and psychology. His theory has had broad implications.

He states:

Bodies are after all not isolated entities. The body and
the body image are always the body and the body image of
personality which expresses itself in the body. The body
image is never an isolated part of our existence but is a
part of every experience. The human personality is a
personality with a body which expresses itself in the body
image and only on the basis of the understanding of the
body image can we understand the personality fully.⁴

Head stated, "anything which participates in movement of the body
was seen as added to the postural model and as becoming part of the body


scheme.\textsuperscript{1} This dynamic connotation is evident in other research studies. Caliger says the individual experiences "his body as a gestalt which is in a constant state of flux and reorganization in the process of . . . interacting with his environment."\textsuperscript{2} Because image is a dynamic process which is constantly being repatterned by continual contact with the world, it does not become static even as an adult. Schilder points this out in the following passage:

\begin{quote}
When the body image has once been created according to our needs and tendencies it does not remain unchanged; it is in a continual flow, and crystallization is immediately followed by a plastic stage from which new construction and new efforts are possible according to the emotional situation of the individual.\textsuperscript{3}
\end{quote}

He further points out that certain outlines of the image are predetermined biologically by established laws of growth and development; however, the tempo and extent of development will be dependent on the life experience, activities, training, and emotional attitudes of each individual.

Herod has completed a study entitled "Implication for Physical Education from the Body-Image Concept." Her research included an intensive review of literature dealing with body-image and was helpful in bringing this review up-to-date. She summarized the main factors that contribute to construction and reconstruction of the body-image. They are (1) tactile sensations, (2) kinesthetic sensations and (3) a cultural

\textsuperscript{1}Head, \textit{op. cit.}, p. 32.

\textsuperscript{2}Leopold Caliger, \textit{A New Approach to Figure Drawing} (Springfield, Illinois: Charles C. Thomas, 1957), p. 5.

\textsuperscript{3}Schilder, \textit{op. cit.}, p. 24.
value scale.\(^1\) The tactile experiences are most important and perhaps the oldest, phylogenetically speaking, because they developed first. Modern curriculum designers have established stages of development in the child that utilize the knowledge based on these early tactile sensations.

To know where the body is in space is important, for contact with objects in the environment serves as a reference point to the image, for example, the soles of the feet coming in contact with the ground serves as a reference point when the body is in an upright position.\(^2\) Movement helps the individual to become more aware of his body. The tension and relaxation of muscles moving the body with and against gravity clarify the perception of the body and make boundaries clearer. Movements in the child's early experiences have great significance in determining the formation of his body image.\(^3\) Movement will influence body image throughout life, for as the size and shape of the body change with growth, the individual's capacity and ability for motor activities and the motor activities themselves will also affect the body image of the individual. Remembering that the image is not static but flexible points out that the image changes continually according to the particular movement which the individual is performing at the time.

Laban, throughout his work, continually emphasizes the kinesthetic


\(^{2}\)Schilder, op. cit., p. 24.

\(^{3}\)Ibid., p. 25.
sensations that result from various movement patterns. His entire system of effort actions is built on this very premise—that each movement is different in degrees of lightness, force, flow.

Herod summarized:

... the kinesthetic sensation derived from the various movements of the individual during his lifetime will have varied effects on the image but kinesthetic sensations are necessary for the development and maintenance of the image. The body image in turn is essential for the initiation of movements. The two factors are interdependent on each other and make a large contribution to the selfhood of the individual.

Attitudes of a culture provide a means of perceptions that have a profound influence on an individual's development of body image. Body image is highly socialized and is greatly influenced by people with whom he comes in contact—his family, teachers, and peers. Kolb emphasizes the importance of the family in the formation of a child's body image.

Attitudes toward the body are also derived from the individual's perceptions, comparisons and identifications with the bodies of other persons. Usually, children who are accepted by and conform to their family and cultural expectations neither overnor under-evaluate their body.

Levy found that young boys were more sensitive toward the prowess aspect of the body while girls were concerned with physical attractiveness. He found too that in a group of children who were overly concerned

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1Rudolph Laban, Modern Educational Dance (London: MacDonald & Evans, 1947).

2Herod, op. cit., p. 19.

with their bodies there was a common tendency for the mother to be over-
solicitous and concerned with the health of the child.\footnote{1} Jourard, in
studying the attitudes of adults toward their bodies, found some
significant differences between the male and female. For the male,
masculinity is related to the size of the body parts with large being
the most desired. The male tends not to differentiate his body parts
but accepts them as a whole while the female differentiates her body
parts in determining self esteem.\footnote{2} In our culture the female's image of
her body depends on bust measurement, waist size, and gluteus maximum
girth. To attract the male, the female uses her physical attractiveness
and so has found security in emphasizing particular parts of her body.
Overall size plays an important part in determining characteristics of
masculinity and femininity in the adult male and female.

Personality psychologists have found that attitudes of an
individual toward his role and status in the culture may be influenced
by the size of his body and the attitude of the culture attached to that
size. Judging from the amount of time, effort, and money spent on
improving physical appearance the importance of the body image in our
culture is fairly obvious.

The more broadly the whole program of sports, athletics, and
physical education can be conceived, with a view to helping each young
person to come into his own by using his particular talents and


\footnote{2}Sidney Jourard and Paul Secord. "Body Cathexis and the Ideal Female Figure," Journal of Abnormal and Social Psychology (Vol. 50, March, 1955), p. 245.
aptitudes, the more wholesome this part of the educational program is likely to be.¹

Q-SORT

Inventories and ratings by judges have long ago proved themselves useful as measures of self confidence and of attitudes. A more recent and novel method of estimating self confidence or self esteem is by means of discrepancy scores. "The greater the discrepancy between what we think we are and what we think we should be, the more likely we are to feel unworthy, inadequate, and dissatisfied with ourselves."² Every evaluative statement that a person makes concerning himself can be considered a sample of his self concept, from which inferences may then be made about the various properties of that self concept.³ Based on the premises that a method is needed that will allow more direct expression of an individual's conceptual system, the Q-technique, developed by William Stephenson in 1953, is a valuable assessive instrument.⁴ It made possible factor studies on a single or a few individuals thus bringing the methods of correlation and factor analysis

¹Jersild, op. cit., p. 79.
²Smith, op. cit., p. 187.
⁴Stephenson, op. cit.
into the laboratory and clinic. "This was possible if persons were correlated instead of tests."\(^1\)

Vernon states that the Q-technique may be thought of as bridging the gap between psychological-determined and subject-determined tests. The psychologist chooses items for subject to sort which have been derived from statements made by other similar subjects.\(^2\) Q-technique makes possible the study of one person or the comparison of an individual's concept of himself with similar self concepts of others. "This methodology therefore applies to so-called "subjective" data involving a person's self-description."\(^3\)

Stephenson in his early experimentation with Q-Sort stated:

Physical educators should be concerned with the role they can assume in helping each student develop a sound physical self image or body image so that it in turn could help to reshape self concept attitudes that are in need of change. . . . There is not one realm of a ghostlike mind and another of body. This is not to say, however, that man's "subjective" behavior does not exist. Certainly he thinks, feels, imagines, muses, dreams, and all else. . . . Along Q lines all subjective behavior, hitherto regarded as "in esse" arbitrary and unscientific, is capable of study with full scientific sanction, satisfying every rule and procedure of scientific method.\(^4\)

Mowrer suggests that Q-technique is a research tool which may prove useful not only in clinical but also in social psychology.\(^5\)

\(^1\)Stephenson, ibid., p. 9.


\(^3\)Strong and Feder, op. cit., p. 170.

\(^4\)Stephenson, op. cit., p. 25.

Stephenson used many examples in the realm of aesthetics, attitudes, thinking behavior, self reflections, and every conceivable form of human behavior, individual or group. In every case the interest would be focused upon the "theoretical" matters, and Q-technique is just a "modus operandi," a way to test the theoretical issues.¹

The procedure known as Q-Sort or Q-technique requires the subject to sort a number of self reference statements into a series of piles or classes along a continuum appropriate to the accuracy of his self description, from those that are "least like" him to those that are "most like" him. A detailed description of Q-sort technique is found in Chapter III.

An important characteristic of the Q-sort procedure is that it permits quantification. This enables correlation between Q-Sorts, just as quantification enables correlation between different sets of ratings.

Dymond found the test-retest reliability of this type of Q-Sort, using control group scores over a period of time from six months to one year to be .86.² Other studies have found similar reliabilities. It has been stated in a review of the current status of the Q-sort that "The question of the reliability of the Q-Sort is rarely raised." Frank found correlation between .93 and .97 for test-retest results.³

¹Stephenson, op. cit., p. 25.


³G. H. Frank, "Note on Reliability of Q-Sort Data" Psychological Reports 2, 1956.
Q-Sort is a very adaptable research instrument and has been used in exploring self-concept attitudes with various kinds of groups, for example, hospital patients, high school boys and girls, university student leaders, students from broken homes. Rogers and associates have used the method extensively in studying self concept in its relationship to psychotherapy.¹ Others too have found that a discrepancy between the self concept and the concept of the desired or ideal self is viewed as reflecting a sense of self-dissatisfaction or maladjustment.²

There would probably be universal agreement among psychotherapists, regardless of training or theoretical persuasion, that prior to treatment a disturbed, puzzled, suffering person would show a discrepancy between his description of himself as he is and as he would like to be. This discrepancy will be reflected by a low positive or a negative correlation between the values assigned to the 150 cards on the two sortings. . . . There would likewise be general agreement that as a result of successful therapy the discrepancy between the self sort and the ideal sort should decrease, as indicated by a post-treatment correlation between the self sort and the ideal sort which is higher than the pretreatment correlation between the self sort and the ideal sort. . . . Here then, we have the exciting possibility of obtaining a simple, quantitative index of "movement" in any given instance of psychotherapeutic endeavor. The more nearly the post-therapy correlation approximates 1.00, the more nearly the therapy may be said to have brought the individual to the ultimate in "normality."³

The findings of psychologists who have worked with the Q-Sort have indicated that the perceived self tends to change more during the course of psychotherapy than does the ideal self.

¹Rogers and Dymond, op. cit., pp. 76-84.
²Strong and Feder, op. cit., p. 170.
³Mowrer, op. cit., p. 320.
Little exploration has been done following similar lines among relatively normal individuals. This information would contribute to equally valuable assessment studies. A set of statements derived from counselees or students rather than statements from clinical interview records could be used. Vernon and Levy suggested that the total number of statements should be kept fairly small, say 50 or 60 so that several ratings would not occupy too much time.\footnote{Vernon, \textit{op. cit.}, p. 320.}\footnote{L. H. Levy, "The Meaning and Generality of Perceived Actual-Ideal Discrepancies." \textit{Journal of Consulting Psychology} (20, 1956), p. 396-398.}\footnote{Lee J. Cronbach, \textit{Essentials of Psychological Testing} (New York: Harper \& Row, Publishers, 1960), p. 515.} Sorts based on actual self (perceived) ideal self, ideal self ten years from now, how he thinks a typical person of his own age, sex, social climate would sort the statements, how others would judge him, are many possible dimensions of self that could be analyzed using different approaches to Q-Sort. The Q-Sort is of greatest value when a comprehensive description of a single individual is desired and the rater can be expected to give a patient consideration to a long list of statements.\footnote{Lee J. Cronbach, \textit{Essentials of Psychological Testing} (New York: Harper \& Row, Publishers, 1960), p. 515.}

It is necessary to remember that self concept is formed as a result of what a person deeply feels and believes he is. Self concept can be best understood through a process of inferences acquired from an individual's observable behavior. One class of behavior which may be used as a basis for making such inferences is what the subject has to say about himself. Care should be taken that what the individual
says he is does not turn into a description as reported to any outsider; this description is termed "self report." Students will not reveal the nature of their innermost selves solely on demand, even if they were aware of their self concept. Determination of an individual's self concept cannot be approached directly, but it can be understood better through research instruments such as Q-techniques. Educators are interested in the total personality of learners and what effects them both in and out of the classroom. Is it not our duty to change a person's self concept (when it is inadequate or undesirable) so as to bring about a readjustment in his behavior because of a re-organized self-concept? Any method or procedure that will result in an individual's improved self concept behavior is worthy of experimentation.

INSTRUCTIONAL TELEVISION

Probably no area of instruction has been subjected to more experimentation than has instructional television. At the onset of its brief twenty years of existence, it was hailed as probably the most revolutionary discovery since books and the printing press, but over the years enthusiasm has waned until at the present time much criticism has been directed toward ITV. Murphy and Gross summed up the disenchantment in a Saturday Review article.

Rarely have television's distinctive characteristics been thoroughly exploited to achieve change and improve instruction. With certain honorable exceptions, ITV has

merely transferred conventional teaching techniques to the screen, or served as a conductor for other media, films, and slides.\(^1\)

Wigren has pointed to one of the weak points in ITV. He says:

The focus has been too much on the dissemination of factorial information and too little on the ability of the learner to arrive at conclusions for himself. All too often we have attempted to program answers for which the learner has no questions. All too often we have used inductive approaches in the classroom and deductive approaches on camera, allowing the setting rather than the learner to dictate our teaching methods.\(^2\)

The greatest unusual potential of educational resources in America lies in the hands of our students. Television should be used as an instrument that encourages their initiative, self-discipline, individual effort, and unique personal development.\(^3\) Superior teachers have a two-fold function in helping students achieve their mature self initiative. According to Whitehead, the great teacher elicits enthusiasm by resonance from his own personality and creates the environment of a larger knowledge and a firmer purpose.\(^4\)

The challenging task of defining the specific function of the educational processes that effect the desired changes in self concept remains to be done. No television studies were found involving self

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\(^4\)Alfred Whitehead, The Aims of Education (as quoted by Charles A. Siepmann "The Role & Scope of Television in Education." *Talk presented to American Association of University Women, April, 1959*).
concept change. The most closely related studies dealt with course-related attitudes and again, no differences were found between the methods of instruction as to changes in attitudes; however, students taught by both methods moved in a positive direction over the period of a semester.\(^1\)

It is necessary to compare the relative effectiveness of television and direct instruction on the change in attitudes of students since this is an important educational function and responsibility.\(^2\)

The relative effectiveness of television instruction must be measured as to many kinds of concepts, attitudes, values, and judgments. Meanwhile, there is not sufficient evidence to show that televising college courses results in any more significant changes in students' attitudes than other accepted methods of preventing college instruction.\(^3\)

Research has nevertheless clarified other questions concerning television instruction. Kumata has outlined recent research findings:

1. A great many more findings report no significant differences between television teaching and conventional teaching in achievement of knowledge.

2. There is an increase in the number of studies which report significant differences in favor of television at the elementary and high school level.

3. Motivation is a prime factor in ascertaining television effects. Superiority of television is reported more often in lower educational (elementary) levels than in high levels.


\(^3\)Ibid., p. 38.
4. Intelligence is a prime factor. Television seems to affect intelligence levels differently but exactly how has not been shown. It could be interpreted to mean that the levels of difficulty of the message itself and the perceived capability level by the instructor or planner produce different results rather than the fact of television transmission itself.

5. The mode of presentation, television or face-to-face has no differential effect upon retention of subject matter.

6. Television presentations are effective in changing course-related attitudes. However, this change is not significantly different from changes wrought through conventionally taught classes. No boomerang effect is reported—all changes are in the direction desired, in spite of the fact that student attitudes toward teaching by television may be extremely negative.

7. Varying the expertness of the instruction produced no direct influence on course-related attitudes although interactions of prestige with different instructors were found.¹

Schramm has reported similar results. He reaffirms that good teaching is much the same on television or films, or the lecture platform. A student who wants to learn can learn from a great variety of experiences.² It is interesting to note that research findings differ in the type of presentations used on the screen. Klapper found that students like television teaching better with a number of visuals than when it was straight lecture.³ Carpenter and Greenhill found that lecture and blackboard alone made for more learning than lecture plus

¹Hidega Kumata, "A Decade of Teaching by Television." Ed. Schramm, Wilbur The Import of ETV.

²Wilbur Schramm, "What We Know about Learning from ITV," op. cit., p. 64.

charts, plus models, plus training films, plus visiting speakers, plus
dramatization; however, replications of this experiment, in another
class, resulted in no significant difference.\(^1\) "The implication is
that complexity of presentation, and a great variety of visual cues,
may distract a student from the main principles of the presentation."\(^2\)

Carpenter and Greenhill and Wolgomuth have shown that even by
adding "feedback" devices, television instruction does not improve
statistically.\(^3\), \(^4\)

A study done by Klapper indicated that studying the attention
level of students receiving television instruction does not improve
results.\(^5\) Likewise, varying the size of the viewing group does not seem
to increase the effectiveness of televised instruction.\(^6\) Westley and
Mobius explored the possibility that looking the television viewer

\(^1\)C. R. Carpenter and L. P. Greenhill "An Investigation of Closed-
Circuit Television for Teaching University Courses." Instructional
Television Project Report Number II (University Park: Pennsylvania
State University, 1955).

\(^2\)Wilbur Schramm, "What We Know about Learning from ITV.

\(^3\)C. R. Carpenter and L. P. Greenhill. "An Investigation of
Closed-Circuit Television for Teaching University Courses." Instructional
Television Research. Projects I and II (University Park: Pennsylvania
State University, 1955).

\(^4\)D. A. Wolgomuth. "A Comparative Study of Three Techniques of
Student Feedback in Television Teaching: The Effectiveness of an
Electrical Signal Feedback System" (Washington, D. C.: The American
University, 1961).

\(^5\)H. L. Klapper "Closed-Circuit Television as a Medium of
Instruction at the New York University." (New York: New York
University, 1958).

\(^6\)W. J. McKeen. "The Improvement of Instruction" Review of
directly in the eye would make a difference in effectiveness. It did not.

A review of the numerous research studies completed on the aspects of ITV is not within the realm of the study. Gordon states that "no eternal truth or hard and fast laws of educational methodology are going to emerge from a mere 400 studies of the use of an instrument as flexible as television in a complex as enormous as the school system in the United States," but how have these studies with "no significant differences" results been interpreted in media research? Popham has stated

The lack of significant differences between the conventionally taught and the tape-taught students in this study . . . allows the conclusion that the tape recorded lecture-approach . . . proved effective.

Hoban says

As far as a university facility is concerned, the reported findings (ad nauseum) on comparative effectiveness should be decisive. If research results were unique determinants of decisions on teaching methods of college and university instructors, these teachers would henceforth enthusiastically welcome closed-circuit television with open arms.

"Failure to reject the null hypothesis provides no positive


2Gordon, op. cit., p. 88.


evidence that all media are effective and equal in their impacts.\textsuperscript{1} If that were true then the classroom procedures with which the media methods are compared must be quite bad.

There has been a change in the reasoning as to the ubiquity of non-significant differences. Siegel and Siegel suggest that effective factors in media presentation may be masked or cancelled out by other related factors and that non-significant differences may result from inappropriate research designs.\textsuperscript{2}

In another study Schramm suggests that the period of experimentation with new media may be too short. The studies may involve too small a sampling and in some cases be evaluated by too insensitive a measuring instrument.\textsuperscript{3}

Schueler and Lesser point to another weakness in media research. Notably absent has been the "zero" control group, one which would supply information concerning the degree of student progress in the total absence of instruction. Thus, no baseline is available to represent the gain in learning in the absence of any formal observation.\textsuperscript{4}

It is beyond the scope of this study to pursue methods of research that might be used in media research, especially in instructional television. It is feasible, however, to list general areas of concern for


\textsuperscript{4}Schueler and Lesser, \textit{op. cit.}, p. 57.
future research. Most studies ignore the complexity of instructional procedures and their outcomes. The learning process and teaching behaviors demand multivariate analyses.

The necessary multidimensionality of dependent and independent variables in media research demands multivariate experimental designs and procedures, and yet they are rarely applied.¹

Desirable competencies of the teacher should be considered in any experimental study. The teacher should possess: the ability to develop and analyze teaching goals, knowledge of subject matter and skill necessary to its communication, knowledge of student behavioral characteristics, and the learning environment.

Schramm says:

The further step we have now taken has put us in position to say something about the conditions under which students learn more from television and something about what he learns from television.²

An important question toward which this study is directed is: Can and does the use of ITV affect self-concept changes? Can the instrument be used to direct change in a positive direction? Carpenter lists factors which seem to affect positively student learning in ITV courses, and these factors can be related to self-concept change as well. He lists:

1. The quality of sources and resources used.

2. The way in which materials are selected and organized.

¹Schueler, Lesser, and Dobbins, op. cit., p. 47.

²Schramm, op. cit., p. 52-76.
3. The surroundings on the television screen in which these materials are presented to viewers.

4. The characteristics of students in terms of aspiration, motivation, abilities, previous training, and state of physical and mental health.

5. The nature of the students' responses to the materials on television.

6. The rewards, penalties, or reinforcements which occur with or during televised instruction.

7. The evaluations and comparisons of achievement rates and performance levels to which the students are subjected.

Instructional television, as it has been described, should be of use in the transmission or distribution of information necessary to the process of changing self-concept. If television lessons are carefully planned with all components of good teaching and learning kept in mind, then information can be represented in such a way as to be within the visual and auditory sensory capacities and the conceptual abilities of the students. It is they who must perceive stimuli and organize it in order to achieve knowledge that is necessary to change concepts that will eventually effect behavioral changes.

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CHAPTER III  

METHODS AND PROCEDURES

This study was designed to measure self-concept changes in college freshmen women enrolled in a basic physical education course using two methods of instruction. Instructional television was utilized in one experimental group (A), and traditional classroom procedures were employed in the second experimental group (B). A control group consisted of students not involved in the basic course (C).

METHOD

Three groups of freshmen college women at Kent State University were involved in this study. Forty subjects were enrolled in each group at the beginning of the experiment which coincided with the beginning of an academic year, fall quarter. The experiment lasted eleven weeks, the length of time necessary to complete the basic H.P.E. 130 course titled "Foundations for Fitness." At the end of the experiment, due to students dropping out of the University, the number of subjects who finished the experiment was reduced to thirty-four in the television class (A), thirty-eight in the non-television class (B), and thirty-five in the control group (C).

The research method involved the assessment of differences between the means of the groups ascertained by comparing Groups A and B, A and C, and B and C. Comparisons were made in the dimension of discrepancy correlations between the perceived self and ideal self based
on a pre-test before the experiment began as compared to a post-test at completion of the experiment. A symbolic drawing of the design is shown to clarify procedures.

Fig. 1.—Research Design

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<thead>
<tr>
<th>Group A</th>
<th>PRE TEST</th>
<th>POST TEST</th>
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<td>1 Perceived</td>
<td>Ideal</td>
<td>Perceived</td>
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<td>2 Self</td>
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<th>PRE TEST</th>
<th>POST TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Perceived</td>
<td>Ideal</td>
<td>Perceived</td>
</tr>
<tr>
<td>2 Self</td>
<td>Self</td>
<td>Self</td>
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<td>3</td>
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The procedure used to measure the discrepancy correlation between perceived self and ideal self was a Q-technique based on Stephenson's Q-methodology.\(^1\) The Q-Sort used was designed by Page and Pattinato at Kent State University.

Selection of the Sample

Because the experiment was designed to measure self concept changes of college freshmen women involved in different treatments of a

basic physical education course, it was necessary to draw samples from sections of H.P.E. 130. A random selection from the entire freshmen women's population was drawn during registration before the quarter began. Six sections of H.P.E. 130 were offered at each hour, and students were placed in a section as they registered, first student in first section, second student in the second section, third student in the third section until each section was filled. There were no instructors' names listed with the sections so the students did not know what instructor would teach any of the sections. Since all students register at one time, this method of placing students in the sections depended on chance. Only freshmen women in their first quarter of college were used in the study. Their ages ranged from 18 to 22.

To insure similarity of environmental conditions, a classroom was chosen that was free at two consecutive hours. The 2:00 and 3:00 hours were chosen on this basis. The H.P.E. 130 section assigned to the instructor participating in the study was the fifth section at 2:00 and the fifth section at 3:00 so every fifth student that registered at 2:00 was placed in the experimental group. Every fifth student who registered at 3:00 was placed in the experimental group.

Although H.P.E. 130 is a required basic course, not all freshmen women can be enrolled fall quarter. Some freshmen women were "closed-out" and signed up for various sport's activity classes in the Physical Education Service program. The control group (C) was taken from this program. Subjects were chosen from sports classes meeting on the same days as close as possible to the time when the 130 classes met. There
could be no exact matching of times because the 130 classes fill the entire gymnasium leaving no room for any other classes. Volunteers were taken from classes in Swimming, Volleyball, and Badminton. Thus the control group (C) was not involved in any way with the H.P.E. 130 basic course.

Treatment

Subjects in Group A met twice a week, Mondays and Wednesdays at 2:00 in the Dance Room in Wills Gymnasium at Kent State University. All subjects were dressed in leotards. The dance room walls were covered with mirrors so students could hardly escape seeing themselves perform during the class. Then physical self images became apparent to them by use of visual perception. Each Wednesday the class received lectures presenting the conceptual content of the course via closed circuit television. The video tapes had been prepared prior to the beginning of the study. The television instruction was also the classroom instructor so the students in experimental group A were exposed to just one instructor throughout the quarter. Monday class meetings were considered laboratory sessions in which students explored activities based on the material presented by television the previous day. During this period, students further examined and solved problems dealing with specific concepts of fitness and movement.

The video tapes presented material evolving from concepts based on fitness and movement to improving self images. The ten major concepts covered in the ten video tapes included:
1. Definition of terms, physical self image, body image; statement of objectives of course
2. Relaxation and the part it plays in our physical structure
3. Flexibility--its significance to fitness and movement
4. Strength--as a basic component of fitness and movement
5. Cardiovascular efficiency--role it plays in vigor and vitality
6. Posture--role it plays in self image concept
7. Balance--as an underlying basis for efficient movement
8. Principles of movement--for a basic understanding of levers, gravity, force, power
9. Weight control--as basis for optimal performance and appearance in dealing with one's self concept
10. Rhythm--as the epitome of effective, efficient movement

Subjects in the Non-television group (B) met in the same Dance Room at 3:00 P.M. on Mondays and Wednesdays. All external conditions were kept constant. Group B received all conceptual content from the classroom teacher who presented it via traditional lecture and discussion method. The same instructor taught Group B as in Group A. The same concepts were presented on the same days as were presented to the television group. Monday classes were engaged in exactly the same activities as planned for the television class.

The control group was not involved with the basic H.P.E. 130 course in any way. The subjects met with their respective sports' instructor twice a week throughout the entire quarter.

The philosophy for this experimental course was based on an
attempt to encompass modern concepts of movement in their relation to fitness and to psychological and sociological implications.

A human being does not feel or act without thinking, or move without feeling and thinking. The physically-educated woman has developed a body concept that enables her to develop an awareness of all experiences and to learn from active participation in those experiences. Through her movements a woman expresses the thinking and feelings which make her a unique person, and the uniqueness depends on what she thinks of her body, how she thinks of herself in relation to her body, and how well her body is exercised, disciplined, and educated. . . . Meaningful movement that has evolved from sound attitudes, knowledge and appreciation then becomes an important aspect in the fullest realization of self.

The individual, in order to accomplish meaningful movement experiences, should certainly possess a body that is capable of responding with freedom to both the conscious and unconscious demands made upon it. Physical fitness provides the basis for such demands, for only when she has acquired sufficient strength, flexibility, power, endurance, and agility, is she ready with the necessary tools to carry out any invitation to activity.

The first diagnostic information supplied to each woman enrolled in the basic course was based on her performance in a battery of physical fitness tests: step-test, curl downs, pushups, agility run, bend and reach, and broad jump. Her T-scores were compared to the T-scores of other college women. Next she recorded her girth measurements and compared them to ideal measurements. She computed her optimal weight by using her skeletal girth measurements. Muscle tonus and fat deposits

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were judged by use of fat calipers and the pinch-push test and then
judged to be poor, fair, good, excellent. Posture pictures were
analyzed, and a program for improvement was planned.

By this point each woman had formed a conceptual impression of
what she had become physically, her physical self image. "My Self-
Image" was the title of a written statement composed by each student
and which accompanied each individual's personal profile inventory. Her
plans for improvement were noted in the profile and became the personal-
ized goal of each student for the remaining portion of the course.
Girls worked alone, in small groups, with the entire class, and always
with the instructor in activities that helped to solve personal problems.

The remainder of the course was devoted to helping these young
women develop a perceptual awareness of themselves in relation to space,
time, and force, as an instrument for functional and expressive purposes.
This involves the "what," "where," "why," and "how" of movement.

Physical laws governing the effective uses of levers, joints,
muscles, should be understood so that each individual can explore daily
tasks noting how each principle underlies her movement patterns. Balance,
force and power are factors that dictate how efficiently one moves in
lifting, pushing, pulling and in sport and motor skills were explored.
Rhythm in its relationship to movement was explored with the objective of
culminating in more efficient, graceful movement. Acquisition of know-
ledge through experimentation and exploration, development of attitude
through personalized experiences coupled with application were the
keynotes of the entire course. For further detail refer to the textbook
cited.
Rare has been the student who has not shown improvement in all areas of the course. Tests, upon completion of the course, have resulted in exclamations of amazement. One study completed on this basic course has shown that a vast majority of women students not only appreciate the value and practicality of such a course, but also feel it should be a required course in every college woman's curriculum.\(^1\) Whether the cognitions and attitudes will become habit and last a lifetime remains to be observed and tested experimentally.

Selection of the Instrument

The stated objectives of H.P.E. 130 were included in a basic syllabus drawn up eight years ago by the Women's Section of the Division of Health, Physical Education, Recreation, and Athletics. The major objective, as stated, was "to develop an awareness and understanding of the individual's physical self image, its potential, and its relationship to psychological and sociological implications."\(^2\) Since the purpose of this study was to measure the effectiveness of the methods used in teaching this course and to measure the effectiveness of the course itself, it was necessary to choose an evaluative instrument that would facilitate the measurement of the stated objective. Keeping in mind the self-concept approach of the course and measurement of that self-concept,


the Q-Sort technique as originally developed by Stephenson and used by Rogers and others, was selected. It has proved to be a very adaptable research instrument and has been used in exploring self-concept attitudes with various kinds of groups.

The theoretical rationale used in this study was based on Rogers self concept or self structure theory. Rogers proposes that a person's private world of experience can be known, in any true sense, only by the person himself. The college freshman woman knows herself better than anyone else and thus becomes the best source of information about herself.

Each college freshman woman perceives herself in a certain way and she also has an image of what she would like to be, an ideal self. The Q-Sort technique can be used to determine the degree or relationship between the perceived self and the ideal self. Theorists refer to this relationship as a discrepancy correlation, the disparity between the real and ideal selves, the congruency relationship. Self esteem and self regard are terms used to denote this relationship also. In this study the relationship is expressed as the discrepancy correlation.

A Q-Sort, then, was used to determine the degree of discrepancy between the perceived self and the ideal self for each subject in two experimental groups and in the control group at the beginning of the course (pre-test) before any college work was begun. A discrepancy correlation was derived again, following the experience of the basic course (post-test). Self-concept changes were thus indicated by the

differences between the means of the discrepancy correlations for the pre-test as compared to the discrepancy correlations on the post-test.

The Q-Sort chosen for this study was constructed by Page and Pattinato.\(^1\) The instrument consists of fifty self-referent statements dealing with the psychological and sociological world of college students. (See appendix for Q-Sort.) The fifty statements were drawn from an original group of fifteen hundred statements relating to personal adjustment. Further studies reduced the number to three hundred and finally to the present fifty statements.

Construct validity of Q-Sort methodology was assumed on the basis of the self-concept theory of Rogers. Reliability of the instrument was tested by Page and Pattinato, and the test-retest correlation was determined to be .86.

Each subject came to the classroom alone or in small groups of three to five. The Q-Sort technique was explained to the group of participating subjects. Each subject was assigned a number to be used on both pre and post tests and assured that names would not be used and that identities would not be used at any time. Subjects were assured that all information would be held in confidence. Their cooperation and full honesty was asked in sorting the cards. It was further pointed out that it was a group study and not individual per se. Following the verbal explanation, each subject was directed to read the following outline of instructions and then ask any questions.

Each of you has been given a deck of fifty cards, each card containing a number and a statement. These statements describe how a person might feel about himself. You also have two sheets with pyramid shaped patterns of blocks in which you will place the numbers of the statements on the cards. One is titled Perceived Self-Sort and the other is titled Ideal Self-Sort.

You will be asked to sort the cards the first time according to how you perceive yourself to be. Follow these procedures:

1. Sort the cards into three piles of about equal size. Put statements that are like you in the right hand pile, statements that are not like you in the left hand pile, and neutral or doubtful statements in the middle pile.

<table>
<thead>
<tr>
<th>Left</th>
<th>Middle</th>
<th>Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

   Not like me  Neutral  Like me
   Doubtful
   Question mark (?)

2. Then sort the statements from these equal piles into seven piles according to the distribution on the sheet—2, 6, 10, 14, 10, 6, 2.

   Fig. 2.—Q-Sort Distribution
3. After you have decided that the statements are sorted into the piles you want (you may change a card as many times as you want), then transfer the numbers of the statements into the corresponding boxes on the sheet titled Perceived Self-Sort. You can place them in the boxes in any order as all have the same value in one pile. Please be careful and transfer numbers accurately.

4. Now repeat the same procedure (1 and 2) after reshuffling the cards. This time sort the statements according to the way you would like to be—an ideal person.

5. After you have completed sorting the statements into seven piles according to your Ideal Self, transfer the numbers into the boxes on the second sheet titled Ideal Self-Sort. Please be careful and transfer numbers accurately.

The average time for administration of the test was forty-five minutes to an hour. The pre-test was administered to all 120 subjects before any class work began. They were contacted at the very first meeting, and the Q-Sort was administered before the meeting of the second class when instruction began.

The post-test was administered in the same classroom with the same instructions given as at the pre-test. The post-test was administered when all class work has been completed.

Statistical Procedures

Q-Sort methodology assigns a numerical value to each of the seven piles. The value is listed under each pile; thus a value is assigned to each statement as sorted by each subject. (See appendix for diagram.) These values were correlated for the perceived sort and ideal sort by a modification of the Product-Moment Correlation formula (Page and Pattinato, 1963). Because the same distribution is used for all sorts in a particular study, the following formula can be used
\[ AB = 1 - \frac{d^2}{2N \sigma^2} = 1 - \frac{d^2}{208} \]

\( r \) = the product-moment correlation between two sorts
\( N \) = number of items in the sample (50 statements)
\( \sigma \) = the standard deviation of the forced distribution, which is the same for all sorts using the distribution
\( d^2 \) = the squared difference between the pile number for an item in two sorts; thus, if a particular item is placed in pile 5 in one sort and pile 7 in another, the \( d^2 \) is 4. The sum of \( d^2 \) is taken over the \( N \) items.

The term \( 2N \sigma^2 \) is a constant for all correlations computed with a particular forced distribution. After the constant is determined, it is only necessary to obtain the sum of squared differences between item placements to compute the correlation.\(^1\)

"The computation of coefficients of correlation with the Q-sorts is quite simple because the formula for the \( r \)'s between pairs of subjects has quantities that never change."\(^2\)

For statistical procedures the coefficients of correlation were transferred to Fisher's \( z \).

Guilford states that the sampling distribution of the Pearson \( r \) is very variable depending upon the sizes of both \( N \) and \( r \). No test of differences between population \( r \)'s based upon standard errors of \( r \) is very satisfactory.


The best recourse is using Fisher's transformation to $z$, whose standard error is related only to $N$ and not to $r$.\(^1\)

His $z$ coefficient, into which any $r$ can be transformed mathematically, does have a normal sampling distribution regardless of the size of $N$ and the size of population $F$. Nor is an estimate of the population $F$ needed in order to determine the standard error of $z$. Fisher's formula for transformation of $r$ into $z$ is:

$$z = 1.1513 \log_{10} \frac{1+r}{1-r}$$

The Fisher $z$ transformations were found for each subject on both pre and post Q-sorts. The means of the pre-Q-sort and the mean of the post-Q-sort were established for each group. The difference of the means was computed for each group, and it was this statistic that was used in all further calculations. Tables showing the $z$ transformation for subjects in each group are found in Chapter IV.

The basic data then for this study were derived from the self concept Q-sorts administered at the beginning and end of the experiment.

Because it is most desirable statistically to have even groups as to number of subjects, a random table of numbers was consulted in order to select four subjects from Group B and one subject from Group C that were omitted from the study.\(^3\)

Analysis of variance using Newman-Keuls' procedure was used to determine sampling distribution. The $F$-test is a highly flexible

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\(^2\)Tbid., p. 163.

technique for testing hypotheses about means in more than two groups. The F-test makes it possible to discover if all population means are equal.

Since three groups were involved in the experiment, it was desirable to select a test of multiple comparisons so that following the F-test, additional tests could reveal more detailed information about the means. Newman-Keuls is a specialized test for comparing individual means with each other. Winer presents a summary of the multiple comparison tests including those developed by Newman-Keuls, Duncan, Scheffe, Tukey (a), Tukey (b), and Dunnett.1

The method as developed by Newman-Keuls-Duncan was selected because it keeps the level of significance equal to alpha (α) for all ordered pairs, no matter how many steps apart the means may be. Instead of changing the critical values as a function of the number of steps two means are apart on an ordered scale, the critical value for the maximum number of steps is used for all tests. This approach, suggested by Fisher, has been studied and extended by Tukey and has been called the honestly significant difference procedure.2

The principle that emerges is this: When one attempts to draw inferences from statistics determined by taking into account the order of magnitude of the observation within an experiment, the appropriate sampling distribution depends upon the number of ordered steps between the observations from which the statistic was computed. A modified q statistic is particularly useful in probing the nature of the differences between treatment means. . . . A considerably more conservative procedure in terms of keeping


2Ibid., p. 87.
the Type 1 error small is the uses of q as the critical value for all tests, no matter how many steps apart the means may be.¹

The formula for the q statistic was derived by Winer and follows this explanation.

\[ q = \frac{T_{\text{largest}} - T_{\text{smallest}}}{\text{MS error}/n} \]

where \( n \) is the number of observations in each \( T \). A numerically equivalent form of the q statistic is given by

\[ q = \frac{T_{\text{largest}} - T_{\text{smallest}}}{n \text{ MS error}} \]

where a \( T \) represents a sum of \( n \) observation. Computationally it is more convenient to compute first the following statistic:

\[ F_{\text{range}} = \frac{T_{\text{largest}} - T_{\text{smallest}}}{2n \text{ MS error}} \]

Then \( q \) may readily be shown to be equal to

\[ q = \sqrt{\frac{2}{F_{\text{range}}}} \]

Under the hypothesis that \( T_1 = T_2 = T_3 \), the sampling distribution of the q statistic is approximated by the studentized range distribution having parameters \( k = \) number of treatments and \( f = \) degrees of freedom for MS error.²

Newman-Keuls was selected too because it is a powerful analysis of variance and can be used for a priori comparisons. A priori comparisons are formulated prior to and as part of the design of the experiment.³, ⁴

¹Ibid., p. 81 and 87.
²Ibid., p. 78.
³Ibid., p. 85.
The specific comparisons which are built into the design or suggested by the theoretical basis for the experiment can and should be made individually, regardless of the outcome of the corresponding over-all F test.\(^1\)

In contrast to an over-all F ratio which uses all the treatment means to obtain the numerator, the \(q\) statistic uses only the two means that are to be compared. Thus, the Newman-Keuls procedure, using the \(q\) statistic, resulted in Analysis of Variance that submitted statistical information pertinent to 1) between group variance, 2) within group variance (time x groups from pre to post test), and 3) interaction variance. Tables showing results of the analyses of variance are found in Chapter IV.

\(^1\)Winer, op. cit., p. 208.
CHAPTER IV

ANALYSIS OF DATA

The basic data for this study on self-concept changes were derived from the administration of an instrument incorporating fifty self reference statements using Q-sort methodology. Each subject distributed the statements along a continuum according to the way she perceived her self to be from "least like me" to "most like me." She then sorted the statements a second time according to her ideal self, the way she would like to be. The Q-sort technique was administered within a test-retest structure with the pre-Q-sort being given before any class instruction began and the post-Q-sort given upon completion of all class instruction. Both the experimental groups, television and non-television, and the control group completed the Q sorts on the same days both on the pre and post tests.

In order to determine if any significant changes occurred in self-concept within the experimental groups due to their treatments, it was necessary to determine first the correlation or relationship that existed between the perceived self sort and the ideal self sort for each subject. A term given to this relationship is discrepancy correlation. The closer the perceived self sort was to the ideal self sort, the higher the coefficient correlation because the discrepancy between the two was small. The farther apart they were, the more discrepancy existed and the lower was the correlation on the correlation scale. When the discrepancy was great, the correlation was low; when the discrepancy was
small, the correlation was high. Many authors use the term congruence
instead of discrepancy to define the distance between the self and the
ideal; however, they refer to the same relationship.

Coefficient correlations were computed for all subjects on the
pre-Q-sort and on the post-Q-sort. The means for each group were cal-
culated on pre and post tests but were not used for statistical purposes.
They were used in discussing the implications involved in reasons for
change in Chapter V. Tables 1, 2, 3 list the coefficients of correla-
tion for subjects in Groups A, B, C on pre and post tests. The
direction and magnitude of differences between pre and post-Q sorts were
included for each subject.

Table 4 shows a breakdown of each group taken as a whole unit.
The last column of Table 4 contains the data showing the difference
between the two means. The term used in Q-sort methodology to describe
the movement of correlations on the scale from one sort to another is
called the displacement difference on the range.

For statistical purposes all coefficients of correlations were
transferred to Fisher's z's. Tables 5, 6, 7 list the z's for each
subject by groups on both Pre and Post Q-sort tests. The means were
calculated for each group on both pre and post tests. They are listed
in Table 8. Column three lists the direction and magnitude of the
differences for each subject.

The mean for Group A (television) on the pre Q-sort was .494.
On the post-Q-sort the mean was .775 showing a difference of .281.
TABLE 1

COEFFICIENTS OF CORRELATION
GROUP A (TELEVISION)

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>Q-SORT (pre)</th>
<th>Q-SORT (post)</th>
<th>DIFFERENCE</th>
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</thead>
<tbody>
<tr>
<td>1. Ben</td>
<td>.711</td>
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<td>2. Bra</td>
<td>.519</td>
<td>.673</td>
<td>.154</td>
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<td>3. Gla</td>
<td>.403</td>
<td>.836</td>
<td>.433</td>
</tr>
<tr>
<td>4. Col</td>
<td>.500</td>
<td>.826</td>
<td>.326</td>
</tr>
<tr>
<td>5. Dan</td>
<td>.605</td>
<td>.778</td>
<td>.173</td>
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<td>6. Det</td>
<td>.288</td>
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<td>.115</td>
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<tr>
<td>7. Dic</td>
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<td>-.096</td>
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<td>8. Gal</td>
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<td>.894</td>
<td>.154</td>
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<tr>
<td>9. Gui</td>
<td>.769</td>
<td>.836</td>
<td>.067</td>
</tr>
<tr>
<td>10. Gue</td>
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<td>-.019</td>
</tr>
<tr>
<td>11. Guy</td>
<td>.461</td>
<td>-.067</td>
<td>-.528</td>
</tr>
<tr>
<td>12. Han</td>
<td>.509</td>
<td>.682</td>
<td>.173</td>
</tr>
<tr>
<td>13. Har</td>
<td>.567</td>
<td>.500</td>
<td>-.067</td>
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<tr>
<td>14. Hau</td>
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<td>-.096</td>
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<tr>
<td>34. Win</td>
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<td>-.307</td>
<td>.231</td>
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</tbody>
</table>

Totals 13.892 19.418

\[ M = .408 \quad M = .571 \]
### TABLE 2

**COEFFICIENTS OF CORRELATIONS**

**GROUP B (NON-TELEVISION)**

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>Q-SORT (pre)</th>
<th>Q-SORT (post)</th>
<th>DIFFERENCE</th>
</tr>
</thead>
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<tr>
<td>1. Alc</td>
<td>0.548</td>
<td>0.490</td>
<td>-0.058</td>
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<td>2. Bau</td>
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<td>0.807</td>
<td>0.616</td>
</tr>
<tr>
<td>3. Bur</td>
<td>0.461</td>
<td>0.384</td>
<td>-0.077</td>
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<td>4. Cha</td>
<td>0.221</td>
<td>0.576</td>
<td>0.355</td>
</tr>
<tr>
<td>5. Cla</td>
<td>0.538</td>
<td>0.750</td>
<td>0.212</td>
</tr>
<tr>
<td>6. Con</td>
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<td>0.749</td>
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<td>7. Cou</td>
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<td>-0.298</td>
</tr>
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<td>8. Dan</td>
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<td>0.221</td>
</tr>
<tr>
<td>9. Die</td>
<td>0.701</td>
<td>0.913</td>
<td>0.212</td>
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<td>10. Dro</td>
<td>0.413</td>
<td>0.817</td>
<td>0.404</td>
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<td>11. Gat</td>
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<td>0.096</td>
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**Totals** 13.686 19.597

\[ M = 0.391 \quad M = 0.576 \]
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Totals = 10.952 = 13.362

M = .322 M = .393
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Totals 16.847 25.401

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<td>.318</td>
<td>.032</td>
</tr>
<tr>
<td>Rog</td>
<td>.067</td>
<td>-.204</td>
<td>-.271</td>
</tr>
<tr>
<td>Sch</td>
<td>1.093</td>
<td>.951</td>
<td>-.142</td>
</tr>
<tr>
<td>Sch</td>
<td>.383</td>
<td>.487</td>
<td>.104</td>
</tr>
<tr>
<td>Smi</td>
<td>-.048</td>
<td>.164</td>
<td>.212</td>
</tr>
<tr>
<td>Ste</td>
<td>-.428</td>
<td>-.204</td>
<td>.224</td>
</tr>
<tr>
<td>War</td>
<td>-.028</td>
<td>.086</td>
<td>.114</td>
</tr>
<tr>
<td>Yan</td>
<td>-.145</td>
<td>.164</td>
<td>.309</td>
</tr>
</tbody>
</table>

Totals 13.123 17.211
Means = .385 .506 .121
The mean for Group B (traditional method) was .495 on the pre-Q-sort and .747 on the post-Q-sort showing a difference of .252.

For Group C (control group), the mean on the pre-Q-sort was .385 and on the post-Q-sort the mean was .506 showing a difference of .121.

**TABLE 8**

**GROUP MEANS FOR FISHER z TRANSFORMATIONS ON PRE AND POST Q-SORTS**

<table>
<thead>
<tr>
<th>SOURCE OF MEANS</th>
<th>PRE-Q-SORT</th>
<th>POST-Q-SORT</th>
<th>DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A (Television)</td>
<td>.494</td>
<td>.775</td>
<td>.281</td>
</tr>
<tr>
<td>Group B (Traditional)</td>
<td>.495</td>
<td>.747</td>
<td>.282</td>
</tr>
<tr>
<td>Group C (Control)</td>
<td>.385</td>
<td>.506</td>
<td>.121</td>
</tr>
</tbody>
</table>

Using Newman-Keuls procedure, an Analysis of Variance was used to find the F-ratio for Between Groups variance, Within Groups variance, (time variance), and Interaction variance. (Groups x time) A summary of the findings is presented in Table 9.

The Between groups variance was not significant at the .05 level of confidence. In this case the variability between groups due to treatments was not different enough to be significant. Two groups, A and B, were so close that it would be difficult to obtain a significance between groups.
The Within groups variance was extremely significant at the .05 level. It was significant beyond the .01 level. The treatments administered to the groups reflected in a very significant variability from the pre-test to the post-test, within the groups.

**TABLE 9**

**ANALYSIS OF VARIANCE**

<table>
<thead>
<tr>
<th>SOURCE OF VARIANCE</th>
<th>SUM OF SQUARES</th>
<th>DEGREES OF FREEDOM</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1.510</td>
<td>2</td>
<td>.755</td>
<td>2.072</td>
</tr>
<tr>
<td>Error</td>
<td>36.065</td>
<td>99</td>
<td>.364</td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>2.414</td>
<td>1</td>
<td>2.414</td>
<td>36.556 **</td>
</tr>
<tr>
<td>(time)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction</td>
<td>.247</td>
<td>2</td>
<td>.124</td>
<td>1.873</td>
</tr>
<tr>
<td>(Groups x time)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>6.537</td>
<td>99</td>
<td>.066</td>
<td></td>
</tr>
</tbody>
</table>

** Significant at .01 level.

The Interaction variance was found to be not significant at the .05 level. Interaction refers to the unique effects of combination of treatments. In general when a number of individuals or items are grouped according to several factors of classification and these factors are not independent, there is said to be interaction between them. The variability that exists among the post means is used to determine the interaction factor.

Newman-Keuls procedure makes it possible to analyze further each one of these components separately. The resulting Newman-Keuls comparisons should be referred to Newman-Keuls, Duncan tables in Winer or
Edwards. 1, 2 Winer lists the table under "Distribution of Studentized Range Statistic." Edwards lists the table as "Significant Ranges for Duncan's New Multiple Range Test." These comparisons are considered to be comparable to F tests.

When the two means, pre and post, were pooled for each group to determine the overall measure of Q-sort correlations (transformed to Fisher z's), the results showed that no significant difference existed between groups at the .05 level. When individual groups were compared by Newman-Keuls analysis, to show intergroup differences, there were no significant differences between any of the comparisons at the .05 level. There was, however, significant difference between A and C and B and C at the .10 level of confidence. The following table shows the results of between group comparisons:

**TABLE 10**

**BETWEEN GROUP VARIANCE**

<table>
<thead>
<tr>
<th>SOURCE OF VARIANCE</th>
<th>STANDARD ERROR</th>
<th>NEWMAN-KEULS DUNCAN COMPARISON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups A and B</td>
<td>.073</td>
<td>.191</td>
</tr>
<tr>
<td>Groups A and C</td>
<td>.073</td>
<td>2.59</td>
</tr>
<tr>
<td>Groups B and C</td>
<td>.073</td>
<td>2.39</td>
</tr>
</tbody>
</table>

.05 level - 2.83

1Winer, op. cit., p. 648.

2Edwards, op. cit., p. 373.
When the means were pooled across the groups to show the difference that existed between the pre test and the post test according to time, there was found to be significance at the .05 level. In fact it was significant beyond the .001 level. This means there was a significant difference in the means from the time of the pre-test until the time of the post-test.

Since changes occurred in the overall "within groups" analysis that were significant, it should be determined which individual groups changed significantly from the pre-test to the post-test. Newman-Keuls procedure broke down the within-group analysis. It was found that Group A, the television group, and Group B, the non-television or group using traditional method, changed significantly at the .05 level. Group C, the control group and not enrolled in a basic physical education course, showed no significant change at the .05 level. The following table shows the pre and post test results.

TABLE 11
WITHIN-GROUP VARIANCE

<table>
<thead>
<tr>
<th>SOURCE OF VARIANCE</th>
<th>STANDARD ERROR</th>
<th>PRE-TEST</th>
<th>POST-TEST</th>
<th>DIFFERENCE</th>
<th>NEWMAN-KEULS COMPARISON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>.080</td>
<td>.495</td>
<td>.775</td>
<td>.281</td>
<td>3.51 *</td>
</tr>
<tr>
<td>Group B</td>
<td>.080</td>
<td>.495</td>
<td>.747</td>
<td>.252</td>
<td>3.15 *</td>
</tr>
<tr>
<td>Group C</td>
<td>.080</td>
<td>.386</td>
<td>.506</td>
<td>.120</td>
<td>.15</td>
</tr>
</tbody>
</table>

* Significant at .05 level

The interaction variance was found to be not significant at the
.05 level. Two means were very close, A and B, at the end of the experiment. The following graph depicts the linear regression of the three groups means from pre to post test. (See p. 76.)

The meaningful comparisons of differences should be analyzed as to the homogeneity variance between groups at the beginning of the study and at the end. Two groups (A and B) started at the same point on the correlation scale, but Newman-Keuls analysis of variance computations determined that the variance between all groups at the beginning of the study was not significantly different at the .05 level. Table 7 shows the Newman-Keuls comparisons at the beginning of the study and the comparisons at the end of the study. The variances at completion of the study were found to be significant at the .05 level for A and C, and B and C. The difference between A and B was found to be not significant at the .05 level.

Table 12 shows the comparisons of all groups at pre-test and at post-test.

** Table 12 **

<table>
<thead>
<tr>
<th>COMPARISONS OF GROUPS</th>
<th>STANDARD ERROR</th>
<th>NEWMAN-KEULS DUNCAN COMPARISONS (PRE-TEST)</th>
<th>NEWMAN-KEULS DUNCAN COMPARISONS (POST-TEST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A and B</td>
<td>.044</td>
<td>.022</td>
<td>.636</td>
</tr>
<tr>
<td>A and C</td>
<td>.044</td>
<td>2.4</td>
<td>6.113 **</td>
</tr>
<tr>
<td>B and C</td>
<td>.044</td>
<td>2.5</td>
<td>5.470 **</td>
</tr>
</tbody>
</table>

** Significant at the .01 level.**
Fig. 3 Interaction Variance

- A (television group)
- B (non-television group)
- C (control group)
Based on the findings of the study it is possible to accept or reject the hypotheses as stated at the beginning of the experiment.

**Hypothesis 1.** There is no significant difference in self-concept changes between a group of college freshmen women enrolled in a television basic physical education course and a group of college freshmen women enrolled in a non-television basic physical education course.

The Newman-Keuls-Duncan comparison ratio of .636 was not significant at the .05 level; therefore, the hypothesis was accepted as stated.

**Hypothesis 2.** There is no significant difference in self-concept changes between a group of college freshmen women enrolled in a television basic physical education course and a group of college freshmen women not involved in a basic physical education course in any way.

The Newman-Keuls-Duncan comparison ratio of 6.113 was significant at the .05 level; therefore, the hypothesis was rejected as stated. The ratio was significant at beyond the .001 level.

**Hypothesis 3.** There is no significant difference in self-concept changes between a group of college freshmen women enrolled in a
non-television basic physical education
course and a group of college freshmen
women not involved with the basic
physical education course in any way.

The Newman-Keuls-Duncan ratio of 5.470 was significant at
the .05 level; therefore, the hypothesis was rejected as stated.
The ratio was significant beyond the .001 level.

Analysis of Self Concept Changes

The Q-Sort technique as used in this study indicated the dis­
crepancy relationship between each subject's perceived self and the ideal
self. The manner in which subjects sorted the fifty self-reference
statements should be analyzed to determine which of the statements
showed the greatest change. The major objective of the basic course was
to help students realize the psychological and sociological implications
derived from an awareness of their physical self image and its potentials.
The psychological implications implied are interrelated with personality
traits and mental health criteria. As the self emerges more clearly
during adolescence, there is continued growth of the self-concept, an
element of personality development that theorists have come to recognize
as one of the most important determinants of adequate adjustment and
mental health.

To clarify the basic viewpoint of personality as it relates to
self, Schneider's definition was used in the study of personality.\(^1\)

\(^1\)Schneider, op. cit., p. 57.
An emergent, unique organization of physical and psychological traits, capacities, dispositions, habits, and mannerisms which, peculiar to an individual human being, determine his reactions to himself and to others and his impressions on the environment of persons, things, and customs in which he lives.

Marie Jahoda lists similar categories in her study to determine the psychological meanings of various criteria for positive mental health.¹

1. Attitudes of the individual toward himself. Self image attitudes as self acceptance, self confidence, self reliance, self esteem, self respect, self identity all relate to the same function of self.

2. Realization of potentials through action. Self actualization through growth and development are inherent in this category.

3. Integration and good directedness. Unity signifies harmony within the mind and personality as to wishes, thoughts, ambitions, desires, purposes and behavior.

4. Autonomy. The individual's degree of independence of social influences leads to self discipline.

5. Perception of reality. Adjustment to the world of things, people, and events is determined to a large measure by a person's perception of reality.

6. Environmental matter. One must be able to take life as it comes and master it.

Sociological factors implied are the individual's environment, the society in which he lives, and the interaction process, his social functioning with other persons. These social forces affect the individual's mental health.

Based on the cited psychological and sociological implications, an analysis of the Q-sorting was made to determine which statements

changed place on the scale on the second sort. Seven women, whose improvement in discrepancy relationship changed the greatest were selected for analysis. Each statement was recorded as each subject sorted it both on the pre-Q-sort and post-Q-sort. If the statement "I am lonely" was sorted in the fourth pile on the first sort and in the second pile on the second sort, it was recorded as -2 to indicate amount and direction of change. The following statements were changed the greatest amount in a positive direction, meaning they were placed higher on the continuum of "least like me" toward "more like me." They are listed in order of greatest change

1. I have confidence in social situations.
2. I stand up well under stress and frustration.
3. I have pretty good insights into myself.
4. My mood is fairly even and consistent.
5. I feel inferior.
6. I am easy going and carefree.
7. I strive to become independent.
8. I have a strong sense of responsibility.
9. I am intelligent.
10. I think along rather conventional lines.

The following statements that were changed the greatest in a negative direction, meaning they were moved from a position "most like me" to a point closer to "least like me." They are listed in order of greatest change. A greater number of statements changed in a negative direction than was true of the positive change.
1. When tense and anxious, I am likely to get headaches or otherwise physically upset.

2. My behavior is immature.

3. I am typically worried.

4. I feel lonely.

5. I tend to withdraw and not become involved with others.

6. I get things done; I don't procrastinate.

7. I am disturbed by sexual conflicts.

8. I have mixed feelings of love and anger in regard to persons I'm closest to (parents, etc.)

9. Sometimes I wish I had been born of the opposite sex.

10. When under a lot of stress, I sometimes misunderstand or distort what I see and hear.

11. I seem to turn aggression toward myself.

12. I use fantasy and daydreams for escape and substitute gratification.

13. I tend to be rebellious.

14. I do best in situations where things are spelled out.

15. I don't trust others.

16. I react to others in a passive way.

There is sufficient evidence to conclude that self-concept did change involving psychological and sociological implications. General observations as to the change seems to indicate that acceptance of self increased on the second sort. The subjects appeared to perceive themselves as persons of worth, worthy of more respect than condemnation.
It was indicated that the subjects perceived their actions and values as being based upon their own experiences, rather than upon the attitudes or desires of others. Perhaps this tone is in keeping with the emphasis on an existentialistic philosophy ascribed to by our younger population. There was an indication that the subjects were able to perceive their own feelings, motives, and personal experiences without distorting the basic facts. There was increased insight into their self structure.

An interesting analogy could be made to patients who have undergone therapy. The changes in self perception were summarized by Rogers who states

... that changes occur in three general ways. The patient perceives himself as a more adequate person, with more worth and more possibility of meeting life. He permits more experimental data to enter awareness and thus achieves a more realistic appraisal of himself, his relationships, and his environment. He tends to place the basis of standards within himself, recognizing that the "goodness" or "badness" of any experience of perceptual object is not something inherent in that object, but it is a value placed on it by himself.1

In contrast to the improvement made by the majority of subjects, there were some whose discrepancy relationship did not improve over the period of the course. There was less commonality noted among these subjects taken as a group. The only statement that changed to a great extent, and that in a negative direction, meaning it moved closer to "least like me" was the statement: "I set high standards of achievement for myself." Other statements follow that changed to a lesser degree in

a positive direction. These attitudes moved closer to "most like me"

1. I seem to forget painful things and keep them out of my mind.
2. I seem to turn aggression toward myself.
3. I rush into activity as a means of escaping from problems.
4. I tend to suppress my emotions.
5. I am typically worried.
6. I react to others in a passive manner.
7. I tend to project the blame for things on others.
8. Sometimes I get very confused, almost disoriented.
9. I behave in such a way as to gain attention.
10. I tend to withdraw and not become involved with others.
11. I actively seek affection.
12. I use fantasy and daydreams for escape and substitute gratification.
13. I try to be very feminine.

Statements that changed order in a negative direction but to a small degree were these in order of change. These attitudes moved closer to "least like me."

1. I strive to become independent.
2. I am suggestible.
3. My mood is fairly even and consistent.
4. I am a likeable person.
5. When tense and anxious, I am likely to get headaches or otherwise physically upset.
6. I tend to view the world as a jungle.
7. I have pretty good insight into myself
8. I get things done; I don't procrastinate.
9. I tend to want things to be neat and orderly.
10. I am intelligent.

The women whose discrepancy relationship became greater or whose coefficient correlations did not improve usually dropped on the post-Q-sort merely a few points on the correlation scale. Three women, however, changed quite drastically on the post test, one going from .46 to -.06, another from .81 to a .56 and another from .33 to .03.

All the subjects were college freshmen women in their first quarter of college. For many it was their first experience away from home. The post test was given before the week of their first final exam period. This period could have been a traumatic one for some of the freshmen women.

It is beyond the scope of this study to analyze too deeply the reasons behind the changes. Recent studies have shown that there may be other causes for greater disparity between actual and ideal selves. Katz and Zigler stated that self image disparity increases with increasing maturity and that the real - ideal self disparity was found to be a positive function of both chronological age and I.Q. Contrary
to Rogerian theory, the magnitude of the disparity was unrelated to the level of the individual's psychological adjustment.¹

Brownfain's study showed that college students having unstable self concept made better grades and were rated more intelligent than students having stable self concepts.²

Other studies have shown that the high developmental person (high maturity level) makes greater self demands and is more often unable to fulfill them and consequently experiences more guilt than the low developmental person. The more mature person makes fine distinctions and is more apt to rate himself lower or change his rating of himself.

Research at the present time does not agree on reasons for greater discrepancy relationships in normal persons.

Promising research has demonstrated that individuals do not accept or reject themselves totally but accept or reject themselves in some areas and not in others. Thus the individual's self concept does not seem to be a unified gestalt but rather consists of characteristics or dimensions which he values differentially. The individual does not think of himself as being totally good or totally bad but rather evaluates various areas in different ways.³


CHAPTER V

CONCLUSIONS AND DISCUSSIONS

The purpose of this study was to determine if the self-concept of college freshmen women changed when enrolled in a basic physical education course that used two different methods of instruction, one instructional television and the other a traditional approach.

One hundred two freshmen women at Kent State University were divided into three groups. One experimental group was taught using instructional television in a basic physical education course, "Foundations for Fitness" and one experimental group used the traditional approach of lecture and discussion. The control group, a "zero" group, was selected from individuals enrolled in three sports classes, swimming, badminton and volleyball. These subjects were not involved in any way with the basic course.

All subjects were given a pre-test consisting of sorting fifty self referent statements into a distribution in keeping with Q-sort methodology, originally used by Stephenson. The instrument used was a Q-Sort designed by Page and Pattinato at Kent State University. The statements were sorted according to how each subject perceived herself to be and a second time according to her ideal self, the way she would like to be. Upon completion of the course the Q-sort was administered again as a post-test in exactly the same manner.
Both experimental classes were taught by the same instructor. Ten video tapes were prepared prior to the course by this same instructor and were based on major concepts dealing with fitness and movement. The content for the tapes was based on physical self image, relaxation, flexibility, strength, cardiovascular endurance, posture, balance, principles of movement, weight control, and rhythm. All external variables were kept as constant as possible for all groups.

For statistical procedures, the coefficient correlations from the Q-sorts based on Pearson Product Moment correlation method, were transformed to Fisher z's. Means were calculated from both pre and post Q-sorts. The difference of the means was used in an analysis of variance using Newman-Keuls multiple comparison method. Variances for between groups, within groups, and interaction were found.

Summary of the Findings

Results of the statistical tests of the hypotheses showed no significant difference in self-concept changes between the group taught by television and the group that used traditional methods; however, both groups showed significant changes in self-concept.

There was a significant difference between the group using television instruction and the control group in self-concept changes. The control group was not enrolled in the basic physical education course; this group received instruction in sports such as badminton, swimming, and volleyball. Their self-concepts changed but not to a significant degree.
Between the traditionally taught class and the control group, there was a significant difference in self-concept changes. For most of the subjects in both the experimental groups, self-concepts changed resulting in less discrepancy between the perceived self and ideal self.

Conclusions

The findings of the study justify the following conclusions concerning self-concept attitude changes

1. The use of instructional television appeared to be as effective as traditional methods in changing the self concept of college freshmen women enrolled in a basic physical education course.

2. The freshmen women enrolled in a basic physical education course taught by instructional television one or two periods a week changed their self concept more than college freshmen women who were not enrolled in such a basic course.

3. Freshmen women enrolled in a basic physical education course taught by traditional methods changed their self-concepts more than did the women not enrolled in a basic physical education course.

4. Regardless of the method used in teaching the basic physical education course, it was more effective in improving perceived self-ideal self congruence than were the sports classes.
Generalizations from these conclusions must be made with due consideration given to the limitations cited in Chapter I.

Recommendations for Further Study

The findings of any investigation as completed under existing limitations generate a recognition of need for further research into the problem. The following recommendations for research based on the study are listed.

1. It would be highly desirable to replicate the study stating the same hypotheses but changing the variables. This study involved subjects taught by one instructor. While the results were significant, it would be beneficial to know whether the same results would accrue under different instructors, and under different external conditions.

2. Further research should be encouraged in the area of body image, the effects of loss of weight, and gain of muscle tone, and its relationship to self concept. All facets of the basic course pertaining to change should be studied and evaluated as to which changes in physical image affect the self concept the greatest. Perhaps an instrument using Q-sort technique could be developed to ascertain correlations of these areas.
3. A definitive analysis of the directions and amount of change in the available Q-sort data would increase knowledge as to what was involved. Where did the greatest change occur—between the perceived self sort on the first and second sorts, or was it between the ideal sorts? What was the correlation between the ideal sort on the first test and the perceived self on the second test? Did they move closer together? A factor analysis could be employed to study further the types of changes that occurred.

4. From the women who improved the greatest and from the women who did not improve it would be interesting to draw information on a personal interview basis to determine if there is any common core of characteristics. Repertory grids based on George Kelly's Construct Theory would indeed exhibit meaningful phenomena relevant to the self-concept.¹

5. To determine whether the significant results of this study are permanent or transitory, it would be desirable to perform a follow-up study using subjects who have completed the basic course and are now juniors, seniors

in college, or have been graduated from college, two, three and five years.

Only after determined and conscientious research has been completed will we as educators really know the true relationship existing between all phases of physical education and the self concept.
SELF CONCEPT Q-SORT  
PAGE AND PATTINATO  
KENT STATE UNIVERSITY  

1. I am a likeable person  
2. When tense and anxious, I am likely to get headaches or otherwise physically upset  
3. Sometimes I wish I had been born of the opposite sex  
4. I think along rather conventional lines  
5. I am intelligent  
6. I am disturbed by sexual conflicts  
7. I am easy going and carefree  
8. I am imaginative  
9. I stand up well under stress and frustration  
10. I feel inferior  
11. I adapt readily to new situations  
12. I try to be very feminine  
13. I have a strong sense of responsibility  
14. When under a lot of stress, I sometimes misunderstand or distort what I see and hear  
15. I seem to forget painful things and keep them out of mind  
16. I seem to turn aggression toward myself  
17. I get anxious when I deal with people who have authority  
18. I tend to suppress my emotions  
19. I am typically worried  
20. I have a practical, down to earth orientation towards life  
21. With others I usually try to fill a dominant role  
22. I set high standards of achievement for myself  
23. It is very difficult for me to tolerate any strong feelings of anger in myself  
24. I tend to view the world as a "jungle"  
25. I use fantasy and daydreams for escape and substitute gratification  
26. I seem to be able to understand and empathize with others  
27. I strive to become independent  
28. My behavior is immature  
29. I react to others in a passive manner  
30. I have confidence in social situations  
31. I actively seek affection  
32. I do best in situations where things are spelled out  
33. I feel lonely  
34. Sometimes I get angry and act destructively  
35. I tend to want things to be neat and orderly  
36. I tend to be rebellious  
37. I have strong moral standards  
38. My mood is fairly even and consistent  
39. I don't trust others  
40. I tend to project the blame for things on others  
41. I find it easier to think about personal problems in a very abstract way
42. I get things done, I don't procrastinate
43. I tend to withdraw and not become involved with others
44. I behave in such a way as to gain attention
45. Sometimes I get very confused, almost disoriented
46. I am suggestible
47. I have pretty good insight into myself
48. I am generally optimistic
49. I have mixed feelings of love and anger in regard to the person I'm closest to (parents, spouse, etc.)
50. I rush into activity as a means of escaping from problems
CARL ROGERS

THEORY OF PERSONALITY AND BEHAVIOR

I. Every individual exists in a continually changing world of experience of which he is the center.

II. The organism reacts to the field as it is experienced and perceived. This perceptual field is, for the individual, "reality."

III. The organism reacts as an organized whole to this phenomenal field.

IV. The organism has one basic tendency and striving—to actualize, maintain, and enhance the experiencing organism.

V. Behavior is basically the goal-directed attempt of the organism to satisfy its needs as experienced, in the field as perceived.

VI. Emotion accompanies and in general facilitates such goal-directed behavior, the kind of emotion being related to the seeking versus the consummatory aspects of the behavior, and the intensity of the emotion being related to the perceived significance of the behavior for the maintenance and enhancement of the organism.

VII. The best vantage point for understanding behavior is from the internal frame of reference of the individual himself.

VIII. A portion of the total perceptual field gradually becomes differentiated as the self.

IX. As a result of interaction with the environment, and particularly as a result of evaluational interaction with others, the structure of self is formed—an organized, fluid, but consistent conceptual pattern of perceptions of characteristics and relationships of the "I" or the "me," together with values attached to these concepts.

X. The values attached to experiences, and the values which are a part of the self structure, in some instances are values experienced directly by the organism, and in some instances are values introjected or taken over from others, but perceived in distorted fashion, as if they had been experienced directly.

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XI. As experiences occur in the life of the individual, they are either (a) symbolized, perceived, and organized into some relationship to the self, (b) ignored because there is no perceived relationship to the self-structure, (c) denied symbolization or given a distorted symbolization because the experience is inconsistent with the structure of the self.

XII. Most of the ways of behaving which are adopted by the organism are those which are consistent with the concept of self.

XIII. Behavior may, in some instances, be brought about by organic experiences and needs which have not been symbolized. Such behavior may be inconsistent with the structure of the self, but in such instances the behavior is not "owned" by the individual.

XIV. Psychological maladjustment exists when the organism denies to awareness significant sensory and visceral experiences, which consequently are not symbolized and organized into the gestalt of the self-structure. When this situation exists, there is a basic or potential psychological tension.

XV. Psychological adjustment exists when the concept of the self is such that all the sensory and visceral experiences of the organism are, or may be, assimilated on a symbolic level into a consistent relationship with the concept of self.

XVI. Any experience which is inconsistent with the organization or structure of self may be perceived as a threat, and the more of these perceptions there are, the more rigidly the self-structure is organized to maintain itself.

XVII. Under certain conditions, involving primarily complete absence of any threat to the self-structure, experiences which are inconsistent with it may be perceived, and examined, and the structure of self revised to assimilate and include such experiences.

XVIII. When the individual perceives and accepts into one consistent and integrated system all his sensory and visceral experiences, then he is necessarily more understanding of others and is more accepting of others as separate individuals.

XIX. As the individual perceives and accepts into his self-structure more of his organic experiences, he finds that he is replacing his present value system—based so largely upon introjections which have been distortedly symbolized—with a continuing organismic valuing process.
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