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A USE OF THE SEMANTIC DIFFERENTIAL
TO DETERMINE THE PERCEPTIONS OF STUDENTS
TOWARD WOMEN HIGH SCHOOL PHYSICAL EDUCATION TEACHERS

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
1970

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CHAPTER I

INTRODUCTION

Physical educators exhibit concern regarding the status of their profession in the academic hierarchy, and some physical educators feel that the profession occupies a reduced status in the minds of others. This is a significant concern, as the image of any field is dependent upon the self-perception of its members as affected by peer group and public influences. This has been emphasized by Cook in the statement:

"The determining factor in job satisfaction is most likely to be a synthesis of statuses—the status of the individual within his occupation and the status of the occupation in the community."¹

There is evidence that perception may be distorted by an individual's motivation and attitudes. However, a reciprocal interaction between persons and groups affects the perceptions which are actually identified. As a result of these processes, individuals tend to categorize ideas about themselves as well as groups to which they belong. Once perceptual phenomena form a constant and unchanging impression, a stereotype has been created. "The tendency toward stereo-

¹Walter W. Cook and Robert Callis, Minnesota Teacher Attitude Inventory (New York: Psychological Corporation, 1951), p. 4.
typing frequently involves a complete pattern of opinions and beliefs around which public opinion formation revolves."

Stereotyping, however, may be either positive or negative, and as such, influences the perceptions of members of a group.

It is toward such issues that members of a profession should become attentive and should seek to establish the underlying causes of concern. There is a need to identify roles and images attached to physical educators, as groups tend to conceive of themselves in light of the perceptions of others. Perception is a term widely used in the field of social psychology, and is usually used to describe the manner in which a person perceives or infers the traits and intentions of another.

The concepts of persons and groups is built up largely from the perceived reactions and attitudes expressed by others. Behavior is influenced by the feelings that are assumed to be aroused in others.

Concepts stemming from the coordinate notions of self and role have been extensively employed by social psychologists and personologists in discussing interactional behavior. . . . A role is defined as the content common to the role expectations of the members of a social group.

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Therefore, the way one believes he is perceived by others may be a strong factor in shaping levels of aspiration and defense against loss of self-respect. Roles may be established in light of these perceptions.

It is with concern that teachers endeavor to determine their role within society, for the very nature of their profession dictates a public image created for them. As Locke and Nixon state in regard to physical educators: "Surely people are shaped by their occupations. We internalize the demands of our role until they become a permanent part of our personality."\(^5\)

A man's interests may be patterned by society, and he may be trained to expect what is valued in that society. Part of the image of man is inextricably entwined with a public image of the organizations in which he plays a role or which comprise his environment. This is a matter of concern, as "... to understand the manner in which man responds to and copes with his social environment we must know what that environment is to him."\(^6\)

Research endeavors to explore and explain man's environment, both real and perceived. The perceptions others have toward him affects the understanding of his environment and the way he feels about himself.


\(^6\)Bruner, op. cit., p. 369.
For man as an individual has a deep and emotional investment in his image of himself... man has powerful and exquisite capacities for defending himself against violations of his cherished self-image.7

Teaching is often referred to as having a lower status than that enjoyed by other professions. The literature seems to suggest that perhaps physical educators within the teaching vocation are held in low esteem.

Teachers of health and physical education and coaches of interschool athletics particularly seem to have difficulty in this respect and in addition quite often fail to be accepted wholeheartedly by their colleagues within the teaching profession.8

The image which others have of the physical educator is often less than desirable. He may be envisioned in the minds of the general public "... as the abnormally muscular 'gym' teacher, sloppily dressed ... uncouth in his use of language, and lacking in scholarly attainments."9

An image that others may share of physical educators is the sum of the widely shared expectations that occur in regard to a group or role within a culture. Social scientists call this a "public image," as it is related to stereotyping.


In the words of Locke and Nixon: "Many people respond to the public school physical educator in such a manner as to suggest the operation of a well-defined stereotype." 10

The role of physical educators may be expanded or limited in accordance with the aspirations of the dominant forces within a society. These forces are important, and should not be ignored. Members of the profession should ask pertinent questions about the image and rank of physical education in the mind of society, for ". . . we cannot afford to remain unaware of their attitudes toward physical education." 11

Physical educators have a responsibility to determine the image which the public, their colleagues, and their students hold toward them as a group. Further research is needed to ascertain what this image really is before steps can be taken to strengthen or change it.

Statement of the Problem

The general purposes of this study are stated as follows:
1. To determine the favorability with which women students perceive women high school physical education teachers.
2. To compare the perceptions expressed toward women high school physical educators with those expressed toward

other women high school teachers.

3. To construct a form of the semantic differential which will ascertain the perceptions of students toward women high school physical education teachers.

Other purposes, or sub-problems are:

a. To compare the perceptions of women students toward high school physical education teachers with those perceptions of freshmen physical education majors toward high school physical education teachers.

b. To compare the perceptions of those students who indicated that they "liked" high school physical education with those who expressed a dislike.

c. To compare the perceptions of those students who indicated that they were "good" in high school physical education with those who indicated that they were poorly skilled.

**Significance of the Study**

It has already been pointed out that educators and particularly physical educators are concerned with their status as members of a profession. They are concerned not only with the regard of the public and their colleagues, but with the opinions of students. As Husek states:

> The measurement of attitudes toward teaching and the teaching profession is an important area of interest in education for a number of reasons. These include educators' concern about students' attitudes toward teaching because of the importance of recruiting superior students to the profession of education; the need to assess
attitudes toward the many innovations being introduced throughout the profession; and, of course, the fact that educators tend to be a self-conscious lot.12

The way the teacher is perceived by students may have a great deal to do with the students' and consequently the public's regard for the profession. There is some argument that the most significant variable in the classroom is the personality of the teacher. One meaning of personality is the appearance, even false appearance of the individual as socially perceived.13

A study at the University of Michigan illustrates the preceding point. A factor which influenced students' attitudes toward physical education was the extent to which the students felt the instructors were interested in them as individuals.14

Studies have also shown that personality characteristics of the teacher affect the social and emotional development and adjustment of children. Affective, personal, and human factors provide the basis for differentiating between well-liked and disliked teachers. Teacher attributes which


tend to bolster the security and self-esteem of pupils are rated highly.15

Just as business and industry are vitally concerned with the needs, interests, likes and dislikes of the consumer relative to the products of each company, so physical educators need to determine what the student feels toward the product, and more specifically toward those who administer it. Much effort has been devoted in research to ascertain the degree of favorability of students toward physical education, but little has been done to determine what factors influenced the formation of the expressed attitude.

The high school student's perception of the physical education teacher is doubly important from the standpoint of recruitment, if, according to a study by Schaeffer, "... most students who major in physical education make this decision in secondary school."16

Apparently the image of persons involved in a profession is important in other fields also. In a study regarding the college student's image of the scientist, the investigators found that

... the image influences the behavior of the student who has chosen science and


leads him to develop those aspects of his character most in keeping with the stereotype of the scientist... the image has the effect of recruiting a certain type of person and discouraging others.17

The characteristics of some physical educators may deter young people from a career in physical education. If these are manifested in a poor image, Ross may be correct in his statement of the comment of many girls:

'I like physical education and sports, but I'm not the physical education type.' Particularly among girls, an unflattering stereotype concept as implied by this statement defies our efforts to recruit them as members of our profession.18

Ulrich seems to agree with the concept of stereotyping and image. She feels that there is difficulty in recruiting women physical education teachers, and that the role needs to be made more attractive so that societal values can be identified with it.19

It is often acknowledged that in spite of the equality of social responsibility, the cultural heritage still insists that female status is lower than male status. Special problems are manifested for the woman interested in the sports world. Women in this field have demanded and gained ad-


mission to a group that was predominantly male. Women teachers of physical education in particular have a somewhat dubious position because of cultural inferences and societal values. A favorable "image" is important if the profession is to maintain respectability and is to attract a high level type of student of teacher candidacy.

Girls and women are unlikely to be impressed by strength, individual aggressiveness, and the competitive spirit. Instead, they are influenced by the popular concept of ideal femininity which is stereotyped by shapely girls with careful coiffures. "... A vigorous and athletic woman may be respected and admired but seldom emulated."21

The subject of women and their place in society has long been a fascinating and controversial subject. Scott-Maxwell has proposed that:

Society may lack clarity and even honesty in its concept of women. The very word is equivocal and leaves us uncertain. Who is meant and what is meant?22

According to a study by Reece, the typical female is considered rather lean, calm, industrious, and neither active nor passive. Stereotyped femininity is regarded as weak, ideal femininity as strong, but not as strong as man. The

20 Ulrich, Ibid., p. 69.


ideal female is considered kind, considerate, tender, gentle, very vigorous, delicate and graceful.\textsuperscript{23}

However, the role of women in society is constantly changing, and it is often difficult to grasp the implications. Useem has indicated that the changing concepts of women's roles are tied up with the changing concepts of the place of men and children in our society. These are interwoven in the overall changes which are prominent in American life itself.\textsuperscript{24}

The vivid image of a 'typical woman' is easily circulated by mass media today. However, Zapoleon feels that the actual picture of women and their work is complex and cannot be focused neatly into a single image.\textsuperscript{25}

In the American society, there is often a choice to accept or reject roles, and persons usually seek a position that is congenial to themselves, knowing that these roles will affect their image.

Although some authors tend to believe that it is not necessary to accept other people's images of oneself,\textsuperscript{26} this study is based on the belief currently held by social psycho-


logists that images are definitely important.

The role of a woman physical education teacher may or may not be a desirable one. However, we are not sure what the image of a woman physical education teacher is, especially in the minds of students. Nevertheless, the perceptions of others influence both one's own image and one's choice of roles. Research of the true image of women physical educators is lacking. For example, how does the image or picture created or elicited by women who teach physical education compare with the image of women who teach other subjects? Physical educators have a need and a responsibility to be aware of the way in which they are perceived by students and prospective teachers.

Hypotheses

The following hypotheses will be investigated:

1. The perceptions of women students toward women high school physical education teachers will be favorable.

2. There will be no significant difference in the perceptions of women students toward women high school physical education teachers and those perceptions toward other women high school teachers.

3. There will be no significant difference in the perceptions of freshman college women majoring in physical education toward women high school physical education teachers and those perceptions of non-majors toward women high school physical education teachers.

4. There will be no significant difference in the perceptions expressed toward women high school physical education teachers by those students who indicated they "liked" high
school physical education and those who expressed a dislike.

5. There will be no significant difference in the perceptions expressed toward women high school physical education teachers by those students who indicated that they were "good" in high school physical education and those who indicated that they were poorly skilled.

Assumptions

The above hypotheses are based upon the following assumptions:

1. That perceptions are measurable.
2. That perceptions are translatable into verbal symbols.
3. That a semantic differential will measure perceptions.
4. That the subjects will give honest opinions and true responses.

Limitations of the Study

1. All participants in the study were women.
2. Student's perceptions of women physical education teachers and other women teachers were limited to high school teachers.
3. A sample of Ohio State University first quarter freshmen women enrolled in the 1969 fall quarter basic physical education program were involved as participants.
4. Students who entered as first quarter freshmen and who were high school students the previous year were participants.
5. Students who participated in an organized high school program of physical education under the direction of a female physical educator were utilized.
6. The freshmen major group was limited to
freshmen women who had declared a major in physical education at The Ohio State University.
CHAPTER II

REVIEW OF LITERATURE

For many years investigators have been interested in the measurement of attitudes, perceptions, and meaning. Many measuring instruments exist, and the task of selecting a suitable one is often difficult. The two most widely reported approaches to attitude scale construction have been the Thurstone and Likert techniques. However, there are many other evaluative devices, and among these are Q-techniques, Kelly's Rep test, and the Semantic Differential.

Investigators often vary in their opinions of the value of different instruments. For example, in the study of personal concepts, Vernon states:

A strong point in favor both of the semantic differential and the Rep test, which cannot be claimed for Q-sorting, is that they may reveal concepts of which the person is barely aware, or which normally operate at the emotional level; i.e., they penetrate to our third level of self.¹

A Semantic Differential technique was chosen for this study and various types of literature regarding the technique

and its use have been explored. The present chapter is divided into three sections: The Semantic Differential; Use of The Semantic Differential in Physical Education Studies; Use of The Semantic Differential in Selected Studies Unrelated to Physical Education.

The Semantic Differential

The Semantic Differential is basically a measurement of meaning. There have been few attempts to subject meaning to quantitative measurement, and the term "meaning" itself has many definitions. However, there is common agreement that how a person behaves in a situation depends upon what that situation means or signifies to him. Osgood has expressed this idea as follows:

...that one of the most important factors in social activity is meaning and change in meaning—whether it be termed 'attitude,' or 'value,' or something else again.  

Osgood's meaning of "meaning" is:

... That process or state in the behavior of a sign—using organism which is assumed to be a necessary consequence of the reception of sign-stimuli and a necessary antecedent for the production of sign-responses.

C. W. Morris, in his semantic endeavors, has disregarded much of the effort to accurately determine any


workable and scientifically usable meaning of "meaning." He writes: "The popular meaning of the term covers a multitude of activities and operations and thus does not have the precision necessary for scientific analysis." On the other hand, Vinacke recognizes that important relationships exist between concept formation and use, and other psychological problems such as the nature and development of language and meaning.

A review of the literature revealed no widely accepted standardized instrument for the measurement of meaning prior to the semantic differential. Miller states that the semantic differential technique is one of the most promising approaches yet proposed. "Semantic conditioning, associative interference, word association, tachistoscopic recognition times, and the like are even more limited in scope."

The semantic differential was developed by Charles E. Osgood and associates at the Institute of Communications Research, University of Illinois, through research undertaken during the 1940's. The results of their research were reported in The Measurement of Meaning, which was published in 1957. In the subsequent ten years, the semantic differential...
ential has been used in a multitude of disciplines with quite satisfying results. Smith estimated that by January of 1966 an estimated five hundred experimental studies would have used some form of the semantic differential as a measuring instrument.

A combination of controlled association and scaling procedures constitutes the semantic differential. The subject is provided with a concept to be differentiated and a set of bipolar adjectival scales against which to differentiate. His task is to indicate, for each item (pairing of a concept with a scale), the direction of his association and its intensity on a seven-step scale. The term concept is used in a very general sense to refer to the "stimulus" to which the subjects checking operation is a terminal "response."

The logic of semantic differentiation is best expressed in terms of the constructs of a theoretical model. A "semantic space" is postulated, which is a region of some unknown dimensionality. According to Osgood:

Each semantic scale, defined by a pair of polar (opposite-in-meaning) adjectives, is assumed to represent a straight line function that passes through the origin of this space, and a sample of such scales then represents a multidimensional space. The larger or more representative the sample, the better defined is the space as a whole . . . When a subject judges a concept against a series of scales,

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9 Osgood, op. cit., p. 20.
each judgement represents a selection among a set of given alternatives and serves to localize the concept as a point in the semantic space. The larger the number of scales and the more representative the selection of these scales, the more validly does this point in the space represent the operational meaning of the concept . . . . The point in space which serves as an operational definition of meaning has two essential properties—direction from the origin, and distance from the origin. We may identify these properties with the quality and intensity of meaning, respectively. The direction from the origin depends on the alternative polar terms selected, and the distance depends on the extremeness of the scale positions checked.10

The pairing of a specific concept with a specific scale presents the following situation:

<table>
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<th>Concept</th>
<th>Polar term A</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>Polar term B</th>
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The scale positions have already been defined for the subject in the instructions as:

(1) extremely A  (7) extremely B  
(2) quite A       (6) quite B      
(3) slightly A    (5) slightly B    
(4) neither A nor B; equally A and B

Each scale independently functions to measure the subjects' reactions to a concept. However, Osgood determined that scales could be grouped under more general dimensions which properly are called factors. Through several methods

of factor analysis, Osgood isolated eight factors. Three of these factors proved to be significant: Evaluation, Potency and Activity. Also, certain scales were found to have greater loading than others. This means that they were more closely aligned to one factor than another. Many scales had sizeable loadings on some subsidiary factor. The titling of the factors was done by the researchers.¹¹

Generally speaking, a positive loading on the Evaluation factor reflects "goodness" or "favorableness." An example of the purest loading is good - bad. A positive loading on the Potency factor indicates "toughness" or "strength." An example is strong - weak. If the activity factor is positively loaded, it is descriptive of "movement," such as active - passive.¹²

In summary, the semantic differential is designed to measure individuals' connotative meanings of concepts. This is accomplished by arriving at a semantic space as the subjects respond to a concept in terms of scales which are bipolar adjectival terms. These scales are grouped into factors which, combined, provide the multidimensional space.

The semantic differential technique, although perhaps not the complete answer to the study of meaning, has proven

¹¹Osgood, Ibid., pp. 31-75.

validity and reliability in a number of research studies.

Carroll views the semantic differential in the following way:

> What can we say about the semantic differential technique? That it measures something, there can be no doubt, for there is evidence of reasonably high interscale, interconcept, and intersubject consistency of results.13

Reliability studies by Stagner and Osgood14 and Tannenbaum15 have verified the reliability of the semantic differential technique. Messick was intent on testing the metric properties of the semantic differential technique. His conclusions were that there was approximate equality of corresponding interval lengths from scale to scale, and a similar placement of origins across scales. He felt it was reasonable to conclude that the scaling properties implied by the semantic differential procedures had some basis other than assumption.16

The semantic differential technique has been the object of much discussion among researchers. Deutschmann

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Osgood's Semantic Differential is an excellent instrument for the measurement of public opinion and attitudes.\textsuperscript{17} Kaufmann adds her opinion:

\begin{quote}
Major assets of the semantic differential include the fact that it requires no verbalization on the part of the respondents and that it measures emotional reactions rather than rational or well-reasoned ones. The semantic differential is particularly valuable as a measure of reactions to objects and experiences that are essentially non-verbal in nature. The semantic differential furthermore taps emotional and unconscious responses. It helps to get around people's tendency to give well reasoned, logical, socially acceptable replies.\textsuperscript{18}
\end{quote}

\textbf{Use of The Semantic Differential in Physical Education Studies}

It appears that the semantic differential technique has not been used extensively as a measuring device in the field of physical education. However, a few studies in which it has been employed are reported.

Tandy\textsuperscript{19} investigated the effects of programed instruction on the attitudes, knowledge and behavior of selected seventh-grade students. She constructed a form of the semantic differential technique for use as an evaluation technique.

\begin{flushright}
\begin{footnotesize}

\textsuperscript{18} Helen Kaufmann, \textit{Ibid.}, p. 437.

\textsuperscript{19} Ruth Elizabeth Tandy, "Effects of Programed Instruction On The Attitudes, Behavior and Knowledge Regarding Smoking Among Selected Seventh-Grade Students" (unpublished Ph.D. dissertation, The Ohio State University, 1966).
\end{footnotesize}
\end{flushright}
instrument to measure possible attitude change. Six concepts concerned with smoking were provided for the subjects to differentiate against a set of bipolar adjectival scales. Ten adjective opposites made up the scales.

This form of the semantic differential, along with a general knowledge test and a behavior questionnaire, was administered to two groups of seventh graders. Seventy-four students comprised an experimental group, and they received programmed instruction on smoking education for a two month period. An additional seventy-four students made up the control group and received no intentional information on smoking. A second administration of the three testing instruments was done two months after the initial testing.

No significant differences occurred between the experimental and control groups on the attitude scale. A difference did occur, however, within subjects. Both the control and experimental groups had a negative attitude toward smoking on the initial testing. But the attitude of the control group became more favorable toward smoking over a two-month period, while the attitudes of the experimental group remained negative.

When the subjects were grouped according to parental smoking habits, a significant difference at the .001 level was found between the attitudes of the subjects whose parents smoke and the more negative attitudes toward smoking of the subjects whose parents do not smoke. As Tandy states: "The subtlety of the semantic differential in exploring differ-
ences in feeling indicates its effectiveness as an evaluation device."20

A study by Kenyon21 had as its purpose to ascertain cross-national differences in adolescent's values held for physical activity, as expressed in attitudes toward and involvement in physical activity, and to explore some possible social and psychological correlates of attitude and involvement.

The semantic differential approach was used for assessing attitude toward seven dimensions of physical activity or seven "perceived instrumentalities." Each "perceived instrumentality" became a "concept." The same eight scales, each with seven positions, were employed for each concept.

Kenyon's "perceived instrumentalities" or characterizations of physical activity were as follows:

(1) Physical Activity as a Social Experience
(2) Physical Activity for Health and Fitness
(3) Physical Activity as the Pursuit of Vertigo
(4) Physical Activity as an Aesthetic Experience
(5) Physical Activity as Catharsis
(6) Physical Activity as an Ascetic Experience
(7) Physical Activity as Chance

20Tandy, Ibid., p. 58.

The eight adjectival pairs, or scales, were: good - bad, worthless - worthwhile, pleasant - unpleasant, sour - sweet, nice - awful, sad - happy, clean - dirty, relaxed - tense.

The attitude inventory, along with two other inventories, . . . were administered to approximately one thousand secondary school students from an urban center in each of four countries: Canada, Australia, England, and the United States. Usable data were subsequently analyzed both to determine cross-national differences in attitude toward and involvement in various forms of physical activity, and to explore the degree to which certain dispositional and situational variables are able to explain attitude of involvement.22

One significant finding was that the Australian attitudes toward all dimensions of physical activity were considerably below those expressed by students from the other three countries. Sex differences were significant for each of the seven dimensions, with females expressing a more positive attitude toward physical activity when it is perceived as a social experience, as health and fitness, as an aesthetic experience, and as catharsis.

. . . Significant differences between the two levels of educational attainment were such that the older students expressed more favorable attitudes toward physical activity as an aesthetic experience, and as catharsis. The younger groups expressed a more positive attitude toward physical

22Kenyon, Ibid., p. 49.
activity as chance. \(^{23}\)

Brown\(^{24}\) used a form of the semantic differential to study the feminine image of girls who participate in competitive sports and other school-related activities. The form of differential employed was patterned more in Osgood's fashion than that used by Kenyon. The concepts dealt with femininity and the scales were relevant to the concepts.

She found that there was a significant difference in the profile image of girls who participate in sports and the profile image of girls who participate in other school-related activities. There also was a significant difference in the profile image of the girls who participate in sports and the profile image of the feminine girl.

Penny's\(^{25}\) use of the semantic differential involved a study of the similarities in the meanings attached to selected concepts in administrative theory and practice. Subjects were practicing administrators and graduate faculty in physical education and professors of educational administration in the Big-Ten Universities.

\(^{23}\)Kenyon, Ibid., p. 71.


Concepts used as the primary sources were: Authority, Communication, Co-operation, Decision-Making, Formal Organization, and Rationality. The concepts were presented to eighty-two professors of educational administration and forty-one administrators and teaching faculty in physical education.

Scales used were: potent - impotent, contemporary - noncontemporary, simple - complex, scientific - unscientific, stable - changeable, familiar - strange, powerful - weak, central - peripheral, harmonious - dissonant, important - unimportant.

His conclusions were as follows:

(1) Full-time administrators in physical education and professors of educational administration within the Big-Ten Universities associate different meaning to the concepts typically found in the literature in administrative theory and practice.

(2) Administrators in physical education teaching a graduate administration course and professors of educational administration tend to differ in the meanings they associate with the established concepts in administrative theory and practice.

(3) Physical educators, both administrators and faculty, differ with professors of educational administration in the meanings they associate with the concepts typically employed in the literature in administration and associated behavioral sciences.
(4) The field of professional preparation for the doctoral degree is a major predictor of the way in which concepts in administrative theory and practice are viewed. Individuals prepared in physical education attach different meanings to the concepts found in the literature in administration than those people prepared in educational administration and other fields of education.

A semantic differential type scale was employed by Lemen to determine the relationships between selected educational and social background factors and the attitudes of college women toward physical education and certain sports. Eleven activities were selected which represented the most liked and the least liked activities of college women. These activities were used as concepts and included modern dance, tumbling and some individual and team sports.

Eleven pairs of polar adjectives were chosen and were: important - unimportant, exciting - unexciting, enjoyable - unenjoyable, wholesome - unwholesome, active - inactive, interesting - boring, fun - dull, proper - improper, adult - childish, challenging - nonchallenging, and useful - useless.

Some of the major conclusions were as follows:

(1) The technique used was a reliable and valid instrument to determine attitudes.

(2) College women appear to have favorable attitudes toward activities and physical education.

(3) Relationships exist between certain social background factors and attitudes toward physical education.

(4) Relationships exist between skill and leisure participation in sports.

(5) College women prefer to participate in individual sports rather than team sports in their leisure time.

Use of The Semantic Differential in Selected Studies Unrelated to Physical Education

Schramm27 used the semantic differential in a study of oral interpretation research. Ten scales were rated on each of twelve concepts. One conclusion was that the study of oral interpretation does affect an individual's appreciation of literature.

Using high school students and teachers, Weaver28 conducted research designed to:

... Measure semantic distance between two groups whose attitudinal positions in our culture might be expected to result in different and polar meanings for selected attitude objects; to relate differences in attitude to group memberships, and to quantify the effect of attitude upon the communicative process involved in the learning situation.


Kjeldergaard\textsuperscript{29} reports on a study which used a semantic differential to discover an audience's reaction to a setting, the format, and the personalities involved in a television station's newscasts. By using a pre-test and post-test, it was found that a marked change in audience attitude toward the newscast took place after viewing the program.

Sabah\textsuperscript{30} used the semantic differential to measure viewers images of three television stations in Columbus, Ohio. He found that different images, in terms of different semantic distances, in actuality did exist.

The semantic differential was used by Heath\textsuperscript{31} to measure the meaning of attitudes related to recreation as they are influenced by the factors of age, sex and ethnic background. A second purpose of the study was to assess the practicability of the semantic differential as a research instrument applicable to the field of recreation.

The semantic differential included twenty concepts and ten scales. The areas of recreational program, leadership and facilities were included in the concepts studied.


\textsuperscript{30}Franklin David Sabah, "The Use Of The Semantic Differential Technique In The Analysis Of The Images of Three Columbus Commercial Television Stations" (unpublished Ph.D. dissertation, The Ohio State University, 1959).


The conclusions reached indicated that significant relative differences of attitude relating to recreation were found to exist between high school-age youth and adults, between males and females, and between Spanish-American and Anglo-American ethnic groups in Albuquerque, New Mexico. Further conclusions were: The semantic differential showed sensitivity in measuring differences in attitudes, it proved to be a useful technique appropriate for recreation research in a cross-cultural setting; it was shown to be a practical research tool applicable to the field of recreation; its objectivity, utility, versatility and comparability were demonstrated.

A study by Grigg\(^{32}\) tested whether the semantic differential scores of a group of normal subjects reflect greater distance between "ideal self" and "neurotic" than between "self" and "neurotic," and whether semantic differential scores obtained when judging an actual case would shift in a predicted direction as a result of experimental manipulation of the bases of judgement. Using the semantic differential technique, a group of forty-two university undergraduates

indicated significantly greater distance between "ideal self" and "neurotic" than between "self" and "neurotic", a result favorable to the validity of the semantic differential. After judging an actual case, the experimental group shifted in the expected direction, but not to a statistically significant degree.

The following three studies relate more closely to the problem which this investigator is exploring. They are significant from the standpoint that they involve students' opinions of teachers and the image of persons in a particular profession.

White and Anderson\textsuperscript{33} used a form of the semantic differential, along with a Pupil Observation Survey in a study of scaled dimensions of teacher behavior as perceived by students. The purpose was to compare the structure of the domain of teacher behavior as measured by the semantic differential and pupil observation survey.

The sample included 197 students from 6 English classes in a secondary school. The 6 female English teachers were the stimulus figures for the student appraisal.

Scales used in the semantic differential portion of the survey were: good - bad, pleasant - unpleasant, happy - sad, fair - unfair, fast - slow, active - passive, hot - cold, sharp - dull, large - small, strong - weak, heavy -

light, and thick-thin.

After a factor analysis, results showed that when the students made judgments about their teachers, their appraisals were largely classified under three general dimensions of semantic meaning: evaluation, potency and activity. When the semantic differential and pupil observation survey items were combined in analysis, the semantic differential potency factor remained independent, while the evaluative and activity factors were more closely related with pupil observation survey factors.

A questionnaire designed in the semantic differential form was administered to determine the college-student image of the scientist. There was wide agreement concerning the image of the scientist, and the authors felt that the image revealed the students' beliefs about the personality of the scientist and the style of life associated with a career in science.34

In a study by Husek and Wittrock,35 the semantic differential was employed to investigate the dimensionality of attitudes of education students toward teachers. One concept (school teachers) was rated on each of 117, seven-step, bipolar scales. A factor analysis was performed on the resulting data. A large factor of general evaluation was obtained.

34 David C. Beardslee and Donald D. O'Dowd, op. cit., 133:997-1001.

The subjects were 259 students in the introductory course in educational psychology at the University of California. Means and standard deviations for each scale were obtained. The data obtained in this study indicated that the attitudes of the students toward public school teachers was in general extremely positive.

This chapter has been devoted to an explanation of the semantic differential technique, the use of the semantic differential in physical education studies, and the use of the semantic differential in other selected studies. Three of these studies relate rather closely to the problem which this investigator is exploring.

No attempt was made to explore all the literature in which the semantic differential was used as a research device. It has been employed extensively during the past ten years, and such studies would number in the hundreds. However an attempt was made to report the studies in physical education which used a form of the semantic differential. No other studies other than those reported in Chapter II are known to this investigator.
CHAPTER III

METHODS AND PROCEDURES

The purpose of this chapter is to describe the procedures used to determine the perceptions of students toward women high school physical education teachers. The construction of a form of the semantic differential as an instrument to measure these perceptions is presented.

Construction of the Semantic Differential Technique

The semantic differential was chosen as the basis for developing an instrument to ascertain the perceptions of women students toward women high school physical education teachers. As stated in Chapter II, the content of a semantic differential is made up of concepts and scales; however, there are no standard concepts or scales. Those used must be adapted to the requirement of each research problem.

For this study, only two concepts were provided for the subjects to differentiate against a set of bipolar adjectival scales. The concepts were "Women High School Physical Education Teachers" and "Women High School Teachers." Forty adjective opposites, i.e., "good - bad," made up the scales.
There were spaces between each adjectival pair so the subject could indicate the direction and intensity of his feeling toward the concept. The response of the subject to a concept was indicated by her check mark on each of the forty scales.

The scales were selected so as to be representative of the major dimensions along which meaningful processes vary. Through factor analysis, Osgood and associates found that three elemental semantic factors were the most representative of the ways in which meanings may vary. These three factors are dominant and account for a large number and variety of situations. Descriptive titles were assigned to each dimension. For example, certain scales tended to cluster around the polar adjectives "good - bad." These were characterized as being evaluative in nature, and the title "Evaluative" was assigned to that factor. Additional sets of polar terms, such as "hard - soft," were identified as "Potency" scales, and terms such as "active - passive" as "Activity" scales.

Osgood conducted further research, which was a comprehensive study of the classification of word meanings, using the 1941 edition of Roget's Thesaurus. The task was to provide a logically exhaustive classification of word meanings, and the source had the advantage that most categories were already arranged in terms of polar opposition. The factor analysis was stopped after eight factors, since the eighth factor accounted for only about 1 per cent of the variance. The first three factors were clearly interpretable;
The first factor was again the evaluative factor, the second a potency factor, and the third an activity factor. Osgood and his associates concluded that the three dominant factors isolated in previous studies were also dominant in the Theasaurus Study. Other factors such as Stability, Tautness, Novelty, Receptivity, and Agressiveness were tentatively identified, but they accounted for a very small amount of variance.

The first task in using a form of the semantic differential is to select scales which are heavily loaded with the factor being considered and minimally loaded on the other factors. The researcher is in a position to select the scales which have the greatest relevance to the concepts being judged.2

This investigator selected a majority of the scales for the present research from those that had been identified in the Thesaurus Study as having factor loadings in the three major areas. An equal number of scales were selected from each of the three dimensions of space. They were selected on their factorial composition; that is with a maximal loading on one factor and minimal loading on the others. For example, the adjective pair "good and bad" is considered purely evaluative in the sense that their extracted variance is almost entirely on the evaluation factor. The pair "strong

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1Osgood, op. cit., p. 50.
2Osgood, op. cit., p. 77.
and weak" has a high loading on the potency factor and is low on both evaluation and activity. However, since a large number of scales were used, many of the polar opposites were minimally loaded.

Scales used in this study which were the most heavily loaded on the three factors are listed in the following table. Their unrotated square root factor analysis scores are also given.3

<table>
<thead>
<tr>
<th>Scales</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluative</td>
<td></td>
</tr>
<tr>
<td>Good .......... Bad</td>
<td>1.00</td>
</tr>
<tr>
<td>Kind .......... Cruel</td>
<td>.52</td>
</tr>
<tr>
<td>Successful ........ Unsuccessful</td>
<td>.51</td>
</tr>
<tr>
<td>Wise .......... Foolish</td>
<td>.57</td>
</tr>
<tr>
<td>Optimistic .......... Pessimistic</td>
<td>.37</td>
</tr>
<tr>
<td>Social .......... Unsociable</td>
<td>.42</td>
</tr>
<tr>
<td>Graceful .......... Awkward</td>
<td>.38</td>
</tr>
<tr>
<td>Potency</td>
<td></td>
</tr>
<tr>
<td>Hard .......... Soft</td>
<td>.97</td>
</tr>
<tr>
<td>Strong .......... Weak</td>
<td>.40</td>
</tr>
<tr>
<td>Heavy .......... Light</td>
<td>.48</td>
</tr>
<tr>
<td>Masculine .......... Feminine</td>
<td>.47</td>
</tr>
<tr>
<td>Activity</td>
<td></td>
</tr>
<tr>
<td>Active .......... Passive</td>
<td>.98</td>
</tr>
<tr>
<td>Fast .......... Slow</td>
<td>.35</td>
</tr>
<tr>
<td>Excitable .......... Calm</td>
<td>.26</td>
</tr>
</tbody>
</table>

3 Osgood, op. cit., pp. 53-61.
Other scales with minimal loading were selected by the author on a logical basis. Some of these were from previous factor analysis studies by Osgood. Also, since the three factors; evaluation, potency, and activity, do not account for all of the semantic space, this investigator chose to add a fourth category, i.e., "unassigned."

... Often scales of unknown factorial composition are highly relevant to a particular problem ... such scales may, of course, be used ... the three dominant factors we have isolated do not exhaust the semantic space, and therefore dimensions highly significant for differentiating the concepts in a particular study might be lost entirely if one stuck to only evaluation, potency, and activity scales.4

The addition of this category facilitated the use of more adjectival opposites which were relevant to the concepts being judged.

A second criterion used in the selection of all the scales was their relevance to the concepts. Irrelevant concept-scale pairings usually yield neutral judgements, and their inclusion reduces the amount of information gained with a given number of scales.

The original pattern in the construction of the test instrument was to alternate each of the four factors throughout the instrument and to arrange the adjectives so the positive pole was not always in the left hand position. For example, the subject would work from "good to bad," but would

4Osgood, op. cit., p. 79.
also work from "cruel to kind." The polar adjectives were reversed in an attempt to eliminate the possibility of conditioning the respondents to answer in a particular pattern, such as checking all of the items on the left, or right side of the test instrument. No particular model was followed in reversing the polar adjectives.

**The Pilot Test**

This form of the semantic differential was pilot-tested on a group of thirty freshmen girls at Otterbein College. The students were selected from the required physical education program, were first quarter freshmen, and had participated in an organized high school program of physical education the previous year. All students had been taught by a woman physical educator.

The pilot group was encouraged to ask questions if they did not understand the directions given for taking the test or if they had difficulty with word meanings or with relevance of the adjective pairs to the concepts. As a result of this pilot-test, several changes were made: one adjective pair was substituted, fourteen adjective pairs were eliminated, additions were made to the instructions, (see Appendix A) and the concepts were lengthened for purposes of clarity. (See Appendix A.) The omission of fourteen adjective pairs reduced the total number of scales to forty.
Population Selection

Subjects consisted of freshmen women who were enrolling in the 1969 fall quarter basic physical education program at The Ohio State University. Participants were limited to first quarter entering freshmen who had been high school students the previous year. Only those students who had participated in an organized high school program of physical education under the direction of a female physical educator were utilized as respondents. Participation in physical education during high school could have been any year of the student's high school career and no restriction was made as to the number of years of physical education. The term high school in this study meant grades nine through twelve. Approximately 10 per cent of the students enrolling in the 1969 fall quarter basic physical education program were utilized, yielding a total of 420 subjects.

A sub-problem of this study was to compare the perceptions of women students toward women high school physical education teachers with those perceptions of freshmen physical education majors toward women high school physical education teachers.

The subjects utilized for this portion of the study met all the conditions previously listed, and in addition, had declared a major in physical education. All the freshmen women who were physical education majors and who met the conditions were respondents, yielding a total of ninety-five subjects in this group.
Administration of the Testing Instrument

The testing instrument was administered just prior to registration for basic physical education at the beginning of the 1969 fall quarter. These dates were October 1 and 2. Every tenth student who appeared for registration was asked a few questions by this investigator to ascertain if she met the conditions as a respondent. If so, she was given a copy of the test booklet and asked to go to the designated area and complete it. Directions were also on the cover of the booklet. (See Appendix A.)

To insure similarity of environmental conditions an area was chosen that was available all day for the two consecutive days of registration. Although the test instrument was self-administering, an assistant was present during all testing periods to assure that conditions were as equal as possible for all respondents. This assistant was thoroughly familiar with the instrument and was available to answer questions and collect the booklets. Similar conditions were met for the administration of the test instrument to the freshmen major group.

The cover page of the test booklet contained general directions. The second and third pages contained specific instructions for responding to the semantic differential. Page three also included a general information questionnaire. Two of the items on the questionnaire were used for research in the sub-problems of this study. They asked the subject to respond as to whether she liked, felt neutral, or disliked
high school physical education and whether she was good, average, or poor in high school physical education. The remaining four pages included the concepts and scales. The average time for completion of the entire booklet was ten minutes.

Scoring of the Semantic Differential

The raw data obtained with the semantic differential are a collection of check-marks against bipolar scales. Each of the seven positions on these scales is assigned a digit, with the neutral "4" position on the scales corresponding to the center of the semantic space. A subject's score on an item is the digit corresponding to the scale position he checks.

Since the bipolar adjectives were arranged so that the positive pole was not always on the left, the order of scoring was also reversed where necessary, with "7" always being the highest value. An example of scoring by this method follows:

<table>
<thead>
<tr>
<th>Good</th>
<th>X</th>
<th>(7)</th>
<th>(6)</th>
<th>(5)</th>
<th>(4)</th>
<th>(3)</th>
<th>(2)</th>
<th>(1)</th>
<th>Bad</th>
<th>Score - 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cruel</td>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
<td>Kind</td>
<td></td>
</tr>
</tbody>
</table>

Since (7) indicated a score of the highest value, the digit "1" corresponded to the lowest value. The digit "4" represented a neutral position on the scales, being neither favorable nor unfavorable. With this method of scoring, it
was possible for means of individual scales to range from 1 to 7 and for factor means to range from 10 to 70.

Each item was scored for each concept. Then total scores for each of the four factors were obtained for each concept. Means were computed for each of the four factors of both concepts. These means were examined to determine if the perceptions of women students toward women high school physical educators tended to be generally favorable or unfavorable. It was evident that a high mean score would indicate some degree of favorability. For example, a mean score which approached the figure "70" would indicate that the subjects felt the concept (Women High School Physical Education Teachers) was very closely related to those adjectival terms judged to be positive or favorable. A mean which fell below the midpoint of "40" would indicate that the subjects tended to check in the direction of the less desirable or unfavorable polar term.

The perceptions expressed toward women high school physical education teachers were compared with those expressed toward other women high school teachers. This comparison was made by computing the mean scores for both groups, determining the difference between the means, and subjecting this difference to the paired t test. A separate mean and t was computed for each of the four semantic factors. Similar statistical procedures utilizing the t test were followed for each of the remaining sub-problems.

The perceptions expressed toward women high school
physical education teachers were also compared with those expressed toward other women high school teachers on each of six individual scales selected by this investigator. The scales were old - young, sociable - unsociable, graceful - awkward, attractive - unattractive, feminine - masculine, and intelligent - dumb. A mean was computed for each scale for the two concepts, and the difference between means subjected to the paired t test.
CHAPTER IV

ANALYSIS OF DATA

This chapter contains an analysis and interpretation of the data obtained from the administration of the semantic differential. Four hundred and twenty freshmen women students responded to the test instrument, indicating their perceptions of women high school physical education teachers and of all other women high school teachers. The data was coded, punched into IBM cards, and computed at the Statistics Laboratory, The Ohio State University.

The semantic differential was first employed to determine whether or not the perceptions of freshmen women students toward women high school physical education teachers were favorable. The raw scores, as expressed by check-marks on the semantic differential scale, were summed for each of the four factors. Means were computed for each of the factors. It was possible for factor means to fall anywhere between ten and seventy, therefore a mean which exceeded the mid-point of forty indicated some degree of favorability. Table 1 indicates the mean scores of each of the four factors.
The perceptions expressed toward women high school physical education teachers (Concept I) were compared with these perceptions expressed toward other women high school teachers. (Concept II) These perceptions were compared on each of the four semantic factors. A paired t test was used to determine if the difference between means was significant. Any score below the .05 level of confidence was not considered significant.

The paired t score indicated that there was not a significant difference between means on the evaluative factor. A significant difference in mean scores did exist, however, on the potency, activity, and unassigned factors. The mean scores pointed out that students perceived women high school physical education teachers less favorably than other women high school teachers on both the potency and unassigned factors. That is, they tended to perceive other women high school teachers as being more related to the positive polar terms than physical education teachers. The t score was
significant at the .05 level for the potency factor and the .005 level for the unassigned factor. The reverse was true, however, in regard to the activity factor. The physical education teachers were considered to be more closely related to this factor, with the t score significant at the .001 level. Table 2 permits a comparison of the perceptions by factors.

The second comparison showed the difference in the perceptions of freshmen college women majoring in physical education toward women high school physical education teachers and those perceptions of non-majors toward women high school physical education teachers. A mean score was computed for each factor for both groups and a one-tailed t test was employed to determine if the difference between means was significant. The group of freshmen physical education majors perceived women high school physical education teachers more favorably on each of the four factors than did the group of non-majors. The difference between means was significant beyond the .01 level. Table 3 compares the perceptions of major students and non-majors.

It will be recalled that the general information questionnaire asked the subjects to respond as to whether they "liked", "felt neutral", or "disliked" high school physical education. Table 4 gives the numbers and percentages of the responses in each category.
TABLE 2

PAIRED t RATIOS FOR THE SIGNIFICANCE OF THE DIFFERENCE OF MEANS BETWEEN THE PERCEPTIONS EXPRESSED TOWARD WOMEN HIGH SCHOOL PHYSICAL EDUCATION TEACHERS (CONCEPT I) AND OTHER WOMEN HIGH SCHOOL TEACHERS (CONCEPT II)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Concept I Means</th>
<th>Standard Deviations</th>
<th>Concept II Means</th>
<th>Standard Deviations</th>
<th>Mean Difference</th>
<th>Standard Deviations</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potency</td>
<td>48.8548</td>
<td>8.6295</td>
<td>49.8048</td>
<td>7.1886</td>
<td>.9499</td>
<td>8.8656</td>
<td>2.196a</td>
<td>419</td>
</tr>
<tr>
<td>Activity</td>
<td>50.7881</td>
<td>8.2335</td>
<td>47.4429</td>
<td>7.8424</td>
<td>3.345</td>
<td>8.9754</td>
<td>7.638b</td>
<td>419</td>
</tr>
<tr>
<td>Unassigned</td>
<td>50.2095</td>
<td>10.3171</td>
<td>51.6119</td>
<td>8.5848</td>
<td>1.402</td>
<td>10.1160</td>
<td>2.841c</td>
<td>419</td>
</tr>
</tbody>
</table>

*a* Significant at the .05 level of confidence

*b* Significant at the .001 level of confidence

*c* Significant at the .005 level of confidence
<table>
<thead>
<tr>
<th>Factors</th>
<th>MAJORS</th>
<th></th>
<th>NON-MAJORS</th>
<th></th>
<th>Mean Difference</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Means</td>
<td>Standard Deviations</td>
<td>Means</td>
<td>Standard Deviations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluative</td>
<td>55.4000</td>
<td>8.5108</td>
<td>51.0143</td>
<td>9.8332</td>
<td>4.3857</td>
<td>4.012</td>
<td>513</td>
</tr>
<tr>
<td>Activity</td>
<td>54.2105</td>
<td>8.1278</td>
<td>50.7881</td>
<td>8.2335</td>
<td>3.4224</td>
<td>3.660</td>
<td>513</td>
</tr>
<tr>
<td>Unassigned</td>
<td>55.6421</td>
<td>7.8968</td>
<td>50.2095</td>
<td>10.3171</td>
<td>5.4326</td>
<td>4.813a</td>
<td>513</td>
</tr>
</tbody>
</table>

aAll the t's were significant at the .0005 level of confidence
TABLE 4
NUMBERS AND PERCENTAGES OF STUDENTS WHO LIKED, FELT NEUTRAL TOWARD, AND DISLIKED HIGH SCHOOL PHYSICAL EDUCATION

<table>
<thead>
<tr>
<th></th>
<th>Liked</th>
<th>Felt Neutral</th>
<th>Disliked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>259</td>
<td>122</td>
<td>39</td>
</tr>
<tr>
<td>Percentage of</td>
<td>61</td>
<td>29</td>
<td>9</td>
</tr>
<tr>
<td>Total Population</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The mean score for each factor of those students who indicated they liked high school physical education was compared with the score of those who expressed a dislike. The mean difference was subjected to a two-tailed $t$ test to determine significance. The difference between means was highly significant on every factor, with the larger means belonging to the group who "liked" high school physical education. The results are shown in Table 5.

The second part of the general information questionnaire asked the subjects to indicate whether they perceived themselves as "good", "average", or "poor" in high school physical education. Table 6 gives the numbers and percentages of the responses in each category.
**TABLE 5**

$t$ *RATIOS FOR THE SIGNIFICANCE OF THE DIFFERENCE OF MEANS BETWEEN THE PERCEPTIONS OF THOSE STUDENTS WHO LIKED AND THOSE WHO DISLIKED HIGH SCHOOL PHYSICAL EDUCATION*

<table>
<thead>
<tr>
<th>Factors</th>
<th>Liked</th>
<th>Standard Deviations</th>
<th>Means</th>
<th>Standard Deviations</th>
<th>Mean Difference</th>
<th>$t$</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potency</td>
<td>51.1622</td>
<td>7.9287</td>
<td>40.8205</td>
<td>8.8433</td>
<td>10.3417</td>
<td>7.450</td>
<td>296</td>
</tr>
<tr>
<td>Activity</td>
<td>52.3591</td>
<td>7.7424</td>
<td>44.8205</td>
<td>7.8936</td>
<td>7.5386</td>
<td>5.635</td>
<td>296</td>
</tr>
</tbody>
</table>

All $t$'s were significant at the .001 level of confidence.
TABLE 6
NUMBERS AND PERCENTAGES OF STUDENTS WHO PERCEIVED THEMSELVES AS GOOD, AVERAGE, AND POOR IN HIGH SCHOOL PHYSICAL EDUCATION

<table>
<thead>
<tr>
<th></th>
<th>Good</th>
<th>Average</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>155</td>
<td>261</td>
<td>4</td>
</tr>
<tr>
<td>Percentage of Total Population</td>
<td>36</td>
<td>62</td>
<td>.9</td>
</tr>
</tbody>
</table>

The mean score for each factor of those students who perceived themselves as good in high school physical education was compared with the score of those who perceived themselves as poor. A two-tailed t test was utilized to determine if the difference between means was significant. Although there was no significant difference on any factor, those students who perceived themselves as "good" had slightly higher means on all factors except the activity factor. The results are shown in Table 7.

As an adjunct of the study, this investigator selected six individual scales to be analyzed separately. These scales were selected without regard to factors, but were those items which seemed to be of particular interest in regard to the image of women physical educators. The scales were old - young, sociable - unsociable, graceful - awkward, unattractive - attractive, feminine - masculine, and intelligent - dumb. The pair old - young, does not directly affect image, but is of interest from the standpoint of
<table>
<thead>
<tr>
<th>Factors</th>
<th>GOOD</th>
<th>Standard Deviations</th>
<th>Means</th>
<th>Standard Deviations</th>
<th>Mean Difference</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluative</td>
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<td>49.7500</td>
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<td>52.2500</td>
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<td>49.000</td>
<td>12.6227</td>
<td>2.6194</td>
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</table>
students' perceptions.

The perceptions expressed toward women high school physical education teachers (Concept I) were compared with those perceptions expressed toward other women high school teachers (Concept II). The perceptions were compared on each of the six scales. Paired $t$ tests were used to determine if the difference between each mean was significant. It was possible for the mean score to fall anywhere between one and seven, and although all the means tended to cluster near the mid-point of four, there was a significant mean difference on all but two scales. These two scales were sociable - unsociable, and graceful - awkward. The $t$ ratio was significant at the .001 level of confidence for the scale, old - young, with the higher mean score belonging to the physical education teachers. The reverse was true, however, for the remainder of the scales. Mean differences were significant beyond the .01 level, indicating that students perceived other women high school teachers as more attractive, feminine, and intelligent than women high school physical education teachers. The results are shown in Table 8.
<table>
<thead>
<tr>
<th>Scales</th>
<th>Concept I</th>
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<tr>
<td>Old - Young</td>
<td>5.0952</td>
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<td>Sociable - Unsociable</td>
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<td>Attractive - Unattractive</td>
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<td>Feminine - Masculine</td>
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<td>5.8095</td>
<td>.4762</td>
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</table>

*Significant at the .001 level of confidence

b-Significant at the .005 level of confidence

c-d-Significant at the .001 level of confidence
CHAPTER V

Summary and Conclusions

The purposes of this study were as follows:

(1) To determine the favorability with which freshmen women college students perceive women high school physical education teachers; and (2) to compare the perceptions expressed toward women physical educators with those perceptions expressed toward other women high school teachers. Adjuncts of the study were:

(a) To compare the perceptions of freshmen women students toward women high school physical education teachers with those perceptions of freshmen physical education majors toward women high school physical educators.

(b) To compare the perceptions of those students who indicated that they "liked" high school physical education with those who expressed a dislike.

(c) To compare the perceptions of those students who perceived themselves as "good" in high school physical education with those who perceived themselves as poorly skilled.
An additional sub-problem was to compare the perceptions expressed toward women high school physical educators with those expressed toward other women high school teachers on selected characteristics.

Methods and Procedures

A testing instrument based upon the semantic differential technique was developed to ascertain the perceptions. This instrument consisted of two concepts: "Women High School Physical Education Teachers" and "Women High School Teachers". The subjects differentiated these two concepts against a set of bipolar adjectival scales. Forty adjective opposites made up the scales. The scales chosen were based upon previous factor analysis studies by Charles Osgood, in which three dominant factors emerged, i.e., Evaluative, Potency, and Activity. A fourth factor, classified as Unassigned, was added by this investigator. The data was analyzed for each of the four factors. Six individual scales were selected for additional comparisons by groups. The adjective opposites used in these scales were: old - young, sociable - unsociable, graceful - awkward, attractive - unattractive, feminine - masculine, and intelligent - dumb.

Subjects consisted of 420 freshmen women who were enrolling in the 1969 fall quarter basic physical education program at The Ohio State University. The group of physical education majors was composed of 95 freshmen students who had declared a major in physical education at The Ohio State
University. The test instrument was administered to both groups prior to registration for physical education.

Procedures used for analysis of the data included computing a mean and a t ratio for each factor of each concept. The comparison of concepts I and II was made by use of a paired t test, as were the six individual scales; other comparisons utilized the t.

Summary and Discussion of The Findings by Factors

Evaluative Factor

Based upon factorial research, the evaluative factor usually accounts for approximately half or more of the extracted variance. It is more closely associated with attitudes, and reflects goodness or favorableness. Examples of polar adjectives indicative of the evaluative factor which were used in this study were good - bad, optimistic - pessimistic, cruel - kind, foolish - wise, sociable - unsociable, graceful - awkward, painful - pleasurable. (A complete list of scales used for each factor can be found in Appendix B.)

The method utilized for scoring the semantic differential permitted a high mean score for a given factor to indicate favorability.

Direction of attitude, favorable or unfavorable, is simply indicated by the selection of polar terms by the subject; if the score falls more toward the favorable poles, then the attitude is taken to be favorable, and vice-versa.¹

¹Osgood, op. cit., p. 192.
The relatively high mean of the perceptions of freshmen women students toward women high school physical education teachers indicated a degree of favorability toward the teachers on the evaluative factor. The mean score was 51.01; well above the mid-point of 40.

When the perceptions expressed toward physical education teachers were compared with those expressed toward other teachers, the factor mean for the other teachers was only slightly higher, giving a mean difference of .29. This resulted in a $t$ score of .578, which was not considered significant. Therefore, there was no significant difference in the perceptions expressed toward women high school physical education teachers and other women high school teachers on the evaluative factor.

Freshmen college women majoring in physical education perceived women high school physical education teachers more favorably than did the non-majors. The mean difference for the evaluative factor was 4.39, resulting in a $t$ of 4.01. This was considered significant at the .0005 level of confidence.²

When the perceptions of those students who "liked" high school physical education were compared with those who disliked the subject, a mean difference of 14.61 occurred for the evaluative factor. The higher mean belonged to the group who liked physical education. The $t$ was 9.772 and was

²This hypothesis was tested with a one-tailed $t$ test.
significant at the .001 level of confidence.

Those students who perceived themselves as "good" in high school physical education had a higher mean factor score than those who perceived themselves as poorly skilled, but the difference was not considered significant.

**Potency Factor**

The potency factor, as stated in Chapter 2, is concerned with power and the things associated with it, such as size, weight, toughness, strength. Some of the polar adjectives indicative of the potency factor which were used in this study were hard - soft, weak - strong, heavy - light, feminine - masculine, sharp - dull.

The mean score for women high school physical education teachers was 48.85 which indicated a favorable attitude toward physical education teachers on this factor. However, the mean score of 49.80 for the other women high school teachers indicated that students perceived other women high school teachers more favorably than physical education teachers on this factor. The t ratio was 2.196, which was significant at the .05 level.

The physical education major group, on the other hand, perceived women high school physical education teachers more favorably than did the non-majors. The mean difference was 4.62, resulting in a t ratio of 4.858. This was significant at the .0005 level of confidence.
The students who "liked" high school physical education perceived physical education teachers more favorably than did those who disliked the subject. The t ratio for the potency factor was 7.450, which was significant at the .001 level.

There was no significant difference in the perceptions of those who perceived themselves as good or poor in high school physical education.

Activity Factor

The activity factor is concerned with movement, quickness, excitement, warmth, agitation. Some of the polar adjectives used for this factor in this study were active - passive, excitable - calm, energetic - lazy, fast - slow, tense - relaxed, still - vibrant.

The mean score of the perceptions expressed toward women high school physical education teachers for this factor was 50.79, again indicating favorability. When compared with the mean score of the perceptions expressed toward other women high school teachers, it was found that physical education teachers were perceived more favorably than other teachers. The mean score for other teachers was 47.44. The resultant t ratio was 7.638, which was significant at the .001 level of confidence. Thus, physical education teachers were perceived as being more closely related to the activity factor than other teachers. The activity factor was the only factor on which perceptions expressed toward physical
education teachers were higher than for other teachers. However, an analysis of Table 2 in Chapter 4 will show that the mean score for physical education teachers was not higher than the mean scores for the other factors; the mean for the other women high school teachers was lower than usual. Since the activity factor denotes movement, it is logical that other women high school teachers were perceived as being less closely related to such terms than women physical educators.

The freshmen physical education major group perceived physical educators as being even more closely related to the activity factor than the non-majors did. The t ratio was significant at the .0005 level.

Results were similar for those students who liked high school physical education. Their perceptions of physical educators were significantly higher than the perceptions of those students who disliked the subject. The t ratio was significant at the .001 level.

There was no significant difference in the perceptions of those students who perceived themselves as good and those who perceived themselves as poor in high school physical education.

Unassigned Factor

As stated in Chapter 3, the three factors; evaluation, potency, and activity, do not account for all of the semantic space. Therefore, this investigator added
a fourth category, titled "Unassigned", to add further dimension to the study. Some of the polar terms used in this factor were interesting - boring, old - young, honest - dishonest, childish - mature.

The mean score for perceptions expressed toward women high school physical education teachers was 50.21, again indicating favorability. The mean score for perceptions expressed toward other women high school teachers was higher however, resulting in a mean difference of 1.402. The t ratio was 2.841, which was significant at the .005 level. Thus, other women teachers were perceived as being more closely related to the positive polar terms in this factor than physical education teachers.

The physical education major group again, however, perceived physical educators as being more closely related to the positive polar terms than did the non-majors. The t ratio was significant at the .0005 level.

Results were again consistent for those students who "liked" high school physical education. They perceived physical education teachers much more favorably than did those who disliked the subject. The t ratio was significant at the .001 level.

There was no significant difference in the perceptions of those students who perceived themselves as good and those who perceived themselves as poor in high school physical education.
General Discussion

It can be correctly stated from the foregoing discussion of factors that women high school physical educators were perceived more favorably than other women high school teachers on only one factor, i.e., activity. It can also be stated that women physical educators were perceived less favorably on both the potency and unassigned factors. There was no significant difference in the perceptions expressed toward the two groups on the evaluative factor. One point, however, needs clarification. There were an equal number of scales used for each factor, but the evaluative factor accounts for at least one-half of the semantic space and is more closely related to "goodness" and "favorability", being more indicative of an "attitude" toward a group than the other factors. This fact should be kept in mind when drawing conclusions from this study.

The consistent significant difference in the perceptions expressed by freshmen physical education majors and those expressed by non-majors toward women high school physical education teachers raises some interesting questions. For example, do physical education majors choose physical education as a career because of the high esteem in which women high school physical educators are held? Additional research is needed in this area before facts can be established.

The number of students who "liked" and "disliked" high school physical education is consistent with most
studies which show a favorable attitude toward physical education. Two hundred and fifty-nine students indicated they liked the subject while only thirty-nine expressed a dislike. The perceptions of these same students toward physical education teachers, however, present some interesting conjectures. The perceptions of those students who indicated they liked physical education were higher for every factor than the group who disliked the subject. Whether these students perceived physical education teachers more favorably because they liked the subject, or whether they liked the subject because of their perceptions of the teachers is a moot point.

Out of a total population of 420 students, 155 perceived themselves as good in physical education, while only 4 perceived themselves as poor. There was no significant difference in the perceptions of either group on any factor. The comparisons could have been affected by the size of the groups.

When selected individual scales were analyzed separately, independent of factors, some interesting results were obtained. Students perceived women high school physical education teachers as younger than other women high school teachers, but also perceived the physical educators as less attractive, less feminine, and less intelligent than other teachers. The paired t ratios were all significant beyond the .01 level of confidence. There was no significant difference between the mean scores of the sociable -
unsociable or graceful - awkward scales.

Summary by Hypotheses

The hypotheses as stated at the beginning of the experiment were accepted or rejected according to the interpretation of the data.

**Hypothesis 1.** The perceptions of women students toward women high school physical education teachers will be favorable.

The mean scores of each factor were high enough to indicate favorability, therefore the hypothesis was accepted as stated.

**Hypothesis 2.** There will be no significant difference in the perceptions of women students toward women high school physical education teachers and those perceptions toward other women high school teachers.

This hypothesis was accepted for the evaluative factor only as the difference between means was not statistically significant. The paired t test showed the difference between means to be significant at the .05 level for the potency factor, the .001 level for the activity factor, and the .005 level for the unassigned factor. Therefore, the hypothesis as stated was rejected for those three factors.

**Hypothesis 3.** There will be no significant difference in the perceptions of freshmen college women majoring in physical education toward women high school physical education teachers and those perceptions of non-majors toward women high school physical education teachers.
The t ratio showed a mean difference for every factor which was significant beyond the .01 level. Therefore, the hypothesis was rejected.

**Hypothesis 4.** There will be no significant difference in the perceptions expressed toward women high school physical education teachers by those students who indicate they "liked" high school physical education and those who expressed a dislike.

The t ratio showed a significant mean difference for every factor. The difference was significant at the .001 level. Therefore, the hypothesis was rejected.

**Hypothesis 5.** There will be no significant difference in the perceptions expressed toward women high school physical education teachers by those students who indicated that they were "good" in high school physical education and those who indicated that they were "poor".

The t ratios were not statistically significant for any factor. Therefore, the hypothesis was accepted as stated.

**Conclusions**

The interpretation of the data warrants the following conclusions concerning the perceptions of women students toward women high school physical education teachers.

1. The respondents in this study tended to have favorable perceptions toward women high school physical education teachers.

2. There was no significant difference in the perceptions expressed toward women high school physical education teachers and other women high school teachers on the
3. The subjects perceived women high school physical educators as more closely related to the activity factor than other women high school teachers.

4. The subjects perceived women high school physical educators as less closely related to the potency and unassigned factors than other women high school teachers.

5. The subjects perceived women high school physical educators as being younger than other women high school teachers.

6. The subjects perceived women high school physical educators as less attractive, less feminine, and less intelligent than other women high school teachers.

7. The freshmen physical education majors utilized in this study perceived women high school physical educators favorably, and perceived them more favorably than the non-majors did.

8. Those students who indicated they liked high school physical education perceived women high school physical educators more favorably than the group who disliked physical education.

9. Those students who perceived themselves as good in high school physical education did not differ in their perceptions of physical education teachers from those who perceived themselves as poor.
Recommendations for Further Study

1. A replication of this study on the college level, using college women physical educators and other college women educators as concepts, and college students with experience in basic physical education as subjects.

2. A replication of this study in a different section of the country. A comparison of results would then be interesting.

3. A study comparing physical education majors perceptions of women high school physical educators with their choice of a career.

4. A follow-up study of the freshmen physical education majors utilized in this study to determine if their perceptions of college physical educators differed from those expressed toward high school physical educators.

5. A study of similar nature utilizing men physical educators and students.

Summary

This study was concerned with the exploration of one aspect of the status of physical education teachers. It was limited to the perceptions which women students held toward women high school physical education teachers. A form of the semantic differential technique was constructed, and proved to be an adequate instrument for measuring perceptions. Results obtained from the administration of the semantic differential indicated that women students tended to have
favorable perceptions of women high school physical educators. However, when compared with the perceptions which these students held toward all other women high school teachers, it was found that women high school physical educators were held in slightly lower esteem. Additional results showed that freshmen physical education majors perceived women high school physical educators more favorably than non-majors did, and those students who liked physical education perceived physical educators more favorably than those students who disliked the subject.

Physical educators have a responsibility to determine the image which students hold toward them as a group and to take appropriate steps to strengthen or change it. In the opinion of this writer, this study has increased the knowledge regarding the image of women who teach physical education. Further research is necessary for conclusive evidence, but based on the results of this investigation, there appears to be a need for women physical educators to enhance their image, thus improving the status of the profession.
APPENDIX A

INSTRUCTIONS AND SEMANTIC DIFFERENTIAL TEST INSTRUMENT
You have been chosen to participate in a selected study.

Please follow these directions:

1. Go to Room 213.

2. Read the instructions carefully and complete the inventory. This will take approximately 10 minutes.

3. If you have a question, ask the person available in Room 213.

4. When you have finished, leave the inventory with the person in Room 213.

5. You may return to your place in line.

Thank you.
INSTRUCTIONS

The purpose of this study is to measure the meaning for you of concepts of women high school physical education teachers and other women high school teachers by judging them against a series of descriptive scales. In taking this inventory, please make your judgments on the basis of what these things mean to you. On page 3 you will find the first concept to be judged, followed by a set of scales. You are to rate the concept on each of these scales in the order in which they are given.

Here is how you are to use these scales:

If you feel that the concept to be judged, for example, SCHOOL, is very closely related to one end of the scale, you should place your check-mark as follows:

SCHOOL

fair  X___________ unfair

or

fair _________ unfair X

If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

fair ___ X___________ unfair

or

fair _________ X ______ unfair

If the concept seems only slightly related to one side as opposed to the other side (but is not neutral), then you should check as follows:

fair _________ X___________ unfair

or

fair _________ X___________ unfair

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you are judging.

If you consider the concept to be neutral on the scale (that is, both sides of the scale seem equally associated with the
concept), or if the scale makes no sense (that is, both sides of the scale seem equally associated with the concept), or if the scale makes no sense (that is, it is unrelated to the concept), then you should place your check-mark in the middle space:

fair ________ . X __________ unfair

IMPORTANT: (1) Place your check-mark in the middle of spaces, not on the boundaries

THIS NOT THIS

______ . X ______ X ______

(2) Be sure you check every scale for every concept--do not omit any.

(3) Never put more than one check-mark on a single space.
GENERAL INFORMATION

Age ___________ Height ___________ Weight ___________

Home Address: __________________________________________
(Where you attended high school)

Number of years of high school physical education (9th through 12th grades) _______________________________

Please circle one response below:

I liked felt neutral disliked high school physical education.

I was good average poor in high school physical education.

ADDITIONAL INSTRUCTIONS

Do not look back and forth through the items. Make each item a separate and independent judgment. Work at a fairly high speed through this inventory. Do not worry or puzzle over individual items. It is your first impression, the immediate "feeling" about the item, that is wanted.

Don't be disturbed if the words at each end of the scales do not literally correspond with the concepts. Your first impression is the important one.

Concept I is women high school physical education teachers. Concept II is women high school teachers. You are indicating how you feel about your women high school physical education teachers and your other women high school teachers.
Concept I: I THINK THAT WOMEN HIGH SCHOOL PHYSICAL EDUCATION TEACHERS ARE:

1. good  ___________ bad
2. hard  ___________ soft
3. active  ___________ passive
4. old  ___________ young
5. optimistic  ___________ pessimistic
6. weak  ___________ strong
7. excitable  ___________ calm
8. colorful  ___________ colorless
9. unsociable  ___________ sociable
10. energetic  ___________ lazy
11. interesting  ___________ boring
12. cruel  ___________ kind
13. fast  ___________ slow
14. insensitive  ___________ sensitive
15. graceful  ___________ awkward
16. heavy  ___________ light
17. painful  ___________ pleasurable
18. aggressive  ___________ defensive
19. respectful  ___________ disrespectful
20. unattractive  ___________ attractive
21. feminine  ___________ masculine
22. unsuccessful  ___________ successful
23. brave  ___________ cowardly
24. aimless  ___________ motivated
25. sophisticated  ___________ naive
Concept I, Cont'd.  I THINK THAT WOMEN HIGH SCHOOL PHYSICAL EDUCATION TEACHERS ARE:

26. definite  ____________  uncertain
27. foolish  ____________  wise
28. happy  ____________  sad
29. sharp  ____________  dull
30. tense  ____________  relaxed
31. open  ____________  closed
32. fair  ____________  unfair
33. pleasant  ____________  unpleasant
34. organized  ____________  unorganized
35. intelligent  ____________  dumb
36. still  ____________  vibrant
37. honest  ____________  dishonest
38. polite  ____________  rude
39. peaceful  ____________  ferocious
40. childish  ____________  mature
ATTENTION: You Are Now Ready To Rate Concept II.

Concept II: I THINK THAT WOMEN HIGH SCHOOL TEACHERS ARE:

1. good ________ ________ ________ ________ bad
2. hard ________ ________ ________ ________ soft
3. active ________ ________ ________ ________ passive
4. old ________ ________ ________ ________ young
5. optimistic ________ ________ ________ ________ pessimistic
6. weak ________ ________ ________ ________ strong
7. excitable ________ ________ ________ ________ calm
8. colorful ________ ________ ________ ________ colorless
9. unsociable ________ ________ ________ ________ sociable
10. energetic ________ ________ ________ ________ lazy
11. interesting ________ ________ ________ ________ boring
12. cruel ________ ________ ________ ________ kind
13. fast ________ ________ ________ ________ slow
14. insensitive ________ ________ ________ ________ sensitive
15. graceful ________ ________ ________ ________ awkward
16. heavy ________ ________ ________ ________ light
17. painful ________ ________ ________ ________ pleasurable
18. aggressive ________ ________ ________ ________ defensive
19. respectful ________ ________ ________ ________ disrespectful
20. unattractive ________ ________ ________ ________ attractive
21. feminine ________ ________ ________ ________ masculine
22. unsuccessful ________ ________ ________ ________ successful
23. brave ________ ________ ________ ________ cowardly
24. aimless ________ ________ ________ ________ motivated
Concept II, Cont'd. I THINK THAT WOMEN HIGH SCHOOL TEACHERS ARE:

25. sophisticated naive
26. definite uncertain
27. foolish wise
28. happy sad
29. sharp dull
30. tense relaxed
31. open closed
32. fair unfair
33. pleasant unpleasant
34. organized unorganized
35. intelligent dumb
36. still vibrant
37. honest dishonest
38. polite rude
39. peaceful ferocious
40. childish mature
# SCALES USED IN EACH FACTOR

## Evaluative

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<thead>
<tr>
<th>Good</th>
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<td>Attractive</td>
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<tr>
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<td>Sociable</td>
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<td>Successful</td>
</tr>
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<td>Wise</td>
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<tr>
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<td>Awkward</td>
<td>Fair</td>
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## Potency

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<tbody>
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<td>Weak</td>
<td>Strong</td>
<td>Sharp</td>
<td>Dull</td>
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<td>Light</td>
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<td>Unpleasant</td>
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<td>Dumb</td>
</tr>
<tr>
<td>Brave</td>
<td>Cowardly</td>
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## Activity

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<th>Passive</th>
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<th>Motivated</th>
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<td>Uncertain</td>
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<tr>
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<td>Lazy</td>
<td>Tense</td>
<td>Relaxed</td>
</tr>
<tr>
<td>Fast</td>
<td>Slow</td>
<td>Still</td>
<td>Vibrant</td>
</tr>
<tr>
<td>Aggressive</td>
<td>Defensive</td>
<td>Peaceful</td>
<td>Ferocious</td>
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## Unassigned

<table>
<thead>
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<tbody>
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</tr>
<tr>
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<td>Boring</td>
<td>Organized</td>
<td>Unorganized</td>
</tr>
<tr>
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<td>Sensitive</td>
<td>Honest</td>
<td>Dishonest</td>
</tr>
<tr>
<td>Respectful</td>
<td>Disrespectful</td>
<td>Childish</td>
<td>Mature</td>
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