

AN ABSTRACT OF THE THESIS OF

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Title: Assessment of a Model to Predict Attitudes and Behavior of

Vocational Teacher Trainees Toward Handicapped Individuals

Abstract approved:

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A major problem of this study was to assess a model for predicting attitudes and behavior of vocational teacher trainees toward handicapped learners. A second problem was to determine whether or not both attitudes and behavior of vocational teacher trainees toward handicapped learners could be changed.

The sample for this study consisted of 63 university students preparing for certification to teach in four vocational education service areas. The subjects were randomly assigned to groups according to the Solomon Four Group design.

The independent variables included in the study were classified as: (1) structural factors (sex, father's occupation, mother's occupation, father's education, mother's education, area of residence, vocational education service area, and previous association); (2) significant other influence; (3) self-reflexive activity; and (4) other related attitudes. When behavior toward handicapped learners was considered the dependent variable, behavior was not considered in the analysis.

Path analysis, using multiple linear regression, was used to test the hypothesized causal model for predicting attitudes and behavior. Analysis of variance and chi-square were used to determine the effectiveness of an intervention process. The process consisted of a panel presentation by three handicapped persons in changing either attitudes or behavior of vocational teacher trainees toward handicapped individuals. The hypothesized causal model for predicting attitudes and behavior of vocational teacher trainees toward handicapped individuals was partially supported.

In this study the measured attitude did not predict the measured behavior. The literature on attitude serving as a predictor of behavior is equivocal. Significant other influence was predicted to have the most influence upon attitude. Significant other influence was defined as individuals who exercise major influence over the attitudes and behavior of others. The results of this study indicated that significant other influence was not only a predictor of attitude but also of behavior.

Self-reflexive activity was defined as behavior in which individuals confront themselves in responding to some object and make an inference about themselves based upon that confrontation. A significant relationship did not exist between this variable and any other variable except the structural factor, father's occupation. The failure of this variable to predict the dependent variables as theorized may have been due, in part, to measurement error.

Other related attitudes was defined as a group of similar attitudes which may serve as a filter category to ego concerning ego's

attitude toward a specific object. The results indicated that other related attitudes may predict attitudes toward handicapped individuals.

The results indicated that only certain structural factors were predictors of either attitudes or behavior of vocational teacher trainees toward handicapped individuals. Those factors were mother's occupation, mother's education and sex of the subject. These findings were not considered to be of great importance since teacher educators are unable to alter these factors to bring about either the desired attitudes or behavior on the part of future vocational teachers.

The particular intervention process used in this study was ineffective in changing either attitude or behavior. Since significant others were shown to be influential upon behavior, however, it is recommended that further research utilizing significant other influence be attempted.

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Toward Handicapped Individuals

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Assessment of a Model to Predict Attitudes and  
Behavior of Vocational Teacher Trainees  
Toward Handicapped Individuals

I. INTRODUCTION

The purpose of this study was to evaluate a theoretical approach toward the prediction of attitudes and behavior of vocational teachers toward the handicapped individual.

Background

In 1975, the Education of All Handicapped Children Act, P.L. 92-142, was enacted. The act mandates that free appropriate public education be provided for all handicapped children ages 6 to 17 by September 1, 1978, and handicapped individuals ages 17 to 21 by September of 1981. These same provisions apply to all handicapped children ages 3 to 5 unless they are in conflict with state law or court order.

The provisions of this landmark law embody the reforms which have come to be considered as prerequisites to successful implementation of full educational services for all children. Specific provisions include:

- Assurance of extensive child identification procedures.
- Assurance of "full service" goal and detailed timetable.
- A guarantee of complete due process procedure.
- Assurance of regular parent or guardian consultation.
- Maintenance of programs and procedures for comprehensive personnel development including inservice training.
- Assurance of special education being provided to all handicapped children in the "least restrictive" environment.
- Assurance of nondiscriminatory testing and evaluation.
- A guarantee of policies and procedures to protect the confidentiality of data and information.
- Assurance of the maintenance of an individualized program for all handicapped children.

Assurances of an effective policy guaranteeing the right of all handicapped children to a free, appropriate public education, at no cost to parents or guardian.

Assurance of a surrogate to act for any child when parents or guardians are either unknown or unavailable, or when said child is a legal ward of the state. (Jordan, 1977:17)

A major concern of educators is the term "mainstreaming." Mainstreaming can be defined as the education of handicapped students with non-handicapped students to the maximum extent appropriate when the regular classroom is considered to be the least restrictive environment (Halloran, 1976). In summary, the principles which should guide mainstreaming include:

Education for exceptional children should be an integral part of the total educational program;

Services should emphasize similarities between handicapped and non-handicapped rather than differences;

The more progress a handicapped child makes, the easier it is for her or him to utilize regular educational resources;

Each child must be served according to his or her needs;

Parents should be involved at each stage of the educational process;

The benefits of mainstreaming should be documented in a consistent fashion. (Jordan, 1977:21)

Although P.L. 94-142 is concerned with all facets of education, concern for the handicapped has been evident in federal legislation since the passage of the Vocational Education Act of 1963 (P.L. 88-210). This law clearly specified the need to serve those persons with handicapping conditions that prevented them from succeeding in a regular vocational program.

The Vocational Education Amendments of 1968 (P.L. 90-576) mandated that vocational education serve the handicapped. The Act required specifically that at least ten percent of the basic vocational education grants to the states be used exclusively for the handicapped. Title II of the Education Amendments of 1976 (P.L. 94-482), the

Vocational Education Amendments of 1976, reinforces once more congressional concern for vocational education for the handicapped.

There are various estimates about the number of handicapped persons in the United States. Twenty-five million persons, or one-eighth of our population, is a fairly well accepted figure (Evans, 1976). Some schools, such as the Calhoun Area Vocational Center in Battle Creek, Michigan, provide extensive service to mentally and physically handicapped students who represent about 30 percent of the student body (Halloran, 1976). Compared to what is available to most handicapped students, the program is "unusual and could serve as a model to other programs" (Evans, 1976:19). However, the converse is more typical. In 1975, handicapped individuals represented only 1.7 percent of the total vocational education enrollments. Furthermore, two-thirds of the vocational education provided to the handicapped was non-skills training. Seventy percent of the handicapped students enrolled in vocational education were in special classes (Halloran, 1978).

Vocational educators are not sufficiently prepared to meet the special needs of handicapped learners (Evans and Clark, 1976). Concerning their preparation, it does not appear to matter whether teachers are recruited directly out of business and industry or are products of teacher preparation programs (Evans, 1976).

In order to be effective, vocational teachers must have competencies necessary for working with handicapped students. However, teacher attitudes are an important contributor to teaching success and student progress (Blackwell, 1972; Chall, 1967; Coleman et al., 1966; Rosenthal and Jacobsen, 1969). These studies concluded that the teacher, not

materials or curriculum, was the critical variable for student achievement.

The challenge is clearly presented to overcome the attitudinal barriers which exist for handicapped individuals (Halloran, 1978; Bond, 1977). Non-handicapped persons have attitudes which tend to focus on the handicaps' disabilities rather than upon their abilities (Halloran, 1978). There is a need to focus upon the abilities of handicapped individuals to succeed (Evans and Clark, 1976)

#### Statement of the Problem

Numerous studies have been done concerning attitude formation and change toward handicapped individuals. As an example, Harasyniw et al. (1976) measured attitudes of students and teachers toward 20 disability groups to determine if those attitudes would allow the successful integration of handicapped individuals into a "regular" classroom. Their findings indicated a hierarchy of disorders by which certain handicapping conditions were viewed more positively than others. This led to their recommendation for a closer examination of the attitudes of teachers and students toward the integrated pupil. Drake (1977), in a comparative study of pre- and post-semester attitudes toward the handicapped in an introductory special education class, determined that the exposure to information concerning handicapped individuals resulted in a more positive score on the Attitude Toward Handicapped Individuals scale (Lazar, 1973).

A review of the literature concerning changing attitudes toward disabled persons yielded a limited number of experimental studies and

of these only four have shown significant modifications of attitudes in a positive direction (Donaldson and Martinson, 1977). Studies of this type have indicated the need for a better understanding of attitude formation and change concerning handicapped individuals. They also indicated the need for some measure of behavior resulting from the attitudes to determine the utility of measuring attitudes toward the handicapped in the first place.

Much time, effort and money has been spent studying the formation and change of attitudes. A perusal of learned journals in psychology, sociology, education and communications over the past decades indicated that the study of attitudes has perhaps been one of the most studied aspects of human behavior. Despite the extensiveness of research, attitude formation and the attitude change processes have not been well described.

There are many theories of attitude change. Among the more well known are the balance theory (Heider, 1946), the cognitive dissonance theory (Festinger, 1957), the congruity model (Osgood and Tannebaum, 1955), the balance model (Rosenberg, 1956) and Newcombe's ABX model (1956). The current measures of attitudes based upon these theories have been unsatisfactory in predicting behavior for several reasons (Miller, 1975; Mettlin, 1970). First, the theories are basically exploratory models which do not describe accurately the structure of the attitudes they are attempting to explain. A second weakness is that these theories assume a direct causal link between attitude and behavior even though this assumption has received little empirical support. Finally, these models have failed to account for the effects

which significant others have on the development of the attitudes (Miller, 1975).

Blumer (1955) criticized the concept of attitude as a means of analyzing human conduct. He claimed that in attitude research the attitude is seen as "a tendency, a state of preparation, or a state of readiness which lies behind action, directs action, and molds action" (p. 62). The popular notion is that the tendency to act accounts for the type of action which follows. However, most attitude studies have not concerned themselves with the subsequent behavior and, in studies which have been concerned with behavior, the relationship of attitude to behavior has been unconvincing.

In other examples where the measurement of attitudes has been used as a predictor of behavior, results have not indicated that measuring attitude was a reliable predictor of behavior. LaPierre (1934) in his classic study on the effects of attitudes on action, demonstrated that verbally stated attitudes had little bearing on the action taken when actually confronted with a situation in which negative attitudes were expressed. Similar results were found in a study by Kutner (1952) involving service to blacks in restaurants. He found that "discriminatory treatment is minimized when challenged in a direct face-to-face situation, but is maximized when proposals to 'violate' group norms are suggested" (1952:652).

The results of these two early studies of the attitude-behavior linkage seemed to indicate that a verbally expressed attitude of prejudice may not be the most powerful influence at the time the behavior takes place. In other words, attempts to predict behavior from



attitudes measured by the use of an attitude scale have been unsatisfactory. Bray (1950) stated that even though those who are interested in testing attitudes know that one of the tasks of science is prediction, they seldom attempted to predict behavior from their test results. Other investigators have admitted this problem when they make the assumption that the ultimate test of the validity of an attitude scale lies in the ability to predict behavior on the basis of the result (Bray, 1950). Bray's study indicated that attitudes were never elicited alone and that the behavior which resulted was a complex interaction of various drives. The measure of just one of these drives would show little obvious relationship to behavior.

The lack of a direct linkage between attitude and behavior can probably be best explained in terms of some social involvement which prevents persons from acting overtly according to their attitudes. DeFleur and Westie (1958) examined the salience of attitudes, which was defined as the readiness of an individual to translate an attitude into action. Their findings indicated that this salience was partially determined by the consideration of the policies and norms of meaningful social groups. This corresponds with Bray's (1950) ideas that behavior resulted from a complex interaction of various drives of which meaningful social groups may be one.

Recognizing that "... neither attitude, nor social situational variables adequately predict behavior when treated separately," Acock and DeFleur proposed a configurational approach to the attitude behavior relationship. "When combined in a linear model based on interaction between variables, behavior predictions are improved

considerably" (1972:714). Researchers are attempting to identify the variables in addition to attitudes which may allow a prediction of behavior. In reality, behavior is or should be of more concern than attitude. However, the measurement of attitudes requires less time and more opportunity than the measurement of behavior. Therefore, it is desirable that attitudes are measured in a way which will increase the validity of the measure in predicting behavior.

A process which may allow for a more direct connection between theoretical predictions of attitude and subsequent behavior might include the study of attitude formation, carefully looking at the influence of significant others and our own self-reflexive act. Significant others are those who "exercise major influence over the attitudes of others" (Woelfel and Haller, 1971:75). Self-reflexive activity refers to behavior in which individuals confront themselves in responding to some object and make an inference about themselves based upon that confrontation (Mead, 1931). Woelfel and Haller (1971) have proposed a theory which by its early predictive success, its interconnection between theory and measurement, and its inclusion of the effects of significant others shows promise in predicting behavior. Using this construct, McPhail (1971) was able to account for 77 percent of the variance in the rate of the participation in demonstrations and political rallies in the French separatist movement. Woelfel and Haller (1971), supported by Mettlin (1973), asserted that behavior and attitudes were partially determined by the information and expectations transmitted to a person by others. They stated that the information concerning attitudes and behavior came from two main sources,

"... other persons and our own self-reflexive activity" (Woelfel and Haller, 1971:73). The influence of the significant others was thought to be attitude specific, that is, a physician may be a significant other concerning a health attitude but may not influence choice of religion.

In summary, a person's attitude is considered to be influenced by certain significant others and the group of significant others will change according to the specific attitude being considered. The theory suggests that with a better understanding of attitude formation we can more accurately predict the attitude and thus more accurately predict behavior.

The problem of this study then was as follows:

1. What was the relationship of the variables that influenced the formation of attitudes toward handicapped individuals to the behavior of vocational teacher trainees toward handicapped learners?
2. To what extent did significant others influence the attitude formation process?
3. Who were the significant others who influenced the formation of attitudes toward handicapped individuals of vocational teacher trainees?

#### Significance of the Study

Because of the recent legislation emphasizing the educational rights of all children, including handicapped students, teachers must be prepared to provide appropriate education to all students. The answers to the above questions may give educators insight into the

training of teachers.

If the influence of significant others is shown to be important in attitude formations then knowledge of that influence can lead to a better prediction of behavior. Educators who are involved in preparing vocational teachers may have more assurance of increasing positive behavior toward handicapped students by providing positive significant others, in regard to the handicapped, for the teacher trainee.

#### Delimitations

1. This study was delimited to considering handicapping conditions in general.
2. This study measured attitudes and behavior only in the pre-test and post-test situation.
3. A long range behavior change was not measured.
4. Age was not used as a structural factor since it was assumed that the range in subjects' ages would be minimal.

#### Definition of Terms

Handicapped individuals, as defined in the Education Amendments of 1976 P.L. 94-482, Title II, Vocational Education, Section 195(7):

The term "handicapped" when applied to persons, means persons who are mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, crippled, or other health impaired persons who by reason thereof require special education and related services, and who, because of their handicapping condition, cannot succeed in the regular vocational education program without special education assistance or who require a modified vocational education program (2212).

Significant other, as defined by Woelfel and Haller (1971):

Individuals who exercise major influence over the attitudes and behavior of others.

Definer, as defined by Woelfel and Haller (1971):

A significant other who holds expectations for the attitude of ego.

Model, as defined by Woelfel and Haller (1971):

A significant other who serves as an example to ego concerning ego's attitude.

Self-reflexive activity, as defined by Mead (1934):

Behavior in which individuals confront themselves in responding to some object and make an inference about themselves based upon that confrontation.

Filter categories, as defined by Woelfel and Haller (1971):

A category in which similar objects are placed by ego and used to screen ego's perceptions of the objects contained within the category.

Other related attitudes, as defined by Mettlin (1970):

A group of similar attitudes which may serve as a filter category to ego concerning ego's attitude toward a specific object.

Attitude, as defined by Woelfel and Haller (1971):

The relationship which ego perceives to exist between its conception of itself and its conception of some object.

## II. REVIEW OF RELATED LITERATURE

As indicated earlier, there was substantial evidence to suggest that the attitude of a teacher toward a handicapped student was an important factor in the successful learning process of that student. However, there was no clear understanding of the formation of attitudes or of the linkage between attitude and behavior.

The purpose of this chapter was to present a general theory of attitude formation and change, propose the roles significant others and the self-reflexive act play in the attitude formation and change processes, and demonstrate the efficiency of the application of this theory to the attitudes of vocational teachers toward the handicapped.

### The Structure of Attitude

The literature contained nearly as many varied definitions of attitude as there were theories of attitude. The definitions vary from those regarding attitude as a state of readiness, a stabilized set, motives, purposes and dispositions, to definitions which included an element of the behavior or response. Such elements may be verbal responses for or against a psychological object or socially compelled behavior of an enduring type which serves as a determiner of the direction of an activity (DeFleur and Westie, 1963).

There were basically only two general conceptions of attitude. With both of these conceptions, attitudes assumed an underlying assumption of the behavioral stimulus-response framework. They differed, however, in the types of inferences made concerning the behavior. The two conceptions could be typified as: (1) probability conceptions and

(2) latent process conception. "The primary inference implied in probability conceptions is that attitude responses are more or less consistent" (DeFleur and Westie, 1963:21). The latent process conception also accepted response consistency. In addition, it included the operation of some hidden or hypothetical latent variable operating within an individual or self. From this viewpoint, attitude was defined as an inner process of the ego which determined immediately and directly the response of ego in regard to the attitude stimulus. Empirical support for the latent process inception has not been convincing.

On the other hand, the probability conceptions of attitudes, while more utilitarian, were not without certain potential disadvantages. The refinement of the probability conception would be to "... link our definitions more firmly to the methods we employ in measurement" (DeFleur and Westie, 1963:30).

Three elements appeared in the various probability conceptions of attitude: first, an individual who holds the attitude; second, the object toward which the attitude is held; and third, the relationship between the two. DeFleur and Westie (1963) claimed that social object must be clearly specified, but the conception of object alone was not sufficient to form an attitude. Without some reference to some quality of the self (Mead, 1934) a relationship between person and object cannot be formed (Woelfel, 1967). According to the symbolic interactionists, the confrontation between person and object was in the form of some symbolic structure (Kuhn, 1964). The relationship therefore between person and object was thought to be conceptual. From this base, Woelfel and Haller (1971) defined attitude as the relationship ego

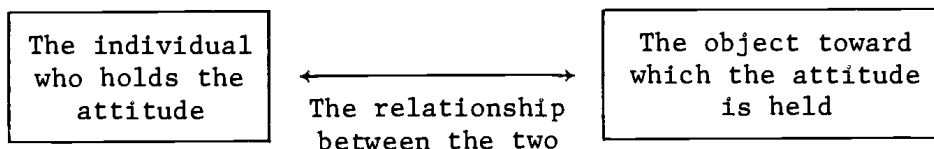


Figure 1. Three elements involved in attitude formation.

perceives to exist between its conception of itself and its conception of some object (Figure 1).

The process of forming a conception of some object was, in essence, a classification procedure by which the objects were placed in certain categories (Bruner, 1958). An ego may have an attitude toward some object because of an ability to place the object in a category which includes other objects perceived to be somewhat the same. The object of "teacher" may be associated with a category containing "helper," "intelligent person," and "important job." One might also define ego as an object in the categories of "intelligent person," "ambitious," "capable." Once these objects are thus categorized they exert an effect on other objects which are subsequently included (Mettlin, 1970).

By this process, if ego has assigned teacher as a helper and subsequently acquires information which leads it to designate counselor in the same category, some of the attitudes which ego holds toward the occupation teacher will also be held toward the occupation counselor. The category, therefore, filters out attitudes which will not be held toward the object (Mettlin, 1970). These categories were called "filter categories" (Woelfel and Haller, 1971) because they served to screen a person's perception of the objects contained within them. Attitudes then might be redefined as an individual's conception of the relationship between the filter categories of which one sees one's self



to be a member and the filter categories of which one sees the object to be a member (Woelfel and Haller, 1971).

The process stated above viewed categorization as a cognitive act based on information ego had or received about the self and the object. Therefore, attitude formation and change were those processes by which information about an individual's relationship to an object was transmitted to the ego. The basis of attitudes is information (Saltiel, 1972). There are three relevant sources which may provide information to ego concerning both the self and the object: significant other influence, self-reflexive activity and other related attitudes.

#### Significant Other Influence

A significant other may be viewed as any individual exerting influence over ego's attitude by providing information regarding the designation of ego and/or the object of the attitude (Saltiel, 1972). This term, as opposed to reference groups, (Sherif and Sherif, 1969) was used to reflect the recognition that in a segmentalized world, an individual was more likely to be influenced by specific individuals than by groups (Stryker, 1967; Cottrell and Foote, 1952). The influence of significant others was assumed to be attitude specific. One individual might be a significant other to ego in regard to an attitude held by ego toward an object, whereas that same individual might not be influential to ego concerning some other specific object.

There were several ways in which information might be transmitted or conveyed from a significant other to an ego. Significant others might be designated as serving either as models or definers. Definers

are those significant others who hold expectations for self. Models are those significant others who serve as examples for the self (Woelfel and Haller, 1971). It was theoretically important to make the distinction between information transmitted by definers and that conveyed by models. It was also important to determine whether the information applied directly to the self as object or whether it was filtered by some category of which self or object was a member (Mettlin, 1970).

Influence was exercised by definers communicating information to an ego via a symbolic medium, such as language. This information might be communicated directly or might be filtered by some category. An individual might help form or modify ego's attitude toward becoming a teacher by telling that person "You should become a teacher." This was an example of direct information provided by definer. On the other hand, ego might have placed the occupation of teacher in the category "occupations for intelligent individuals." In that case, the information provided by definer might be filtered by telling ego "You are an intelligent person." In addition, a definer might provide information directly concerning the object by saying "Teachers assess students' needs," or the definer might provide information concerning the object by means of a filter category in which teacher has already been designated as an individual valuable to society.

Communication of information was most often considered to be done by definers; however, an individual might knowingly or unknowingly have provided information to ego by being observed by ego (Mettlin, 1970). These individuals served as models. The information provided by models might also have been direct or filtered. Using the above example of

of ego's attitude toward becoming a teacher, a direct model for object might be any teacher observed by ego. A filtered model for object would be an intelligent individual observed by ego. Models, however, could not provide direct information concerning the designation of ego, they provided information to ego only as they were seen by ego as being in the same filter category as ego had placed the self. Thus, a teacher might have served as a model for ego only to the extent that ego had placed the self in the same filter category of intelligent person.

To summarize, Figure 2 illustrates the seven modes by which significant others may provide information to ego.

This formulation made no assumptions concerning any emotional or affective ties which may have existed between an ego and a significant other.

It assumes that others are significant in direct proportion to the amount of information they convey to an ego about the categories ego uses to define objects and ego, either by word (definers) or examples (models), affective factors notwithstanding (Woelfel and Haller, 1971:76).

The important variable was the information that was provided and not the mode through which it was provided. Modes can, therefore, serve as aids in identifying the source of influence which may affect an attitude. However, it did not indicate the net effect of the

	Definer	Model
Ego	filtered and direct	filtered
Object	filtered and direct	filtered and direct

Figure 2. Modes of information provided by significant others.

information. The determination of these modes was necessary for the design of an instrument that would elicit the influence of the relevant significant others. Most commonly a person receives information from a number of significant others through a number of modes. If the information received from all these various sources was basically the same, the outcome would be the same as if it came directly from only one source. Ego may, thus, receive many pieces of information from many sources and present no problem in terms of the theory. Problems may arise, however, if the information presented to ego regarding the ego and the object were disparate, because of the difficulty of combining the various sources of information into one variable, significant other influence, in order to determine the net effects of this variable on attitude (Saltiel, 1972).

A method of assessing the net effect upon an attitude of multiple and disparate information received from significant others was depicted in terms of the following formula. It was a measure which most effectively balanced all of the information on which ego bases an attitude (Mettlin, 1970; Saltiel, 1972).

$$\bar{x} = \frac{\sum x}{n}$$

where:  $\bar{x}$  = the value of ego's attitude

$x$  = the value of the information from a significant other as perceived by ego

$n$  = the number of instances in which information is presented to ego.

### Self-reflexive Activity

A person does not generally receive all the information concerning an object from the communication of others. Another source of information is the activity of reflection by the self. Mead (1934) defined self-reflexive activity as behavior in which an ego confronts itself in responding to some object and makes an inference about it as an active self on the basis of that confrontation. Woelfel and Haller (1971) used the term self-reflexive activity in the broadest sense to refer to any determination an individual makes about the relationship one sees to an object based upon observations that one makes. An ego is capable of determining its attitude toward an object either by information provided by significant others or by information provided by its own observations (Mettlin, 1970). In other words, self-reflexive activity might have been demonstrated by an individual seeing a person (object) walking down the street using a white cane. The ego might reflect upon the television program watched the previous night in which a blind person was shown as a computer programmer. The perceptions of the capabilities of the blind computer programmer would be associated with that person walking down the street. In another instance, the ego may feel a fear of blindness for itself due to a fear of darkness and think negatively of the capabilities of the person walking down the street.

The process of self-reflexive activity presumably occurs in the cognitive processes of the ego. It contained the same basic elements as the theory for assessing the influence of significant others (self, object, filter categories and information). It should have been possible to use the same formula that was used for determining a value for

significant other influence with one exception. The difference would be that instead of identifying the information provided by significant others, the information which was to be identified would be provided by those aspects of ego's cognitive processes.

An individual was therefore capable of providing information concerning an object by one's own unassisted observations. In other words, while walking alone in the country an individual might have seen a picnic table. That individual might reflect and determine one's self currently defined as ready to eat. That individual might then be expected to walk to the picnic table.

The theory did not order significant others influence and self-reflexive activity with regard to their importance. Woelfel and Haller (1971) hypothesized that self-reflexive activity was more influential than significant other when the object toward which the attitude was being formed was unambiguous and observable. It followed then that significant others were more influential when the object was ambiguous or nonobservable. For the conditions of this study it was assumed that handicapping conditions were ambiguous. Therefore, significant other influence was considered to be the more influential.

#### Other Related Attitudes

So far, attitudes have been considered as discrete elements within a cognitive structure with filter categories which were specific to the attitude. It was also important to realize that for any given attitude there were filter categories which may have served for several attitudes. Filter categories tended to overlap by their function as a categorizer

(Mettlin, 1970). These linkages of filter categories occurred when one filter category was applied to a variety of objects to determine if they belonged in that particular category. This process indicated that there may have been considerable amounts of information present due to the number of different filter categories used by an individual. These additional sources of information may have been perceived to make the measurement of the influence upon an attitude more difficult. However, the fact that large amounts of information may have been seen as having a cumulative effect upon the attitude through a general filter category made it possible to predict more accurately an attitude within that particular filter category (Mettlin, 1970). One's attitude toward a specific object may have been inferred from "the knowledge of the assignment of the object to the filter category and the knowledge of one's attitude toward the category" (Mettlin, 1970:32).

### Structural Factors

While this was essentially an information theory, structural factors were seen as influencing the type of significant others to which a person was exposed and the types of information that those significant others communicated.

Structural factors may have also influenced the self-reflexive activity engaged in by the person. The relevant structural factors varied from attitude to attitude (Saltiel, 1972). That information in conjunction with information which persons observe from their own activities provided the basis of the attitude. This information was evaluated in relation to previous information (other related attitudes).

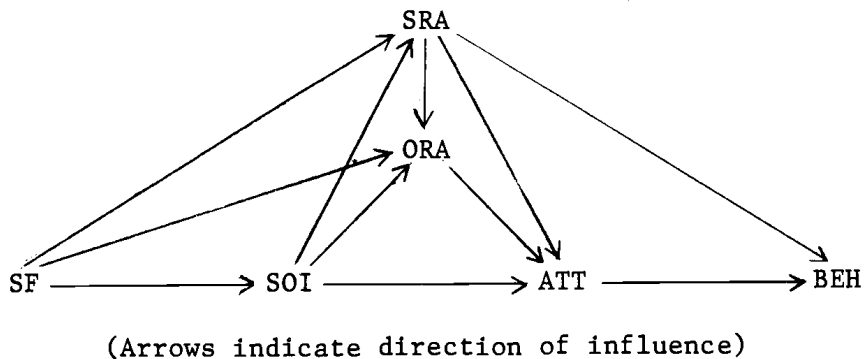


Figure 3. Schematic representation of a theory of attitude formation. SF, structural factors; SRA, self-reflexive activity; SOI, significant others influence; ATT, attitude; ORA, other related attitudes; BEH, behavior.

This theory consisted of five important variables: (1) the dependent attitude; (2) the information provided by significant others; (3) information provided by the process of the self-reflexive act; (4) previous related attitudes held by the person; and (5) the person's position in the social structure (Woelfel and Haller, 1971). A schematic representation of the theory is presented in Figure 3.

#### Teacher Attitudes Toward the Handicapped

Previous studies (Sigler and Lazar, 1976) have shown a lack of reliable predictions of teachers' attitudes toward handicapped students. Haring, Stern and Cruickshank (1958:1) have reported that:

Although successful educational programs for exceptional children appear to be largely dependent upon the attitudes of classroom teachers, the attitudes of teachers toward classroom integration of exceptional children have not been adequately explored.

More recently there have been several experimental studies to determine the effects of different pre-service treatments on the development of a more positive attitude toward the handicapped on the part of education



students (Stodden and Ianacone, 1975; Lazar et al., 1975; Drake, 1977; Donaldson and Martinson, 1977).

These studies stem from the definitions of attitude which describe attitudes as a set, a state of readiness. They made no attempt to determine the linkage between attitudes of vocational teachers toward the handicapped and the resulting behavior of the teacher in the classroom. The concern of this study was with definitions of attitude which included the resulting behavior. It was an attempt to apply Woelfel and Haller's theory to the prediction of attitude formation and change and the subsequent behavior of vocational teachers toward the handicapped. Recent investigations have reported on the effect of interpersonal contact with handicapped persons on the attitudes toward the handicapped (Cessna, 1967; Dickie, 1967; Felton, 1975; Strauch, 1970). Interpersonal contacts served as significant others either in the role of model or of definers for the vocational teacher.

The self-reflexive act as such has not been measured in studies toward the handicapped; however, Lazar et al. (1972) did recommend that persons be given the opportunity to think and act independently in accordance with a new attitude.

The use of other related attitudes as a variable in the study of attitudes toward the handicapped has not been evidenced in the literature. However, Allport (1958) suggested that values serving as categories be considered as determinants of attitudes. Katz (1960) agreed by expecting a high degree of consistency between a basic value and a more specific attitude. Woelfel and Haller (1971) considered it to be an important variable in their theory of attitude formation and change.

Structural factors may have influenced the types of significant others from which ego received information. They may also have influenced the type and amount of self-reflexive activity engaged in by an individual. In addition they may have had some influence over other related attitudes held by the individual. Therefore, they were considered to be important to this study. The literature suggested that demographic factors were important variables in the determination of attitudes (Jordan and Proctor, 1969; Mettlin, 1970).

Sex of vocational teacher was included as a structural variable. A number of previous investigations (Higgs, 1972; Lazar et al., 1971; Conine, 1969; Titley and Viney, 1969) have suggested that females tend to be more positive in their attitudes toward the handicapped than males.

Socio-economic status (SES), as measured by occupation and education of father and mother, was related to the type and number of significant others to which the individual is exposed (Jordan and Proctor, 1969; Mettlin, 1970). The theory suggested that ego's location in the social structure was taken into account when others set their expectations for that individual (Saltiel, 1972). Ego's location was also assumed to influence the models available to ego. The importance of SES also related to the type of self-reflexive activity engaged in by the individual by the fact that ego's location in the social structure was assumed to influence opportunities for confronting handicapped individuals as objects. In addition, SES was assumed to influence the other related attitude held by an individual due to the different situations which different SES may have presented to ego (Mettlin, 1970).

Mettlin (1970) suggested that residence may be an important factor

due to its influence on the amount and type of significant others with which an individual may come in contact. For example, a person living in a rural area of limited population may have less contact with handicapped individuals than a person living in a highly populated area. In addition, residence may also have had an influence on the other related attitude held by ego. For the purpose of this study a distinction was made between urban and rural subjects.

Yuker et al. (1960) found a positive correlation between attitude and previous association with the handicapped. However, Bell (1962) and Siller and Chipman (1964) found little relationship existing between attitude and previous association. Previous association with the handicapped was included as a variable in this study in order to determine if indeed it did influence the attitudes of vocational teachers toward the handicapped. It was possible that those previous associates may also have served as a significant other to ego.

Vocational educators are associated with the service areas in contrast to the more generic vocational education, perhaps, in part, due to the allocation of funds. It was felt that since this study did deal with prospective teachers in all of the vocational areas, that subject area may have been an important variable. This distinction may have been important since all areas of vocational education except business and distributive education are traditionally persons of one sex.

The dependent variable in this study was the subsequent behavior resulting from the attitude. Different approaches toward the problem of predicting behavior have been attempted. An example is Acock and DeFleur's (1972) interactive approach. Woelfel and Haller's (1971)

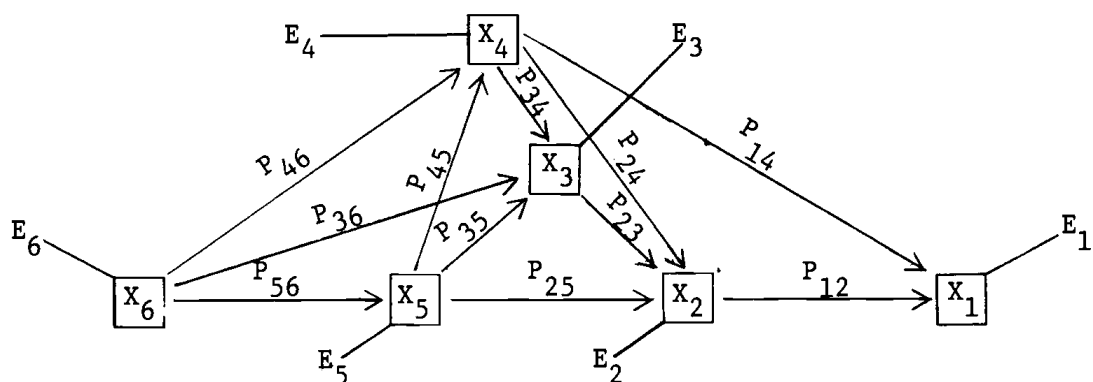
proposed theory examined variables which lead to the formation of attitudes. The additional information supplied by examining all of the variables included in this study should have lead to not only a more accurate prediction of attitudes but also of the subsequent behavior.

#### Summary

It was the intent of this chapter to provide the elements included in a theory of attitude formation and change and to relate the importance of those elements in studying the prediction of attitudes and the subsequent behavior of vocational educators toward handicapped persons. The theory asserted that attitudes were constructs of information provided by significant other influence, self-reflexive activity, other related attitudes which place self and object into filter categories, and the structural factors affecting the availability of significant others or of stimulation of the self-reflexive activity to provide the information. In addition, the attitude, and the information related to that attitude, were seen as being measured by the use of the automatic mean of the disparate pieces of information being measured.

Although this theoretical approach had proven to give significant results in previous studies (Mettlin, 1970; Saltiel, 1972; McPhail, 1971), the applicability of this theory to the prediction of the formation and change of attitudes toward the handicapped was yet to be demonstrated. In addition, this approach was yet to be used to predict behavior.

The model as represented in Figure 4 implies that structural factors would influence the choice of significant others and self-reflexive



$$\begin{aligned}
 X_6 &= && + E_6 \\
 X_5 &= P_{56}X_6 && + E_5 \\
 X_4 &= P_{46}X_6 + P_{45}X_5 && + E_4 \\
 X_3 &= P_{36}X_6 + P_{35}X_5 + P_{34}X_4 && + E_3 \\
 X_2 &= &P_{25}X_5 + P_{24}X_4 + P_{23}X_3 && + E_2 \\
 X_1 &= &&P_{14} && + P_{12}X_2 + E_1
 \end{aligned}$$

where:  $X_1$  = Behavior (BEH)  
 $X_2$  = Attitude (ATT)  
 $X_3$  = Other Related Attitudes (ORA)  
 $X_4$  = Self-reflexive Activity (SRA)  
 $X_5$  = Significant Other Influence (SOI)  
 $X_6$  = Structural Factors (SF)

Figure 4. Schematic presentation of the variables and paths represented in the model.

activity. The model further implied that significant others influenced both other related attitudes and the formation of the attitude. Self-reflexive activity as implied in the model influenced other related attitudes, the attitude itself and the behavior directly. In addition it is implied that attitude influenced the behavior. The model would explain a substantial amount of the variance in the formation of attitude and the subsequent behavior. If the implications of the model were sustained, then the following linear equations would represent the over-identified recursive model.

Within the framework of this model, significant others may have influenced a change of ego's attitude toward handicapped individuals. This influence may have been provided in the form of definers or models.<sup>1</sup> The use of an intervention process was an attempt to provide models to serve as significant others through interpersonal contact with handicapped persons. This intervention allowed for the formulation of the following hypotheses.

#### Hypotheses

- (1) Attitudes held by teacher trainees toward handicapped individuals prior to interpersonal contact with handicapped persons would not differ significantly from their attitudes after interpersonal contact.

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<sup>1</sup>A definer is a significant other who holds expectations for the attitude of ego. A model is a significant other who serves as an example to ego concerning ego's attitude.

- (2) Behavior of teacher trainees toward handicapped individuals prior to interpersonal contact with handicapped persons would not differ significantly from their behavior after interpersonal contact.
- (3) Significant other influence would have the strongest causal influence in the model.

### III. METHODOLOGY

#### Sample

The subjects who volunteered for the study were undergraduate students enrolled in vocational teacher education courses during the Winter Term 1979 at Oregon State University. The course, Ed 313 (Theory and Practicum III), had separate sections for Home Economics Education, Business and Distributive Education, Industrial Education and Agricultural Education. These sections met as a single group for two hours per week. Additional subjects volunteered from ED 408A (Secondary Methods in Industrial Education), ED 408B (Secondary Methods in Business Education), and IA 353 (Graphic Communications). There were 69 students who volunteered for the study. Subjects were randomly assigned to four groups using a table of random numbers. Sixty-three subjects (96 percent) completed all aspects of the study.

The results of this study may be generalized to vocational teacher trainees in three service areas of vocational education: Business Education, Agricultural Education and Industrial Education, at Oregon State University (Table 1). The fourth service area, Home Economics Education, was not represented adequately enough to be able to generalize to the larger population in Home Economics Education at Oregon State University (Table 2).

There were 36 male subjects and 27 female subjects in the study. There were no significant differences ( $\chi^2 = 1.54$ ,  $ndf = 3$ ,  $p > .05$ ) in percent male or female subjects between the four groups to which the subjects belonged (Table 3).



Table 1. Distributions of graduates during 1974-75 through 1977-78 and of subjects by three service area affiliations.

Service Area	Percentage 1974-75 to 1977-78 Graduates	Expected Frequency	Observed Frequency	$\chi^2$
Agricultural Education	22.1	12.6	17	1.537
Business Education	32.6	18.6	22	0.622
Industrial Education	45.3	25.8	18	2.358
	100%	57.0	57	4.517

ndf = 2,  $p > .05$

Table 2. Distribution of graduates during 1974-75 through 1977-78 and of subjects by four service area affiliations.

Service Area	Percentage 1974-75 to 1977-78 Graduates	Expected Frequency	Observed Frequency	$\chi^2$
Agricultural Education	14.5	9.1	17	6.858
Business Education	21.2	13.4	22	5.519
Home Economics Education	34.8	21.9	6	11.544
Industrial Education	29.5	18.6	18	0.019
	100%	63.0	63	23.940

ndf = 3,  $p < .05$

Table 3. Number and percentages of male and female subjects in each group (n = 63).

Group	Sex				Total	
	Male		Female		N	%
	N	%	N	%		
I	10	15.9	5	7.9	15	23.8
II	8	12.7	7	11.1	15	23.9
III	10	15.9	6	9.5	16	25.4
IV	8	12.1	9	14.3	17	27
Total n	36		27		63	
%		57.1		42.9		100

Table 4. Number and percentage of male and female subjects in each vocational education service area (n = 63).

Vocational Education Area	Sex				Total	
	Male		Female		N	%
	N	%	N	%		
Industrial Education	16	25.4	1	1.6	17	27
Agricultural Education	13	20.6	5	7.9	18	28.6
Business Education	7	11.1	15	23.8	22	34.9
Home Economics Education	0		6	9.5	6	9.5
Total n	36		27		63	
%		57.1		42.9		100

There was a significant difference ( $X^2 = 24.92$ ,  $ndf = 3$ ,  $p < .05$ ) in percent male or female subjects between the vocational education areas, which was expected. All of the subjects from Home Economics Education were female and all but one of the subjects from Industrial Education were male. Business Education and Agricultural Education were better represented by both sexes; however, the traditional sex roles were still somewhat maintained with Business Education having 68 percent females and Agricultural Education having 72 percent males (Table 4).

The distribution of educational level of the subjects' fathers closely resembled a normal curve (degree of skewness = .018). The greatest percentage of fathers had completed high school with the next highest percentage having some college experience (Table 5). The number of subjects whose fathers had less than eighth grade education was the same as the number whose fathers had an advanced degree. There was no significant difference ( $X^2 = 4.59$ ,  $ndf = 2.3$ ,  $p > .05$ ) in level of fathers' education between the four groups of subjects.<sup>2</sup>

The educational level of the subjects' mothers was more negatively skewed (degree of skewness =  $-.546$ ) than that of the fathers. The highest percentage of the mothers had some college experience and the next highest percentage had completed high school (Table 6). The two categories account for over 71 percent of the mothers. While there were only five percent of the mothers who had not completed the eighth grade as compared to eight percent of the fathers, no mothers had an advanced

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<sup>2</sup>The data were collapsed into two groups, those with 12 grades or less and those with some college or more.

Table 5. Number and percentage of subjects in each level of educational attainment of father.

<u>Father's Education</u>	<u>N</u>	<u>Percentage</u>
8 grades or less	5	7.9
9-11 grades	6	9.5
12 grades	23	36.5
Some college	13	20.6
College degree	11	17.5
Advanced degree	5	7.9
Total	63	100

Table 6. Number and percentage of subjects in each level of educational attainment of mother.

<u>Mother's Education</u>	<u>N</u>	<u>Percentage</u>
8 grades or less	3	4.8
9-11 grades	5	7.9
12 grades	21	33.3
Some college	24	38.1
College degree	10	15.9
Total	63	100

degree whereas eight percent of the fathers had advanced degrees. There was no significant difference ( $X^2 = .6$ ,  $ndf = 3$ ,  $p > .05$ )<sup>3</sup> in level of mothers' education between the four groups of subjects.

Almost half of the subjects came from urban backgrounds while a third of the subjects came from rural backgrounds (Table 7). The remainder came from small towns of under 10,000 population. There was no significant difference ( $X^2 = 1.13$ ,  $ndf = 3$ ,  $p > .05$ )<sup>4</sup> in area of residence between the four groups of subjects.

The subjects were distributed according to vocational education service area with Industrial Education and Agricultural Education representing 27 percent and 29 percent, respectively, Business Education representing 35 percent, and Home Economics representing 10 percent of the sample (Table 8). There was no significant difference in vocational area between the four groups of subjects.<sup>5</sup>

#### Explanation of Variables

There was a total of 14 variables including the eight structural variables, the 20 item measure of attitude, the two item measure of self-reflexive activity, the 12 item measure of significant other influence, the six item measure of other related attitudes, a single item measure of attitude toward the handicapped, and a three item

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<sup>3</sup>The data were collapsed into two groups, those with 12 grades or less and those with some college or more.

<sup>4</sup>The data were collapsed into two groups, those living in areas of less than 2,500 (rural) and those in areas of 2,500 or more (urban).

<sup>5</sup>The data were collapsed into two groups, those predominately female and those predominately male.

Table 7. Number and percentage of subjects according to area of residence.

<u>Area of Residence</u>	<u>N</u>	<u>Percentage</u>
A farm	9	14.3
Open country, but not a farm	13	20.6
In a village under 2,500	3	4.8
In a town of 2,500-10,000	8	12.7
In a city over 10,000	30	47.6
	<hr/>	<hr/>
Total	63	100

Table 8. Number and percentage of subjects according to vocational education service area.

<u>Vocational Service Area</u>	<u>N</u>	<u>Percentage</u>
Industrial Education	17	27.0
Agricultural Education	18	28.6
Business Education	22	34.9
Home Economics Education	6	9.5
	<hr/>	<hr/>
Total	63	100

measure of behavior. Table 9 indicates the placement of the items on the instruments, which are found in Appendices B and C. Each variable was classified in terms of the operation dimension, the theoretical dimension which each represented, the variable notation, and the specific instruments by which it was measured.

### Structural Factors

The structural variables included were sex, socioeconomic status (SES), residence, previous association, and subject area. Age was not included because very little variation in the ages of the subjects was expected (Appendix B).

The socioeconomic status was measured by father's and mother's occupation and education (Saltiel, 1972; Mettlin, 1970). Classification of residence was suggested by Mettlin (1970) and Saltiel (1972).

### Significant Others Influence (SOI)

The theory predicted that SOI would be the best single predictor of attitude (McPhail, 1971). For the purpose of this study significant others were identified as either those individuals perceived as having expectations of attitudes (Mead, 1934) and behavior for the subjects (definers) or those individuals who may have served as models for attitudes and behavior of the subject. Significant others were identified from the following types of individuals: parents, relatives, friends, acquaintances, teachers, handicapped individuals (Appendix B).

Table 9. Identification and classification of operational variables.

Operational Variable	Theoretical Variable	Variable Notation	Measure
Sex	Structural Factor	X <sub>6</sub>	Appendix B q. 1
Father's Occupation	Structural Factor	X <sub>7</sub>	Appendix B q. 2
Mother's Occupation	Structural Factor	X <sub>8</sub>	Appendix B q. 3
Father's Education	Structural Factor	X <sub>9</sub>	Appendix B q. 4
Mother's Education	Structural Factor	X <sub>10</sub>	Appendix B q. 4
Area of Residence	Structural Factor	X <sub>11</sub>	Appendix B q. 5
Vocational Area	Structural Factor	X <sub>12</sub>	Appendix B q. 6
Previous Association	Structural Factor	X <sub>32</sub>	Appendix B q. 58
Attitude Toward Handicapped Individual Scale	Attitude	X <sub>2</sub>	Appendix B q. 7, 8, 11, 14, 16, 18, 21, 25, 27, 29, 32, 35, 37, 39, 43, 46, 48, 51, 54, 56
Check on Attitude Measure	Attitude	X <sub>49</sub>	Appendix B q. 107
Self Observation	Self-reflexive Activity	X <sub>4</sub>	Appendix B q. 62
Persons Who Hold Expectations for the Subject (Definers)	Significant Other Influence	X <sub>5</sub>	Appendix B q. 67, 68, 69, 70, 71, 72
Persons Who Set Examples for Subject (Models)	Significant Other Influence	X <sub>5</sub>	Appendix B q. 91, 92, 93, 94, 95, 96
Filter Categories	Other Related Attitudes	X <sub>3</sub>	Appendix B q. 103, 104, 105, 106, 108, 109
Selection of Students	Behavior	X <sub>1</sub>	Appendix C



### Self-reflexive Activity (SRA)

According to the theory, self-reflexive activity was identified as providing information to ego by means of interaction with the self by confrontation with and observation of an object and making inferences concerning the object (Woelfel and Haller, 1971). For this study, the handicapped were perceived in the following situations: (1) attempting to cross the street, (2) as a classmate (Appendix B).

### Other Related Attitudes (ORA)

Other related attitudes as presented in the theory represented the larger filter categories in which attitudes concerning handicapped individuals were included. Those items chosen to be included in the filter category which might include the handicapped were: (1) Blacks, (2) Chicanos, (3) Native Americans, (4) persons of non-traditional sex roles in their field, (5) Japanese-Americans, (6) Swedish Americans. These items were chosen because these groups might be viewed as being the objects toward which stereotyping might be directed (Appendix B).

If one's attitude consisted of the conception of the relationship to the object(s) in question, and if one's definition of self and object was dependent upon the definition of the filter categories in which one places both one's self and the object, then one's attitude would be directly influenced by the orientation toward the filter categories (McPhail, 1971).

### Procedure

The major purpose of this study was to determine the effectiveness of Woelfel's and Haller's theory in predicting the attitude and behavior of vocational teacher trainees toward handicapped individuals.

An instrument was developed to measure each of the variables in the model. The instrument used to measure the variable attitude (ATT) was the Attitude Toward Handicapped Individuals (ATHI) scale developed by Lazar (1973).<sup>6</sup>

Additional statements were included to measure structural factors (SF), self-reflexive activity (SRA), other related attitudes (ORA), and significant other influence (SOI) both as definers and models. The instrument was designed to include distractors in an attempt to reduce the effects of demand characteristics on the replies of the subjects.<sup>7</sup> The instrument for measuring the dependent variable, behavior (BEH), toward handicapped learners, consisted of three cumulative student records of hypothetical high school students (Appendix C).<sup>8</sup>

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<sup>6</sup>A coefficient of stability at .73 over a two-week period in a test-retest situation has been established by Stodden, Groves and Lazar (1973) and Lazar and Dankom (1974).

<sup>7</sup>A pilot test revealed that teacher trainees tend to respond in a way they feel the instructor would want them to. The distractors will hopefully mask which attitudes were being measured.

<sup>8</sup>Content validity was assured by a panel of experts consisting of a handicapped person, a Director of Special Education, and A specialist in Special Needs students. The test-retest reliability coefficient was .60 for attitude, .52 for self-reflexive activity, .65 for significant other influence, and .54 for other related attitudes. The split half reliability coefficient for attitude was .62. There was no significant difference between pre-test and post-test scores for behavior ( $X^2 = .19$ ,  $dnf = 2$ ,  $p = .92$ ).

An assumption was made that the subject was a teacher in one of the vocational service areas. The teacher had a laboratory class of 20 students. Because of a change of conditions, the teacher was able to accommodate two more students in the class. Three students had requested admittance to the class. The teacher selected the two students who would be admitted to the class using the cumulative records to make those judgments. Of the three cumulative records, one of the students had a handicapping condition. It was therefore possible to select two students for the class and not include the handicapped student. The selection of the one handicapped student was used to indicate positive behavior toward handicapped individuals (Appendix C).

Another part of this study was to help identify significant others who might serve as either definers or models to vocational teachers involved in pre-service education. It was hypothesized that handicapped persons themselves might serve as powerful significant others in a direct confrontation.

A panel of three handicapped persons from Oregon State University was asked to make a presentation concerning their handicaps and the additudinal barriers they face to two of the groups of subjects.

The persons serving on the panel had the following handicaps: (1) a blind university student, (2) a deaf university student, and (3) orthopedically impaired woman in a wheelchair who is employed at Oregon State University. These persons were well adjusted to their handicapping condition and were capable individuals. It was recognized that not all handicapped individuals are as capable and articulate as these three persons; however, the purpose was to provide the subjects with powerful

models who would serve as significant others.

The effects of this treatment were measured by the administration of the same attitude and behavior scale as used prior to the application of the treatment.

The Solomon Four Group Design was used to collect and analyze the data. This design resulted from a combination of the pre-test - post-test and the post-test control group design (Eckhardt and Ermann, 1977). The advantages of using the Solomon Four Group Design were (1) it considered external validity factors, (2) it determined both the main effects of testing, the interaction of testing and the treatment, (3) it increased generalizability, and (4) inferences were strengthened if the comparisons were in agreement (Gage, 1963). The logic of the Solomon Four Group Design is shown in Table 10. Volunteers enrolled in courses in Home Economics Education, Business and/or Distributive Education, Industrial Education and Agricultural Education were randomly assigned to Group 1, Group 2, Group 3, or Group 4.

Table 10. The logic of the Solomon Four Group Design (Eckhardt and Ermann, 1977:327).

Random Assignemnt of Unaware Subjects to Either	Pre-test Observation	Introduce Experimental Variable	Post-test Observation
Group 1 (Experimental group)	$O_1$	X	$O_2$
Group 2 (Control group)	$O_3$		$O_4$
Group 3 (Experimental group)		X	$O_5$
Group 4 (Control group)			$O_6$

The pre-test observation and the post-test observation both consisted of the instrument to measure attitude and the instrument to measure behavior. They were administered in this order to prevent the attitude being influenced by the behavior measure.

The pre-test observation was administered to groups one and two during the second week of Winter Term, 1979. The treatment which consisted of the panel presentation made by handicapped individuals was presented during the third week of Winter Term to groups 1 and 3. The post-test observations were administered during the first class session following the presentation to all four groups.

#### Analysis

Path analysis (Kapes et al., 1976; Alwin and Hauser, 1975; Anderson and Evans, 1974) using multiple correlation and multiple regression was used to determine if the hypothesized causal flow of the Woefel and Haller theory was sustained at the 0.1 level. Path analysis is primarily a method of decomposing and interpreting linear relationships among a set of variables taking into account the following assumptions: (1) a weak causal order among these variables is known, and (2) the relationships among these variables are causally closed (Wright, 1921). Since it was inappropriate to aggregate the structural factors into one variable as proposed in the model, the structural factors were treated as separate variables represented by  $X_6$  through  $X_{11}$  in the analysis. The placement of each of these variables in the model remained the same as the original proposed variable of Structural Factor ( $X_6$ ).

Analysis of variance was used to determine if a significant difference at the .05 level existed in attitudinal change, due to the application of the treatment of the panel of handicapped persons, between the pre-test and the post-test. The chi-square was used to determine if a significant difference at the .05 level existed in behavior change due to the treatment between the pre-test and the post-test. The chi-square was also used to determine if a significant difference existed between males and females in relation to both attitudes and behavior of vocational teacher trainees toward handicapped learners. In addition, chi-square was used to determine if a significant difference existed between vocational education service area and both attitude and behavior.

#### IV. FINDINGS AND DISCUSSION

In the preceding chapter a research strategy was presented which involved the analysis of data obtained through the use of instruments presented in Appendices B and C. The instruments were administered to 63 university students enrolled in courses leading to certification in vocational education at Oregon State University during Winter Term, 1979. The purpose of the research strategy was to assess the effectiveness of the theoretical model in predicting attitudes and behavior of vocational teacher trainees toward handicapped individuals. The explanatory power of the theory may be assessed in terms of the amount of variance in the dependent variables which was explained by the independent variables.

##### Findings

The zero order correlations among the variables are presented in Table 11. Although this analysis was not directly concerned with these coefficients, a few comments are in order. Of interest was the lack of substantial correlations among the variables. The most substantial correlation was between significant other influence and attitude which was expected. The next strongest correlation with attitude was other related attitudes. There was a correlation between attitude and behavior which was not upheld in the reconstructed model. This might have indicated that behavior might have some effect on attitude. This would not be shown in the path analytic model due to the direction of the causal flow of the path analytic model.

Table 11. Observed zero order correlation of 12 variables for 63 subjects.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Attitude	1.00											
2. Other Related Attitudes	.16	1.00										
3. Self-reflexive Activity	.03	.07	1.00									
4. Significant Other Influence	.55	-.14	.06	1.00								
5. Sex	.01	.11	-.08	.15	1.00							
6. Father's Occupation	.09	.19	.35	.12	-.03	1.00						
7. Mother's Occupation	.08	.08	.10	.45	.26	.12	1.00					
8. Father's Education	.11	.13	.12	.16	.09	.60	.09	1.00				
9. Mother's Education	-.04	.13	.21	.16	-.04	.49	.24	.51	1.00			
10. Area of Residence	.06	.16	-.02	.14	.26	.44	.10	.44	-.16	1.00		
11. Previous Association	.05	.13	-.05	-.001	-.06	.09	.002	-.07	-.02	.07	1.00	
12. Behavior	.22	.23	-.10	.18	.24	-.09	.17	.02	-.23	.05	.25	1.00

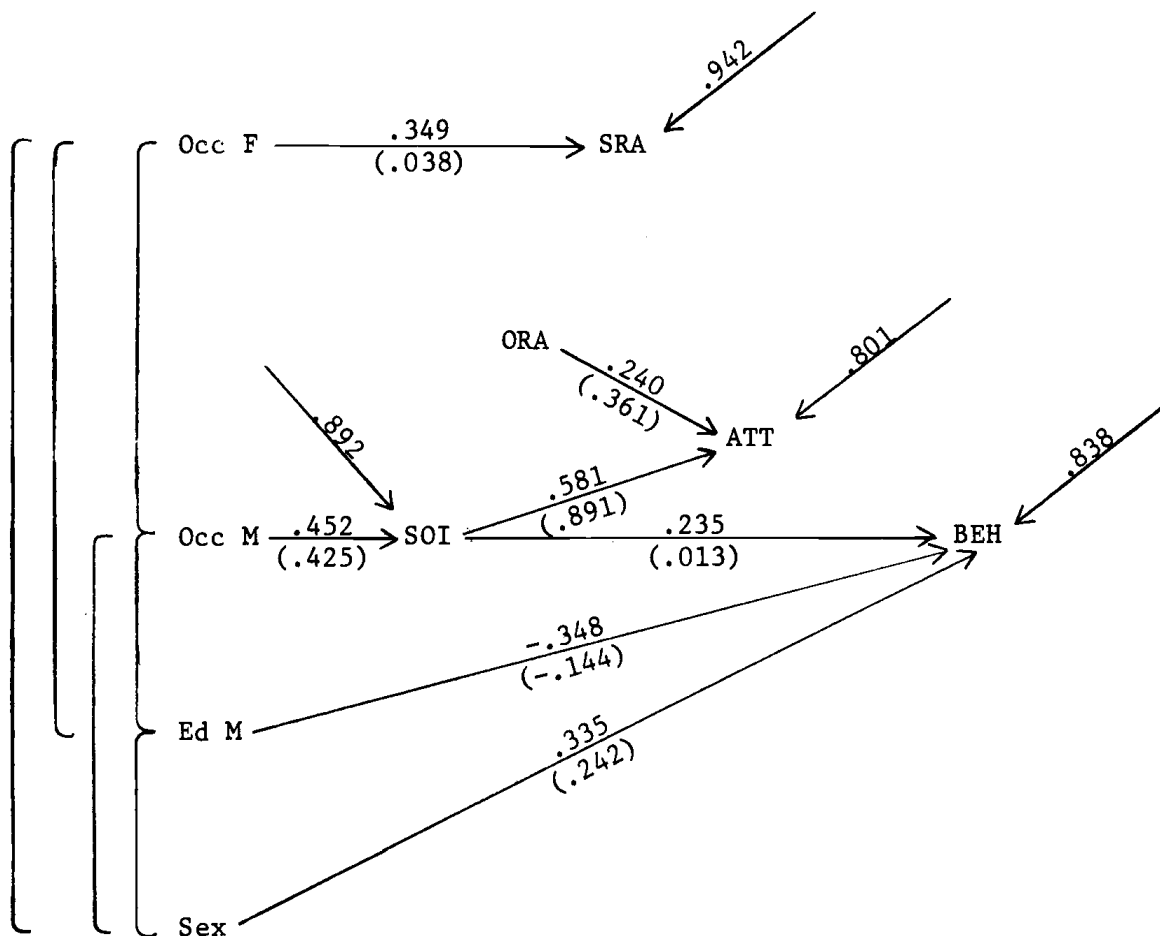


The strongest correlation with significant other influence was the mother's occupation. This finding was indicated in the reconstructed model. The three variables, significant other influence, sex and mother's occupation, were slightly correlated with behavior, enough so that they were upheld in the model. Although two other variables, other related attitudes and previous association, also showed slight correlation with behavior, these relationships were not sustained by path analysis.

The model as proposed in the second chapter resulted in the generation of five hypothesized regression equations (Figure 4, p. 27). Based on these equations, the data were subjected to regression analysis. Four regression equations were shown to be significant at the 0.1 level. The data partially supported the model as hypothesized. Several of the paths were sustained and three additional paths were indicated. The model as indicated by the analysis of the data is represented in Figure 5. The four regression equations that were generated are shown in Figure 6. Although caution should be exercised in interpreting these coefficients due to the possibility of measurement error, the findings indicated the existence of some of the relationships where they were theoretically predicted.

The results indicated that mother's occupation, one of the group of structural factors proposed in the model, was the sole predictor of significant other influence ( $\beta = .425$ ,  $F = 12.55$ ,  $ndf, 1, 49$ ,  $p < .1$ ). Father's occupation, another structural factor, was the sole predictor of self-reflexive activity ( $\beta = .038$ ,  $F = 6.78$ ,  $ndf, 1, 49$ ,  $p < .1$ ).

The variable self-reflexive activity had no significant relationship



Where: Occ F = Father's Occupation  
 Occ M = Mother's Occupation  
 Ed M = Mother's Education  
 SRA = Self-reflexive Activity  
 ORA = Other Related Attitudes  
 SOI = Significant Other Influence  
 ATT = Attitude  
 BEH = Behavior  
 Sex Coded, Male = 1, Female = 2

Figure 5. Schematic representation of the variables and the paths in the model based on the computed regression coefficients. (The standardized path coefficients are above the line; the unstandardized path coefficients are indicated in parentheses.)

$$\text{SOI} = 32.13 + .425 \text{ Ed M}$$

$$\beta = \rho = (.452) \quad R^2 = .204 \quad (1-R^2) = .796$$

$$F = 12.55 \quad \text{ndf} = 1, 49 \quad p = .001$$

$$\text{SRA} = 4.22 + .038 \text{ Occ F}$$

$$\beta = \rho = (.349) \quad R^2 = .122 \quad (1-R^2) = .888$$

$$F = .678 \quad \text{ndf} = 1, 49 \quad p = .012$$

$$\text{ATT} = 28.75 + .891 \text{ SOI} + .361 \text{ ORA}$$

$$\beta = \rho = (.581) \quad \beta = \rho = (.240) \quad R^2 = .358 \quad (1-R^2) = .642$$

$$F = 21.07 \quad \text{ndf} = 1, 49 \quad p = .001 \text{ (SOI)}$$

$$\text{BEH} = 1.19 + .012 \text{ SOI} - .132 \text{ Ed M} + .266 \text{ SEX}$$

$$\beta = \rho = (.235) \quad \beta = \rho = (-.348) \quad \beta = \rho = (.335)$$

$$R^2 = .297 \quad (1-R^2) = .703$$

$$F = 6.60 \quad \text{ndf} = 3, 47 \quad p = .001 \text{ (SOI)}$$

$$F = 7.74 \quad \text{ndf} = 2, 48 \quad p = .001 \text{ (Ed M)}$$

$$F = 8.55 \quad \text{ndf} = 1, 49 \quad p = .005 \text{ (SEX)}$$

Figure 6. Estimated equations for final path analysis model. (Standardized path coefficients are in parentheses. F values are to enter equations.)

to any other variable which it was theoretically to predict at the 0.1 level.<sup>10</sup>

The analysis failed to yield any significant predictors of other related attitudes which had been theoretically proposed.

The most important finding in the study was the strong positive path from significant other influence to attitude ( $\beta = .841$ ,  $F = 21.08$ ,  $ndf = 1, 49$ ,  $p < .1$ ). Results did support the proposed model by indicating a significant relationship between other related attitudes and attitude ( $\beta = .361$ ,  $F = 4.24$ ,  $ndf = 2, 48$ ,  $p < .1$ ). The findings also indicated a direct path from significant other influence to behavior ( $\beta = .013$ ,  $F = 4.72$ ,  $ndf = 4, 46$ ,  $p < .1$ ). Other related attitudes indicated some support to the proposed model by a weak, but not significant relationship between other related attitudes and behavior.

In addition, two structural variables which, although they were not theoretically proposed by the model, did show significant relationships to behavior, were mother's education ( $\beta = -.144$ ,  $F = 9.51$ ,  $ndf = 4, 46$ ,  $p < .1$ ) and sex ( $\beta = .242$ ,  $F = 6.14$ ,  $ndf = 4, 46$ ,  $p < .1$ ). The analysis indicated no significant relationship ( $\beta = -.077$ ,  $F = .026$ ,  $ndf = 1, 49$ ,  $p > .1$ ) between attitude and behavior.

An additional question suggested in the literature was that sex would be influential in determining attitudes toward the handicapped with some studies suggesting that females had more positive attitudes than males. Analysis of variance was used to determine if a significant

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<sup>10</sup>Other related attitudes ( $\beta = .073$ ,  $F = .478$ ,  $ndf = 1, 49$ ,  $p > .1$ ).  
 Attitude ( $\beta = -.008$ ,  $F = .023$ ,  $ndf = 2, 48$ ,  $p > .1$ ).  
 Behavior ( $\beta = -.115$ ,  $F = 2.27$ ,  $ndf = 2, 48$ ,  $p > .1$ ).

difference existed between males and females in relation to attitudes toward handicapped learners. The results indicated that no significant difference existed between the sexes and their attitudes toward the handicapped. However, the multiple regression equation for behavior did indicate that there was a significant relationship between behavior of the subject toward handicapped learners and the sex of the subject.

#### Effect of Treatment on Attitude and Behavior

The use of the Solomon Four Group Design allowed for analysis to determine if the post-test measurement was affected by the pre-test measurement (Table 12). The results indicated that the pre-test made no significant difference upon the post-test scores ( $F = 2.11$ ,  $ndf = 1$ ,  $p > .05$ ).

Another purpose of the study was to determine if the presentation of a panel of handicapped individuals serving as significant others (models) could change attitudes of vocational teacher trainees toward handicapped learners (Table 13). The results indicated that no significant difference existed ( $F = 2.458$ ,  $ndf = 1$ ,  $54$ ,  $p > .05$ ).

An additional purpose of the study was to determine if a panel of handicapped individuals could affect the behavior of vocational teacher trainees toward handicapped learners. The results indicated that there was no significant difference between the experimental and the control groups ( $X^2 = .239$ ,  $ndf = 2$ ,  $p > .05$ ) (Table 14).

The results indicated no significant difference between sex of the subjects and attitude ( $X^2 = 29.33$ ,  $ndf = 31$ ,  $p > .05$ ). There was also no significant difference between subject's service areas in vocational

Table 12. Two factor analysis of variance of attitude toward handicapped learners held by vocational teacher trainees in experimental and control groups during pre-test and post-test (repeated measures).

Source	SS	Ndf	MS	F	P
Within Subjects					
By Subject Within Groups	394.22	21	18.77		
Tests (B)	74.56	1	74.56	3.97	.059
A X B	39.57	1	39.57	2.11	.161
Between Subjects					
Subjects Within Groups	7334.07	26	277.85		
Groups (A)	158.33	1	158.33	.57	.457

Table 13. Analysis of variance of attitudes toward handicapped learners in the experimental and control groups after treatment (n = 56).

Source of Variation	Sum of Squares	DF	Mean Squares	F	p
Groups	379.453	1	379.453	2.458	.123
Residual	8335.101	54	154.354		
Total	8714.554	55			

Table 14. Number and percent of subjects in experimental and control groups selecting each type of student to exclude from vocational training (n = 63).

Behavior	Experimental		Control		Total	
	N	%	N	%	N	%
Handicapped Student (Mid-ability)	8	25.8	10	31.3	18	28.6
Non-handicapped Student (Low Ability)	16	51.6	15	46.9	31	49.2
Non-handicapped Student (High Ability)	7	22.6	7	21.9	14	22.2
Total	31		32		63	
		49.2		50.8		100

education and attitude ( $F = 1.233$ ,  $ndf = 3$ ,  $p > .05$ ).

In contrast to the inability of vocational service area of the subject and sex of the subject to influence attitude, both the vocational service area (Table 15) ( $X^2 = 23.92$ ,  $ndf = 3$ ,  $p < .05$ ) and the sex of the subjects (Table 16) ( $X^2 = 12.265$ ,  $ndf = 1$ ,  $p < .05$ ) indicated a significant difference with behavior.

### Discussion

In evaluating the theoretical model proposed in the second chapter, there were two significant points to be made. The first had to do with the operationalization of the theory as presented in this study in accounting for the attitude and behavior in question. The second point involved the extent to which the hypothesized relationships held up.

The theory indicated that structural factors would exert an indirect influence on attitude mediated through significant other influence and self-reflexive activity. The lack of a significant relation of all structural factors except one, mother's occupation, to significant other influence may not indicate a theoretical breakdown. The results indicated that the structural factors, or the combination of factors, in this particular study were not predictive. However, the selection of other structural variables or another combination of variables might provide predictive measures.

The structural factor which had a significant relationship to significant other influence was mother's occupation. This finding could lend support to the inclusion of mother's occupation and education when representing SES rather than solely based upon the father's

Table 15. Number and percent of subjects from each service area of vocational education (IEd, AEd, BEd, HEd) selecting the handicapped learners for the class (n = 63).

Behavior	Vocational Education Service Area									
	IEd		AEd		BEd		HEd		Total	
	N	%	N	%	N	%	N	%	N	%
Did not select handicapped learner	12	19	5	7.9	0	0	1	1.6	18	28.6
Selected handicapped learner	5	7.9	13	20.6	22	34.9	5	7.9	45	71.4
Total	17	27.0	18	28.6	22	34.9	6	9.5	63	100

$$\chi^2 = 23.92, \text{ ndf, } 3, p < .05$$

Table 16. Number and percent of male and female subjects selecting the handicapped learner for class (n = 63).

Behavior	Male		Female		Total	
	N	%	N	%	N	%
Did not select handicapped learner	17	47.2	1	3.7	18	28.6
Selected handicapped learner	19	52.8	26	96.3	45	71.4
Total	36	100	27	100	63	100

$$\chi^2 = 12.265, \text{ ndf, } 1, p < .05$$



education and occupation.

An examination of the path coefficients explained further the extent to which the operationalization of the theory accounted for the prediction of attitudes. They added considerable evidence that the modes of influence hypothesized by the theory exerted strong causal influence over the formation of attitudes. The strongest path in the model was from significant other influence to attitude. The fact that this value was significantly higher than any other value demonstrated the importance of the influence of others on attitude formation. It was hypothesized that the predictive power of significant other influence on behavior would be indirect, mediated through attitudes. As there was a lack of a significant relationship between attitude and behavior, the indirect effect of significant other influence on behavior was not significant. The lack of a relationship between attitude and behavior was further indicated by the relationship which existed between the structural variable of sex of the subject and service area of vocational education of the subject and behavior and did not exist between those two structural variables and attitude.

The prediction of attitude did follow the theoretical model fairly well except for a few exceptions. Those exceptions were the variables self-reflexive activity and other related attitudes. Other researchers (Mettlin, 1970; Saltiel, 1972) who have evaluated this theory have used certain structural factors to represent self-reflexive activity. The type of measurement was appropriate for their studies because the structural factor they used (SES), as measured by mother's and father's occupation and education, was theoretically linked to how a person

thinks about occupational and educational aspirations. This approach did not seem to be appropriate to this study so the attempt was made to measure this variable directly.

Concerning other related attitudes, it seemed reasonable to pose the following question: If the relationship between significant other influence and attitude was significant, then why was not the relationship between significant other influence and other related attitudes also significant? In other words, if significant others influence one's attitude, why not other closely related attitudes? Upon closer examination of the results of those variables influencing other related attitudes, it was demonstrated that although the relationship was not significant the variable accounting for the greatest amount of variance was significant other influence. This was consistent with the theory. While the measurement of a specific attitude did not, in this case, predict behavior, the measurement of a cluster of related attitudes did have predictive value for attitude toward a specific object and for behavior toward that object.

The results of the multiple regressions used to substantiate the causal model suggested that the present operationalization of the model was not substantially accounting for the formation of attitude or of the resulting behavior. However, this did not necessarily imply a theoretical error. As was pointed out in the first chapter, the reliability of a measure of attitude to predict behavior has long been debatable. It should also be pointed out that Woelfel and Haller's theory (1971) and Mettlin's study (1970) did not include the prediction of behavior in the theoretical model. In other words, there was less

theoretical support for the inclusion of the prediction of behavior in this model. Of interest was the significant relationship between significant other influence and behavior. This tended to support the notion that significant persons may influence a person's behavior in a certain manner regardless of how they may also influence that person's attitude. These results also tended to support Blumer's (1955) criticism of the concept of attitude as a means of analyzing human conduct in which he criticized the notion that attitude as a tendency to act accounts for the type of actions which follow.

The lack of a path from attitude to behavior detracted somewhat from the importance of significant others on attitudes because teacher educators should be more concerned with behavior than attitudes. This tended to focus attention on the path from significant other influence directly to behavior. The residual coefficient for significant other influence (.892) indicated that 89 percent of the significant other influence on behavior, measured in terms of reducing the standard deviation in behavior, was through factors not accounted for in the model. The structural factors accounted for in this model accounted for only 11 percent of the significant other influence upon behavior. As a result, 89 percent of the variance not accounted for might have included other means by which behavior might have been effected through significant other influence than was accomplished by the specific panel presentation used in this study.

The portions of the study which attempted to change attitude and behavior on the part of vocational teacher trainees toward handicapped learners had no significant effect. However, the significance level

for an attitudinal change was low enough to indicate the possibility of some effect. The mean score on the attitude measure indicated that the subjects' attitudes were already quite positive at the time of measurement. This did not allow for as much room for change as may be possible with other subjects. The significance level for a behavioral change was in no way indicative of any effect. The lack of effect on behavior, in particular, in this study might have been due to the type of intervention process selected. These results may indicate that for handicapped persons to be selected as significant others who would influence attitude or behavior, repeated contact with handicapped individuals over a longer period of time may be necessary.

## V. CONCLUSIONS AND RECOMMENDATIONS

### Summary

The purpose of this research was twofold. The first was to provide further data pertinent to the Woelfel and Haller (1971) theory of attitude formation. The second purpose was to determine if an intervention process into the significant other influence variable or the model would be a significant attempt to change attitudes and behavior of vocational teacher trainees toward handicapped learners.

The intent of this chapter is to consider briefly some of the major implications of these findings in relation to the theory. In addition, recommendations for further study will be suggested.

While the results of this study did not completely support the proposed theoretical model, the data did lend empirical support for certain paths contained in the model. In addition, where the results lacked empirical support of the model, they did tend to lend theoretical support to the model.

Strong empirical support was evident for the relationship between significant other influence and attitude. As the strongest relationship in the analysis, it provided support to the theoretical inclusion of significant other influence in the model. Not only did the evidence support the inclusion of significant other influence, it additionally supported its inclusion as the most important predictor of attitude in the model.

Significant other influence also tended to predict other related attitudes which in turn tended to predict behavior. This appeared to

occur even though a direct link between attitude and behavior was not supported.

The lack of a relationship between attitude and behavior was not inconsistent with much previous research. It would appear that the link between attitude and behavior should not have been included as part of the model. This was consistent with the theory as presented by Woelfel and Haller (1971). As indicated previously, the link between attitude as measured by the use of an attitudinal scale and behavior has not been well established.

The other link in the model which did not empirically hold was the effect of self-reflexive activity in the model. As stated previously, there were adequate reasons for the lack of empirical support for this particular variable. The results of the data concerning self-reflexive activity from this study were not conclusive enough to seriously challenge the theoretical reasons for its inclusion in the model.

Structural factors did appear to have some empirical support in this study even though not completely as projected by the literature. Again, because of the possibility of measurement errors, the theoretical links of structural factors to significant other influence and self-reflexive activity should not be abandoned.

The process of intervention into the significant other influence variable in order to produce a positive change in both attitude and behavior of vocational teacher trainees toward handicapped learners did not prove to be effective. As previously discussed, the fact that this one particular method of interpretation did not produce significant results should not indicate that other interventions might not produce significant change.

### Conclusions

As a result of this study, three major conclusions were drawn. First, Woelfel and Haller's theory of attitude formation can serve as an adequate model for predicting the attitudes of vocational teacher trainees toward handicapped learners. While the theory did not hold empirically for all variables and paths, it did appear to lend theoretical support to the model even where empirical support was not statistically significant.

Second, significant others influenced the formation of attitudes held by vocational teacher trainees toward handicapped learners. In addition, significant others influenced the behavior of vocational teacher trainees toward handicapped learners, although not to the extent that they influenced attitudes.

Third, the intervention used, that is, a panel of handicapped persons, did not affect the behaviors or attitudes of the vocational teacher trainees.

### Recommendations for Further Study

It appears evident from the results of the study that the variable self-reflexive activity needs further exploration. One possibility is that the design of a more adequate measure could resolve the problems with this variable. It is recommended that this variable be measured directly by more items than the two item measure utilized in this study.

Significant other influence was shown through path analysis to have a direct link to behavior. This occurred even though the particular intervention which, in this study, attempted to produce a

significant change in the subject's behavior failed. It would seem reasonable to assume that because significant others have been shown to influence behavior, some other way of helping persons define handicapped persons as significant others has the potential of creating a positive change in the behavior toward handicapped individuals.

As stated previously, teacher educators should be more concerned about behavior than with attitudes. This appears to be supported by the lack of direct linkage between attitude and behavior. It is, therefore, important to be concerned with procedures which will affect behavioral change more than with procedures which affect attitudinal change. It is interesting to note that this study indicates that procedures which produce significant others influence have the potential of changing not only attitude but also behavior. Additional study may be able to determine that in order for a behavioral change to occur, more exposure over a longer period of time with more than one measure of behavior may be necessary. It is recommended that teacher educators examine alternative intervention processes which would allow for increased contacts with handicapped persons over a period of time in combination with other strategies.

Of additional interest concerning behavior is the fact that the sex of a person tends to influence the behavior of that person but not the attitude. Further study into this question might provide some interesting insights. Is it possible that sex stereotyping of appropriate behaviors could be a factor here?

The structural variables in this study concerning socioeconomic status indicated that both mother's occupation and education tended to



have more influence than father's occupation and education. The literature supported the idea that females are more accepting of the handicapped than are males. While this did not show directly on attitude it may have been indicated by the results on behavior. In addition, it may be possible that greater acceptance of females may be indicated through the influence of the mother. Further study in this area might also prove insightful.

If indeed mothers are shown to be more influential than previously assumed, there may be indications that some method, more appropriate to the changes taking place in society concerning women's roles, be developed to measure the occupational prestige of women.

While additional research appears necessary to help clarify and explain certain variables in the theory, Woelfel and Haller's (1971) theory of attitude formation did seem to help clarify the attitude formation process particularly in respect to the influence of significant others.

It also seemed apparent from this research that a better understanding of attitude does not increase the probability of accurately predicting behavior. No advance in the attempt to predict behavior from attitudes has been made as a result of this study. The attitude behavior linkage problem remains a difficult and interesting area of study.

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## APPENDICES

## APPENDIX A

## ITEMS USED IN ANALYSIS

7. Parents of handicapped children should be less strict than other parents.
- 8.
- 9.
- 10.
11. Handicapped persons are just as intelligent as non-handicapped ones.
- 12.
- 13.
14. Handicapped people are usually harder to get along with than other people.
- 15.
16. Most handicapped people feel sorry for themselves.
- 17.
18. Handicapped people are the same as everyone else.
- 19.
- 20.
21. There should not be special schools for handicapped persons.
- 22.
- 23.
- 24.
25. It is up to the government to take care of handicapped persons.
- 26.
27. Most handicapped people worry a great deal.
- 28.
29. Handicapped people should not be expected to meet the same standards as non-handicapped.
- 30.
- 31.
32. Handicapped people are as happy as non-handicapped ones.
- 33.
- 34.
35. Severely handicapped people are no harder to get along with than those with minor handicaps.
- 36.
37. It is almost impossible for a handicapped person to lead a normal life.
- 38.
39. You should not expect too much from handicapped people.
- 40.
- 41.
- 42.
43. Handicapped people tend to keep to themselves much of the time.
- 44.
- 45.
46. Handicapped people are more easily upset than non-handicapped people.
- 47.

48. Handicapped persons cannot have a normal social life.
- 49.
- 50.
51. Most handicapped people feel that they are not as good as other people.
- 52.
- 53.
54. You have to be careful of what you say when you are with handicapped people.
- 55.
56. Handicapped people are often grouchy.
- 57.
58. When you observe a blind person getting ready to cross the street you are likely to ask that person if he/she needs assistance.
- 59.
- 60.
- 61.
62. When you observe a handicapped person as a classmate you are likely to not mind if you sit next to that individual.
- 63.
64. I have never been associated with handicapped persons.

The attitudes and behavior which each of the following persons expect you to hold toward the handicapped are very positive.

67. Your parents
68. Your relatives
69. Your friends
70. Your acquaintances
71. Your teachers
72. Handicapped persons
- 73.
- 74.
- 75.
- 76.
- 77.
- 78.
- 79.
- 80.
- 81
- 82.
- 83.
- 84.
- 85.
- 86.
- 87.
- 88.
- 89.
- 90.

A person or persons may serve as an example to you. The following persons serve as positive examples to you concerning your feelings toward handicapped persons.

91. Your parents
92. Your relatives
93. Your friends
94. Your acquaintances
95. Your teachers
96. Handicapped persons
- 97.
- 98.
- 99.
- 100.
- 101.
- 102.

Generally speaking your attitude toward the following groups is that they probably will not succeed in our society without difficulty.

103. Blacks
104. Chicanos
105. American Indians
106. Persons of the non-traditional sex in your field
107. Handicapped
108. Japanese Americans
109. Swedish Americans

## APPENDIX B

Thank you very much for volunteering to participate in this research. Your participation is of great benefit to me and hopefully to teacher education. It is my hope that this experience will also prove to be of benefit to you.

WHEN RESPONDING TO THE STATEMENTS IN THE QUESTIONNAIRE, IT IS VERY IMPORTANT THAT YOU RESPOND AS YOU REALLY FEEL, NOT AS YOU MAY ASSUME THAT I, YOUR INSTRUCTORS, OR ANYONE ELSE, WANT YOU TO RESPOND. PLEASE REMEMBER THAT YOUR RESPONSES AND YOUR NAME WILL NOT BE ASSOCIATED. NO ONE WILL KNOW HOW YOU RESPOND.

Again, thank you.

FOR THE FOLLOWING STATEMENTS PLEASE RESPOND BY MAKING A CHECK IN FRONT OF THE MOST APPROPRIATE STATEMENT OR BY WRITING THE CORRECT RESPONSE.

1. Your sex is: \_\_\_\_\_ male, \_\_\_\_\_ female.
2. Your father's occupation is (or was, if deceased or retired): Specify the kind of work he does and not where he works.

---

3. Your mother's occupation is (or was, if deceased or retired): Specify the kind of work she does and not where she works.

---

4. How far did your father and mother go in school? (check one for each)

	Father	Mother
8 grades or less	_____	_____
9-11 grades	_____	_____
12 grades	_____	_____
Some college	_____	_____
College degree	_____	_____
An advanced degree (Master's, Ph.D. or professional such as law or medicine)	_____	_____

5. Your area of residence during high school is best described as:
 

_____ a farm	_____ in a town of 2,500-10,000
_____ open country, but not a farm	_____ in a city over 10,000
_____ in a village under 2,500	
6. In which vocational area are you currently enrolled?
 

_____ agriculture education	_____ business or distributive education
_____ industrial education	_____ home economics education

THE FOLLOWING ARE ATTITUDE STATEMENTS. PLEASE USE THE FOLLOWING SCALE AND MAKE A CHECK (✓) TO RATE EACH STATEMENT TO THE EXTENT WHICH YOU AGREE OR DISAGREE WITH THE ITEM.

+3 I agree strongly	-1 I disagree slightly
+2 I agree moderately	-2 I disagree moderately
+1 I agree slightly	-3 I disagree strongly

+3 +2 +1 -1 -2 -3

Example: It rains a lot in Oregon during the winter.

+3	I agree strongly	-1	I disagree slightly
+2	I agree moderately	-2	I disagree moderately
+1	I agree slightly	-3	I disagree strongly

---

+3 +2 +1 -1 -2 -3

7. Parents of handicapped children should be less strict than other parents.
8. It would be best for handicapped persons to live and work in special communities.
9. Most blacks feel sorry for themselves.
10. Persons of limited English speaking ability are no harder to get along with than those who speak English fluently.
11. Handicapped persons are just as intelligent as non-handicapped ones.
12. You can expect a lot from Japanese-Americans.
13. American Indians are often grouchy.
14. Handicapped people are usually harder to get along with than other people.
15. American Indians cannot have a normal social life.
16. Most handicapped people feel sorry for themselves.
17. Most racially different people should not be expected to meet the same standards as whites.
18. Handicapped people are the same as everyone else.
19. Japanese-Americans are less easily upset than Caucasians.
20. Chicanos are the same as everyone else.
21. There should not be special schools for handicapped persons.
22. Parents of black children show little concern for their children.
23. You have to be careful of what you say when you are with black persons.
24. Women in non-traditional jobs should not be expected to meet the same standards as men.
25. It is up to the government to take care of handicapped persons.
26. It is very difficult for an American Indian to live a normal life in our society.
27. Most handicapped people worry a great deal.
28. Chicanos tend to keep to themselves much of the time.
29. Handicapped people should not be expected to meet the same standards as non-handicapped.
30. Girls in agriculture and boys in home ec. are there because they want attention.

- |    |                    |    |                       |
|----|--------------------|----|-----------------------|
| +3 | I agree strongly   | -1 | I disagree slightly   |
| +2 | I agree moderately | -2 | I disagree moderately |
| +1 | I agree slightly   | -3 | I disagree strongly   |

---

+3 +2 +1 -1 -2 -3

31. It would be best if women remained in home economics and men remained in agriculture.
32. Handicapped people are as happy as non-handicapped people.
33. It is up to the government to take care of the American Indians.
34. Most women worry a great deal.
35. Severely handicapped people are no harder to get along with than those with minor handicaps.
36. Most American Indians feel that they are not as good as other people.
37. It is almost impossible for a handicapped person to lead a normal life.
38. You should not expect too much from American Indians.
39. You should not expect too much from handicapped people.
40. Blacks are usually easier to get along with than other people.
41. Blacks tend to keep to themselves much of the time.
42. There should be special schools for blacks.
43. Handicapped people tend to keep to themselves much of the time.
44. Japanese-Americans are usually easier to get along with than other people.
45. Parents expect more from sons than from daughters.
46. Handicapped people are more easily upset than non-handicapped people.
47. You have to be careful of what you say when you are with the non-traditional sex in your field.
48. Handicapped persons cannot have a normal social life.
49. Minority persons are as happy as Caucasians.
50. Chicanos are more easily upset than Caucasians.
51. Most handicapped people feel that they are not as good as other people.
52. Black persons are just as intelligent as Caucasian persons.
53. Chicanos are seldom grouchy.
54. You have to be careful of what you say when you are with handicapped people.
55. Most blacks feel that they are not as good as other people.









## APPENDIX C

## INSTRUCTIONS:

You are to assume that you are teaching a laboratory class in your subject area. In Home Economics the class is a sewing lab, in Agricultural Education the lab is a welding unit in agricultural mechanics, in Industrial Education the class is a welding lab, and in Business the class is a typing lab. There are currently twenty students in your class. Your class consists of students involving a normal range of abilities. Five of the students are in a college preparatory curriculum and are taking your class due to interest. Ten of your students are interested in being employed in this field upon graduation on an exploratory basis as they have not yet made any career decisions. Of the twenty students in the class two are Chicano, one is American Indian and one is black. Five of the students are of the non-traditional sex role for your field.

These twenty students utilize all of the lab stations in the room. The classroom is of adequate size to allow for the inclusion of two more lab stations. Equipment has been purchased to equip these two lab stations. Three students are requesting admittance to the class. As the teacher, you are asked to select the two students you will admit.

Please respond by placing a check (✓) in front of the names of the two students you select.

\_\_\_\_\_ Dwight Herderg  
 \_\_\_\_\_ Billy Nantz  
 \_\_\_\_\_ Donald Chappell

Name HERDERG, Dwight Dean Male  Birthdate November 17  
 Female

Address 1631 Chestnut Birthplace Glen Oaks, Buchanan

Telephone 485-2187 Expected Graduation Date June Nationality \_\_\_\_\_

Mother's Name HERDERG, Cynthia Lois Father's Name HERDERG, Victor Wayne

Health Record Dwight is blind with excellent mobility skills

Competencies (recorded in percentiles comparing students in this school)

Reading Comprehension	75 percentile
Computation	78 percentile
Communication	81 percentile
Manual Dexterity	77 percentile

Name NANTZ, Billy Albert Male  Birthdate July 2  
 Female   
 Address 1888 Sycamore Birthplace Glen Oaks, Buchannan  
 Telephone 481-2398 Expected Graduation Date June Nationality \_\_\_\_\_  
 Mother's Name NANTZ, Rose Ellen Father's Name NANTZ, Chester Raymond  
 Health Record \_\_\_\_\_

Competencies (recorded in percentiles comparing students in this school)

Reading Comprehension	65 percentile
Computation	62 percentile
Communication	69 percentile
Manual Dexterity	65 percentile

Name CHAPPELL, Donald Male  Birthdate February 28  
 Female   
 Address 2442 Peachtree Drive Birthplace Bismarck, North Dakota  
 Telephone 484-4700 Expected Graduation Date June Nationality \_\_\_\_\_  
 Mother's Name PENNINGTON, Susan Father's Name PENNINGTON, Howard Anthony  
 Health Record \_\_\_\_\_

Competencies (recorded in percentiles comparing students in this school)

Reading Comprehension	85 percentile
Computation	87 percentile
Communication	90 percentile
Manual Dexterity	85 percentile

## APPENDIX D

## CODING KEY

Variable Number	Name	Question Number	Description	Column
	Id. No.		01-93	1-2
	Group No.		Solomon Four Group	3
6	Sex	1	1 = Male 2 = Female	4
6	SES-Occ father	2	Transform Occ to Duncan NORC score	5-6
6	SES-Occ mother	3	Transform Occ to Duncan NORC score	7-8
6	SES-Ed father	4	1 = 8 grades or less 2 = 9-11 grades 3 = 12 grades 4 = some college 5 = college degree 6 = advanced degree	9
6	SES-Ed mother	4	Same as for father	10
6	Area of residence	5	1 = farm 2 = open country 3 = under 2,500 4 = 2,500-10,000 5 = over 10,000	11
6	Area of Voc. Ed.	6	1 = IEd 2 = AEd 3 = BEd 4 = HEd	12
2	Attitude	7	6 = most positive	13
		8	5	14
		11	4	15
		14	3	16
		16	2	17
		18	1 = least positive	18
		21		19
		25		20
		27		21
		29		22
		32		23
		35		24
		37		25
		39		26
		43		27
		46		28

## Appendix D. Coding Key (Cont.)

Variable Number	Name	Question Number	Description	Column
		48		29
		51		30
		54		31
		56		32
4	Self-reflexive Activity	58	Same as Attitude	33
		62		34
6	Previous Association	64	Same as Attitude	35
5	Significant Other Influence (Definer)	67	Same as Attitude	36
		68		37
		69		38
		70		39
		71		40
		72		41
5	Significant Other Influence (Model)	91	Same as Attitude	42
		92		43
		93		44
		94		45
		95		46
		96		47
3	Other Related Attitudes	103	Same as Attitude	48
		104		49
		105		50
		106		51
		107		52
		108		53
		109		54
1	Behavior	Appendix C	1 = discrimination 2 = correct 3 = error	55
			1 = pre-test 2 = post-test	56
			1 = control 2 = experimental	57