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Doerman, Patricia Alloy

ATTITUDES OF HIGH SCHOOL VOCATIONAL STUDENTS TOWARD OLDER ADULTS

The Ohio State University

Ph.D. 1982

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ATTITUDES OF HIGH SCHOOL VOCATIONAL STUDENTS TOWARD OLDER ADULTS

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

By
Patricia Alloy Doerman, B.S., B.S., M.E.

The Ohio State University
1982

Reading Committee:
Dewey A. Adams
James J. Buffer
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Approved by
Dewey A. Adams
Adviser
College of Education
To my grandfather, George W. Knipp --

A pioneer educator in a one-room school house
ACKNOWLEDGMENTS

The book of Ecclesiastes, Chapter 3, Verse 1 reads, "To every thing there is a season, and a time to every purpose under the heaven". The writer is indebted to so many for helping her attain her purpose through this season and time.

I am deeply grateful to my family for their sustaining support, particularly at stressful times when everything seemed so difficult. Mom, Alan and Heather--thank you.

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Finally, I thank God who has given me the intelligence, strength and fortitude to pass through this season and time.
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Gerontology. Dr. Loretta C. Buffer

Home Economics. Dr. Joan E. Gritzmacher
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15. Mean Score Difference, Knowledge About Older Adults by Pre and Post Facts on Aging Scores and Class 157
A quality life with inherent dignity is the right of every citizen in a democracy. Today, in the United States that quality life with dignity of both the young and old is being threatened. Adolescents (youth, age 16-19 years), especially the disadvantaged adolescents (minorities and handicapped) who comprise about 38 percent of the adolescents in the United States are not receiving adequate education, particularly with regard to job preparation (Carnegie Council, 1979). Simultaneously the number of older adults in the United States has rapidly increased, from three million in 1900 (Molina, 1977) to over 25 million today (U.S. Bureau of Census, 1980). There are estimations of 30 million by 1985 and 55 million by the year 2030 (U.S. Department of Health, Education and Welfare, 1978). This rapid growth magnifies the need for programs and services for older adults in health care, mental health, food and nutrition, consumerism, legal concerns, personal counseling and activities which maintain and stimulate body functioning (National Council on the Aging, 1975). If the needs of these people are not met, then both young and old will lack dignity and self respect. Without personal dignity and self
respect, people cannot be productive members in society and all the people in that society suffer. How can both of these needs be fulfilled while simultaneously maximizing the use of available educational resources?

One logical approach might be to utilize adolescent workers to provide services for older adults. This approach would prepare youth for jobs while simultaneously providing needed services for older adults. This approach depends heavily upon the level of success of adolescent workers with older adults. Possibly, the variable which is most clearly associated with work success is the attitude of adolescents toward older adults. Auerbach and Levenson (1977) felt that the delivery group must possess positive attitudes toward older adults, if they are to provide quality services.

There is evidence from research of both positive and negative attitudes among all age groups (children, adolescents, adults, and older adults) toward older adults (Bennett & Eckman, 1973; McTavish, 1971). Most previous research dealt with young adults' (mostly college students) attitudes toward older adults (e.g., Fitzgerald & Joseph, 1978; Tuckman & Lorge, 1953; Kogan, 1961; Golde & Kogan, 1959; and the National Council on the Aging, 1977). Some research was done with children (e.g., Click & Powell; 1976; Jantz, 1976; Powell & Lamson, 1979; and Higgins, 1977). Some research was carried out with older adults (e.g., Brubaker; 1976; The National Council on Aging, 1977; and Signori & Kozar, 1977). However, the research
dealing with adolescents' attitudes toward older adults was not only contradictory but limited to a small number of studies with no research about a comprehensive gerontology job training program and the disadvantaged adolescent.

Statement of the Problem

This research, therefore, will be focused upon attitudes which disadvantaged adolescents hold toward older adults and certain variables which relate to these attitudes. Specifically, answers to the following questions will be sought: 1) To what extent do disadvantaged adolescents hold negative attitudes toward and low levels of knowledge about older adults? 2) To what extent can disadvantaged adolescents' attitudes toward older adults and knowledge about older adults be changed as a result of an educational intervention (gerontology job training program; "Queen City Program")? 3) To what extent do disadvantaged adolescents hold negative behavioral intentions toward older adults? 4) What relationships exist between disadvantaged adolescents' attitudes toward older adults and knowledge, behavioral intentions, and selected other personal and demographic variables? 5) How important are the relationships of knowledge, behavioral intention and selected other personal and demographic variables to attitudes toward older adults?
Significance of the Study

Attitudes toward older adults affect the identity (self-concept) of adolescents, older adults and society. Hickey and Kalish (1968) and Kastenbaum and Durkee (1964) felt that the attitudes which adolescents hold toward older adults not only affect how they interact with older adults now, but give indications as to how they will interact with older adults when they become older adults themselves. Furthermore, Ivester and King (1977) felt that, as adolescents age and become older adults, their self-concept will be affected by the attitudes they hold toward older adults now.

A positive change in attitudes toward older adults has also been identified as important to the identity of older adults. Thorson (1974) stated that the identity of older adults is being threatened and change is needed. Negative attitudes, limited freedoms and opportunities, plus forced dependency have contributed to the formation of negative self-images in older adults. These negative self-images help to perpetuate the self-fulfilling prophecy that if one thinks of "being old as bad, then being old is bad."

The identity of the society in the United States is influenced by attitudes held toward older adults. Kosberg and Harris (1978) felt that the ideals and values with which society identifies, emphasize attractiveness, productivity, youth and activity. Older adults are not valued. These beliefs leave older adults without roles and functions.
Negative attitudes and/or ageism prevail. The values of the society in the United States also need positive change.

Knowledge of the attitudes of disadvantaged adolescents toward older adults will not only benefit adolescents, older adults, and society, but will provide information that will be useful in planning training programs in gerontology. Evidence that information is needed for program planning and senior citizen center operation was identified by the investigator during the first year of operation of a gerontology program in Cincinnati (Queen City Program). The investigator observed and felt a need for gaining understanding of the students' attitudes toward the older clients in the senior citizen center. The students were often overly helpful and encouraged "aged dependency" (students providing circumstances which require older adults to rely on them). The students often over simplified activities and directions for the older adults as if they were children who didn't learn easily. Often students would do things for older adults, telling them that they moved too slowly and should not be expected to do a particular task. The students were amazed that older adults loved to dance and astounded when older adults became their teachers. If these students were to be trained to provide quality services and programs for older adults, an inquiry into students' attitudes toward older adults was recommended.
In addition to assisting in the development of gerontology and senior citizen center programs, the information gained about attitudes of disadvantaged adolescents toward older adults will provide employers and teaching staffs with qualitative data for screening prospective employees' and students' attitudes toward older adults. Kosberg and Harris (1978) stated that screening the attitudes toward older adults of new employees who plan to provide older adult services is very important in acquiring quality personnel.

Finally, the knowledge gained in relation to attitudes of disadvantaged adolescents toward older adults will clarify previous research findings, explore new factor relationships and expand current data on attitudes toward older adults. Clarification of research is needed as to whether the attitudes toward older adults are negative or positive and to what extent relationships exist between these attitudes and such factors as age, sex, geographical background, socio-economic status, knowledge and the amount of contact or interaction with older adults. Past findings causes Thorson (1974) to suggest that future studies in attitudes toward older adults isolate such factors as age, income and education (years of education).

Two relatively new factors with reference to disadvantaged adolescents' attitudes toward older adults need exploration. First, knowledge one has about older adults
has received little research exploration. Palmore (1977) and Kilty (1976) encouraged such studies. They felt that stereotypes of old must be contrasted with what one knows about older adults. Secondly, student achievement level needs exploration. Thorson (1975b) suggested that future research include a look at the correlates of attitudes toward older adults and intelligence, because people with more ability to learn might reject untrue stereotypes of older adults.

Foremost in the expansion of current data in this area is an issue in the social-psychological study of attitudes. This issue concerns the extent to which verbal expression of attitudes relate to congruent behavior (Kogan, 1979). If attitudes are shown through behavior then studies must be developed that show the relationship between verbal expression and overt actions or behavior (Kiesler, Collins & Miller, 1979). Fishbein and Ajzen (1975) felt that the knowledge of an individual's attitude permits prediction of that individual's behavioral intentions when both attitudes and behavior are measured at the same level of generality.

**Objectives of the Study**

Based upon the need for clarification of previous research findings, exploration of new factor relationships, and expansion of current data in the area of disadvantaged adolescent attitudes toward older adults, nine objectives have been formulated to guide this investigation:
1. Identify the polarity of attitudes that high school juniors and seniors hold toward older adults and the amount of change that occurs in these attitudes during one school year.

2. Determine the effect of a gerontology program upon high school juniors' and seniors' attitudes toward older adults.

3. Identify the level of knowledge that high school juniors and seniors hold about older adults and the amount of change that occurs in this level of knowledge during one school year.

4. Determine the effect of a gerontology program upon high school juniors' and seniors' level of knowledge about older adults.

5. Define the relationship of the attitudes of high school juniors and seniors toward older adults and their level of knowledge about older adults.

6. Identify the level of behavioral intention that gerontology juniors and seniors hold toward older adults.

7. Define the relationship of the attitudes of gerontology juniors and seniors toward older adults and their behavioral intentions toward older adults.

8. Identify the relationship of attitudes toward older adults of high school juniors and seniors and their: 1) socio-economic status; 2) achievement level; 3) contact with older adults (grandparent in home, activities with grandparents or other older adults, care for sick older person, liking older adults, amount of time spent, number with whom associated, and frequency of contact).

9. Identify the importance of relationship of attitudes toward older adults of high school juniors and seniors and their: 1) socio-economic status; 2) achievement level; 3) contact with older adults (grandparent in home, activities with grandparents or other older adults, care for sick older person, liking older adults, amount of time spent, number with whom associated, and frequency of contact).
Limitations of the Study

There were three limitations in this study. The first limitation relates to several assumptions which must be understood; the second to the nature of the evaluation instruments; and the third to the scope of the study.

It is assumed that determination of a person's beliefs about an object (older adults) provides a reasonably valid indication of the person's attitude toward that object; Questionnaire measures of behavioral intentions are considered to be reasonably valid measures of actual, overt behavior; beliefs, attitudes and behavioral intentions can be measures; knowledge of an individual's attitude permits prediction of that individual's behavior or behavioral intentions when both attitudes and behavior are measured at similar levels of generality; specifically, the attitudes and behaviors of similar students, at the same time, with the same object (older adults), and concerned with the same action will be highly correlated.

The evaluation instruments were selected because, in the judgment of the researcher, they were the best available tools with which to measure attitudes and behavioral intentions toward older adults and knowledge about older adults. However, certain limitations have been expressed in the literature. Silverman (1966) felt that Kogan's (1961) "Attitudes Toward Old People Scale" has response-set bias. Palmore's "Fact's on Aging" (1977) was relatively new and further experimentation was encouraged by the author.
"Behavioral Intentions in Relation to the Elderly" (Robb, 1979) was developed to measure the behavioral intentions of nursing students toward older adults. To be useful in this study, this instrument has to be modified to measure the behavioral intentions of high school juniors and seniors in a vocational gerontology program toward older adults.

The scope of this study was limited to a study of attitude changes during one school year. The study population was limited to 85 juniors and seniors at Queen City Vocational Center and Taft High School in Cincinnati, Ohio. Generalizations from this study may only apply to circumstances with similar type students, schools and cities.

Definitions of Terms

The following terms were defined specifically for use in this study.

1. An attitude is any belief that has an emotional and behavioral component. The amount of affect for or against some object is measured on a bipolar (positive-negative) in regard to a specific target object. Attitudes are learned.

2. Negative attitudes are feelings and beliefs that are derogatory toward an object. Negative attitudes toward older adults are also called prejudices, ageism, negative stereotypes and myths.

3. Older Adults refers to people over age 65. Older adults are also known as the old, old people, elderly, aged and senior citizens.
4. **Adolescents** are young people or youth between the ages of 16 and 19.

5. **Minority youth** are black and hispanic adolescents between the ages of 16 and 19.

6. **Disadvantaged adolescents** are youth between the ages of 16 and 19 who are poor economically and academically as classified by participation in subsidized lunch programs, Comprehensive Employment Training Act (CETA) participants, achievement test scores and ratings by teachers and counselors.

7. **Coop** means that students work three hours daily on a job related to their vocational program.

8. **Related class** is where the vocational students read, write and discuss gerontology, geriatrics, laboratory and work.

9. The **laboratory** is the senior center in the school. In this laboratory, the junior students use related class materials with older adults.

10. **Gerontology** is the scientific study of the process of aging: biologically, psychologically (behavioral) and sociological perspectives.

11. **Geriatrics** is the study of the care of older adults with biological and psychological disabilities.

12. **Behavioral intention** is the predisposition to perform a certain overt act; a conation of inclination to act purposfully, measured by a procedure which measures the subjective probability of a relation between the
subject and some intended action(s).

Chapter Summary and Overview of Dissertation

The researcher defines the problems of older adults and disadvantaged adolescents and proposes a solution for both problems situations. For the solution to be effective, disadvantaged adolescents' attitudes toward older adults have to be changed. Thus, the main purpose in this study is to see if disadvantaged adolescents' attitudes toward older adults can be changed from participation for one school year in a gerontology program which consists of study about older adults and interaction with older adults.

Furthermore, the researcher speculates as to how the data gained from this study will benefit disadvantaged adolescents, older adults, society, gerontology training programs, senior citizen centers' programs, employers, teaching staffs, and researchers in gerontology, psychology and education. The self-images of disadvantaged adolescents, older adults and society will become more positive toward themselves/itself and the aging process. Data will be generated from the study to improve gerontology and senior citizen programs; screen prospective gerontology students and geriatric employees, and clarify and substantiate old and new research questions in relation to aging.

Objectives are presented. Several objectives explore the effect of a gerontology program upon the level of knowledge about older adults and the attitudes toward
older adults of disadvantaged junior and senior high school students. Other objectives search for the relationship of attitudes toward older adults and level of knowledge, behavioral intention, socioeconomic status, achievement level and contact with older adults.

Three limitations of the study are stated. The limitations are concerned with measurement of behavioral intentions, validity and reliability of the three instruments and scope of the study.

Finally, the researcher lists some important terms which are used in the study. Each term is defined generally for the field of education and specifically as it relates to the study.

The remainder of the dissertation includes four chapters. Chapter II compiles a review of related literature. Methods and procedures are discussed in Chapter III. Results of the study are revealed and depicted in Chapter IV. The final Chapter V, includes the conclusions, implications and recommendations from the study.
CHAPTER II

REVIEW OF RELATED LITERATURE

The conceptual model, the review of literature and research hypotheses are presented in this chapter. The conceptual model offers the theoretical basis for the research and framework for reviewing the literature about high school vocational students' attitudes toward older adults. Hypotheses to be tested were derived from a summary of the literature.

Conceptual Model

Open-system theory provided the conceptual framework around which this study was built (Katz & Kahn, 1966). Katz and Kahn viewed open-system theory as an approach and a conceptual language for understanding and describing many types and levels of phenomena in organizations or groups. This approach to group functioning represents the adaptation of work in biology and in the physical sciences. It can be used to describe and explain the behavior of living organisms and is applicable to any patterned sequence of events.

The open-system approach theorizes that a given organization or group consists of a pattern of activities of a number of individuals who are in constant interaction with their environment. All such systems involve the flow of energy from the environment through the system itself and
back into the environment. They involve not only a flow of energy but a transformation of this energy. The functioning of any open system thus consists of recurrent cycles of input, transformation, output and feedback.

The input into the group is a product of both the pattern of activities of the group members plus the influence of the environment around the group. Transformation of throughput processes occur within the system to alter or change the inputs into a product or an output. The output is then made available to the environment of the group. The environment, in turn, feeds new inputs of energy back to the group. These new inputs serve to reactivate the patterned activities of the group members. Thus the cycle of inputs, throughputs, outputs and feedback is an interrelated set of events which repeat themselves within the system. A schematic representation of the open-system model appears in Figure 1.

Figure 1. Open-system model
The process of changing high school vocational students' attitudes toward older adults in a two-year gerontology program, the "Queen City Program", was viewed by the researcher as conceptually adaptable to the open-system theory. The Queen City Program was the social system around which the open-system model could be built. The attitude and belief determinants of the junior and senior high school gerontology students toward older adults were viewed as the "inputs". The attitudes of the students upon entrance into the Queen City Program were predetermined by prior social and cultural environmental influences. The processes that occurred within the Queen City Program, such as the learning of information about older adults and the interacting between students, teachers, employers and older adults were considered as the "throughputs". The intended "outputs" of the system would be the students' changed attitudes and positive behavioral intentions toward older adults and their increased knowledge about older adults. The output was seen as feeding back into the system as energy to inputs on a day-to-day basis throughout one school year to reinforce the changes that were occurring as a result of the Queen City Program. The output was also being fed to the local environment to influence the many relevant social systems (day care centers, senior citizen centers and nursing homes) with which the students came in contact. Any changes in attitudes, behavioral intentions,
and knowledge that resulted from the Queen City Program would then influence these other systems in a favorable manner as they put new energy into the system. A graphic presentation of this model is shown in Figure 2.

The hypotheses used to guide the study were developed using a select number of attitude determinants as independent variables. The change in attitude and knowledge plus the evaluation of behavioral intentions from involvement in the Queen City Program served as the dependent variables. The following review of literature was compiled to substantiate the selection of independent and dependent variables. The total dissertation and the review of literature follow the format of the conceptual model. The review of literature presents the "Inputs" for this study.

**Inputs**

**Adolescence**

In order to understand why high school students held certain attitudes toward older adults, an inquiry was made into the developmental stage of adolescence. High school students (age 16-19) are in a period of late adolescence or adult adolescence. In terms of mental and physical growth, they are adults; in terms of psychological growth, they are rapidly becoming adults; but in relation to assuming social roles, they are held in adolescence (Mitchell, 1979). Entry into the adult world is difficult and takes time.

The integrating theme during later adolescence is the
I. INPUTS

1. Adolescence
2. Attitudes, Beliefs, Intentions, Behaviors
3. Attitude-Behavior Relationship
4. Changing Attitudes and Behavior
5. Attitudes Toward Older Adults
   a. Historical Background
   b. General attitudes toward older adults
   c. Adolescent attitudes toward older adults
   d. Service providers attitudes toward older adults
6. Variables Related to Attitudes Toward Older Adults
   a. Age
   b. Level of education
   c. Socioeconomic level
   d. Achievement level
   e. Sex
   f. Geographical background
   g. Knowledge
   h. Contact with older adults

II. THROUGHPUTS

1. The Need for Gerontology Programs
2. Content of Gerontology Programs
3. Gerontology Programs and Attitudes
4. The Attitude-Behavior Relationship in Gerontological Research

III. OUTPUTS

1. Changed Attitudes
2. Increased Knowledge
3. Positive Behavioral Intentions

IV. ENVIRONMENT

1. Day Care Centers
2. Senior Citizen Centers
3. Nursing Homes
4. Family
5. Community

V. SOCIAL SYSTEM

Queen City Program

Figure 2 Conceptual Model
formation of a personal identity. This process is possible because older adolescents are capable of abstract thinking. Identity reflects a convergence of a person's past identifications, an appreciation of a person's competencies and talents, and a commitment to a vision of oneself persisting into the future (Newman & Newman, 1979). In support of personal identity, older adolescents sought social relationships with people who shared similar beliefs and feelings. For older adolescents, the peer group has lost its significance as a clique. They prefer a few loyal and empathetic friends (Newman & Newman, 1979).

In later adolescence, new kinds of relationships with elders become possible; psychological apprenticeship, then a more complex relationship of mentorship, the sponsorship and eventually, peership. The older person becomes progressively more real and three-dimensional to the younger one, whose individuality is appreciated, validated and confirmed by the elders (Mitchell, 1979).

Rapid technological and social change have four profound effects upon adolescents (Rice, 1975). First, the past grows increasingly distant from the present, so that the past has less and less influence and hold over the adolescent, and past solutions to life's problems are not necessarily as relevant to the "here and now". Adolescents felt that anything old is outmoded and irrelevant, so it ought not be allowed to exert much influence over today's life.
Second, the future grows more remote, uncertain and unpredictable, so the adolescent feels less secure about tomorrow. Adolescents are pushed into living more in the present than in the future.

Third, the relations between the generations are weakened as the rate of social innovation increases and as the generation gap widens. Different generations have trouble understanding one another and, when they do understand, they often disagree. Disagreement and conflict come about because of the widening of the generation gap.

Fourth, cultural confusion with shifting beliefs, attitudes, values, mores and standards result in stress, conflict and personality disturbances in the lives of adolescents. It becomes hard for adolescents to know how to live and what to believe.

Beyond general knowledge about adolescent development, this investigator was especially concerned with disadvantaged adolescents because they comprised the majority of input in this study. The Carnegie Council (1979) identified 38 percent of all youth, or about nine million persons aged 16 to 21 in the United States to be disadvantaged (socially and economically).

Schooling is a difficult chore for disadvantaged students.
Poverty takes a toll on the human psyche and spirit. It causes one to be fatigued or to feel an extra pain, an extra embarrassment, an extra shame. Many poor children who do not hold outside jobs, and have enough food and sleep at night, cannot face the social portion of school because they are ashamed of what we would call their station in life (Cottle, 1975, p. 339).

Many adolescents have prejudices that are acquired at an early age. Ammons (1950) found evidence of prejudice in children as early as age four. Neugarten (1971) found ageism (prejudice against aging and aged) to exist in children as early as four or five years of age. Disadvantaged adolescents are more apt to hold prejudices than other groups of adolescents because of the circumstances under which they have developed at home and in the community. Social attitudes (including prejudices) are developed in early childhood from parental role models (Garry & Kingsley, 1970). But all too often, the parental role model of disadvantaged youth hold negative attitudes toward groups in the society which are different from their own and these negative attitudes are passed on to the children (Deutch, 1967; Garry & Kingsley, 1970). The children then use these attitudes to evaluate the people around them (Garry & Kingsley, 1970). Adorno (1950) concluded that those who were prejudice against one minority group were prejudice against other minority groups. Prejudice with respect to one group seems to breed prejudice against other groups.
The victims of prejudice are themselves likely to become prejudiced. It is impossible for members of a group that is the target of prejudice to avoid representing those who are prejudiced against them (Jersild, 1963, p. 307).

Prejudice also develops from child rearing practices. People who have had unfortunate childhood experiences showed marked prejudice (Adorno, 1950). Children who were rejected, deprived, overprotected, and exploited held negative attitudes. Dependent, submissive or highly punished children developed higher degrees of prejudice (Jersild, 1963).

Prejudice has been found to relate to self-concept. Many disadvantaged adolescents have negative self-concepts. Jersild (1963) found attitudes toward self and attitudes toward others to be interwoven. People who hate themselves also hate others.

Finally, prejudice has been found to characterize people who concealed hostility and/or were emotionally insecure (Adorno, 1950). Disadvantaged adolescents often have hostility and emotional insecurity.

In conclusion, the junior and senior high school students in the Queen City Program may have entered into the social system with predetermined attitudes and beliefs toward older adults. These predetermined attitudes and beliefs were formed during the socialization process as a result of many years of interaction with and within the relevant social systems such as; family, class, ethno-racial,
political, religious, community-society and education.

Garry and Kingsley (1970) felt that social attitudes could not be viewed apart from society as a whole. Halloran (1967) felt that the content of attitudes were provided by the culture. Leslie, Larson and Gorman (1973) felt that any of the groups to which people belong or do not belong become points of reference for shaping attitudes, evaluations and behaviors.

**Attitudes, Beliefs, Intentions, Behaviors**

Although there are many definitions of attitudes, most investigators would probably agree that attitudes can be described as a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object (Fishbein & Ajzen, 1975). With reference to this definition of attitude, Fishbein and Ajzen (1975) identified three features:

1. **Consistency is composed of three factors;**
   - stimulus-response consistency (performing the same response or set of responses over and over),
   - response-response consistency (all responses elicited by objects should be consistent with one another),
   - evaluative-consistency (multiple behaviors toward an object at different points in time). All three types of consistency are taken as indicative of an attitude.

2. **An attitude is a predisposition.** The nature of a predisposition is defined as an enduring organization of motivational, emotional perceptual, and cognitive processes with respect to some aspect of the individual's world. Attitudes cannot be observed directly but must be inferred from observed consistency in behavior.
3. Attitudes are learned. Experiences influence and modify behavior of organisms.

As a concept, attitude is characterized by a great deal of ambiguity and confusion, having been variously referred to as a prejudice, stereotype, value, feeling, attraction (Fishbein & Ajzen, 1975). They concluded that the major characteristic which distinguishes attitude from other concepts is its evaluative or affective nature. Thus, an attitude may be defined as the amount of affect for or against some object. This concept should be measured by some method which serves to locate individuals on a bipolar affective dimension in regard to a given object.

Fishbein and Ajzen objected to the commonly-used, three-component framework of attitude (affect, cognition, conation.) Affect (feelings or emotional component) refers to feelings of liking or disliking that people have about the object of the attitude; cognitive (perceptual or informational component) refers to knowledge, opinions, beliefs or thoughts about the object and conative (action or behavioral component) refers to gross behavioral intentions or actual behavior toward a given object (Zimbardo, Ebbensen & Maslach, 1977).

In dealing with attitudes, Fishbein distinguished between behavioral intentions and actual behavior, and believed that the classification should consist of four broad categories: affect, cognitive, conative (behavioral
intention) and behavior (observed overt acts) (Fishbein & Ajzen, 1975). Fishbein's concept of attitude includes a predisposition to behave (behavioral intention) but not actual behavior. He also argued that a distinction should be drawn between the concept of attitude (affect), belief (cognition) and behavioral intention (conation) because these variables obey different laws (Fishbein & Ajzen, 1975).

Attitudes toward an object are based upon beliefs about the object. If the beliefs associated with the object were favorable attributes, the attitude will be positive. Attitude may be viewed as corresponding to the total affect associated with beliefs about an object. In terms of the relationship between beliefs and attitudes, an attitude is related to a set of beliefs about an object, but not necessarily to any one belief about the object (Fishbein & Ajzen, 1975).

Beliefs generally refer to probability judgement concerning some discrete aspect of environment. More specifically, a belief represents the information people have about an object and serve to link some object to some attribute (Fishbein & Ajzen, 1975). For example, the belief that "older adults are lonely" links the object "older adults" to the attribute "lonely." The object of a belief may be a person, group of people, an institution, an event, or a policy and the associated attribute may be
an object, trait, property, event, outcome, quality, or characteristic (Fishbein & Ajzen, 1975).

In reference to the object-attribute association which comprises a belief, belief-strength exists based upon the subjective probability of a relationship between the object of the belief and some other object, value, concept or attribute (Fishbein & Ajzen, 1975).

As people associate an object with various attributes, beliefs result which ultimately determine their attitudes, intentions and behaviors. New beliefs are formed through people performing some behavior. To gain information, people may interact with others, watch television, read, and experience events. Activities provide the basis for the formation of descriptive and inferential beliefs (Fishbein & Ajzen, 1975).

Intentions may be viewed as a special case of beliefs, in which the object is always a person and the attribute is always a behavior (Fishbein & Ajzen, 1975). Thus the strength of a given behavioral intention should be measured by some procedure that measures the subjective probability of a relation between an individual (the subject) and some intended action (Fishbein & Ajzen, 1975).

Attitude toward an object is empirically related to the individual's intentions to perform a variety of behaviors with respect to that object. The relationship exists
between the attitude and the set of behavioral intentions as a whole, rather than some specific intention toward the object (Fishbein & Ajzen, 1975).

The term behavior refers to overt acts that may be observed in their own right as distinctive from questionnaire or verbal responses which might also be viewed as instances of overt behavior. Verbal responses in Fishbein's view, are used to infer beliefs, attitudes and intentions to behave rather than to serve as actual behaviors (Fishbein & Ajzen, 1975). The relationship between attitudes, beliefs, intentions and behaviors are described in terms of Fishbein's conceptual framework in Figure 3.

Intentions to perform specific behaviors are regarded as the determinants of those individual behaviors. Attitude is viewed as one of several variables which determine intention to perform a given behavior. Attitude corresponds to overall affect (positive or negative) associated with attributions made about the object. Other beliefs which influence behavioral intention include beliefs of a normative nature (beliefs that such referents think the individual should or should not perform the behavior in question) and the individual's motivation to comply with any given referent (Fishbein & Ajzen, 1975). Normative beliefs and motivation to comply lead to normative pressures upon the individual Fishbein terms "subjective norm." Subjective
Schematic Presentation of Conceptual Framework Relating Beliefs, Attitudes, Intentions and Behaviors with Respect to a Given Object (Fishbein and Ajzen, 1975, p. 15)
norm and attitude toward a specific behavior are regarded as
the two major factors influencing behavioral intention and
actual behavior (when actual behavior is determined by
behavioral intention) (Fishbein & Ajzen, 1975). The factors
influencing intentions and behavior are depicted in Figure
4.

The Attitude-Behavior Relationship

A major issue in the social-psychological study of
attitudes concerns the extent to which verbal expression of
attitude related to congruent behaviors (Fishbein & Ajzen,
1975). A prominent characteristic of scales for the
measurement of attitudes toward old people was that they
seldom have been examined in relation to behavioral cri-
teria (Kogan, 1979). The relationship between attitude and
behavior was felt to be important in relation to older
adults because it was believed to relate to the quality of
care and services provided to older adults (Hatton, 1977;
Kosberg & Harris, 1978; White, 1977).

In traditional attitude-behavior research, general
agreement that attitudes toward some object constituted a
predisposition to respond to the object in a consis-
tently positive or negative manner led to a widespread
assumption that attitudes and overt behavior were closely
related to each other. Efforts to demonstrate empirically
Perceived Consequences

Beliefs about consequences of behavior X for self

Attitude toward behavior X

Intentions to perform behavior X

Behavior X

Normative beliefs about behavior X

Subjective norm concerning behavior X (includes motivation)

Influence Feedback

Figure 4

Schematic Presentation of Conceptual Framework for the Prediction of Specific Intentions and Behaviors (Adapted from Fishbein and Ajzen, 1975, p. 16)
a consistent predictive relationship between attitudes and behavior resulted in limited success. In a comprehensive review of over 30 studies which covered a wide range of subject populations, verbal attitude measures, overt behavioral measures and attitude objects, Wicker (1969) concluded,

Taken as a whole, these studies suggest that it is considerably more likely that attitudes will be unrelated or only slightly related to overt behaviors than that attitudes will be closely related to actions. Product-movement correlation coefficients relating the two kinds of responses are rarely above .30 and often near zero. Only rarely can as much as 10 percent of the variance in overt behavioral measures be accounted for by attitudinal data (Wicker, 1969, p. 65).

In contrast, Fishbein and Ajzen (1970, 1975, 1977) proposed that, while a given measure of attitude might be unrelated to a given measure of behavior, some measures of attitude were related to some measures of behavior. They believed that strong attitude-behavior relations would be obtained under high correspondence between the behavioral entities of action, target, context and time (Fishbein & Ajzen, 1977). Specifically, simultaneous attitudes and behaviors of similar students concerned with the same object and the same activity would be highly correlated.

Changing Attitudes and Behaviors

The literature contains evidence of both agreement and disagreement with the ability of educational programs to change attitudes. Traditionally, American educational
practices were concerned with changing attitudes by giving information and providing new knowledge. Jersild (1963) felt that negative attitudes could be changed by giving members of various groups an opportunity to know one another through personal contact or by studying the history, background and contributions various groups had made.

The amount of information known or learned about an object seemed to affect attitudes toward that object. Fishbein (1975) felt that to produce attitude change required a change in informational base underlying the attitude. In an experiment, Herzog (1979) exposed young women (age 19.7 years) to persuasive information presented at different speeds. The amount of information received was positively related to the degree of attitude change in adult women.

Jones, Rambo, and Russell (1978) studied college students and found that amount of prior political information they possessed influenced the degree of attitude change under conditions of exposure to counter-attitudinal presentations. Information served to bolster, protect, and support existing attitudes and their interrelationships. Low information people were vulnerable to the intrusion of counter-attitudinal fact and opinion and perhaps able to maintain their original position only by avoidance, denial, and compartmentalization. Frequent attempts by experts
may alter the attitudes of low information people. Moreover, Halloran (1967) reported that, if material (information) was complicated, unfamiliar, and impersonal, then (particularly for less intelligent people) more effective attitude change could be obtained by being explicit in drawing conclusions. He felt that attitude change depended not just on knowledge, but on many other factors, including the person who was presenting the knowledge, how this person was perceived, the form in which the knowledge was given, the circumstances of delivery, the manner of presentation, the condition and affiliations of those receiving the knowledge and the function that knowledge might perform in serving the needs of the recipients. Seltzer (1977) found the faculty and learning environment far more important than informational content and course orientation in changing attitudes toward older adults.

As part of the educational program, laboratory learning has been both successful and unsuccessful in changing attitudes. The school situation naturally provided a laboratory situation because the students were required to be present and the experienced forced exposure to the communicator (the teacher) and to the attitude exposed (Garry & Kingsley, 1970). They felt that in the presence of a group, repetition and reinforcement of a message was persuasive in changing attitudes.
Halloran (1967) felt that receiving a message in a group (perhaps laboratory learning) situation could impede or facilitate attitude change.

It may impede by neutralizing the message by furnishing support for existing attitudes, by rewarding compliance, by punishing deviance. It may facilitate by permitting a discussion that reveals hitherto unknown support for deviance and leads to a clearer idea of what attitudes are really shared and by giving the opportunity for decision-making and commitment (Halloran, 1967, p. 71).

He felt group listening was more effective than solitary listening if the majority of the group was in favor of the position of the communicator; it was less effective if the majority was opposed. Moreover, a public declaration of one's acceptance of the position advocated apparently made one relatively immune to change. As far as group decision was concerned this seemed to be more effective in changing attitudes than the lecture method.

Laboratory training is directed toward intervention and change. Schein and Bennis (1965) felt that the central idea of the laboratory was "action research" and that action should be based on as many reliable (scientifically validated) data as available. Then once action was behavior, continual checks were made on the results of the action (feedback) and these data were evaluated before further action steps were taken.

Fishbein & Ajzen (1975) believed that changing attitudes required a change in the information base.
Schein and Bennis (1965) felt that to promote change in an organization, information must be "unfrozen" or unlearned and then new learning must take place. This new learning could take place successfully in a laboratory. They felt that laboratory stimulated learning because: 1) concepts followed experience, human behavior could be understood when accompanied by an emotional experience; 2) learning was based on direct and personal experience and not upon distant and vicarious experience; and 3) the here-and-now provided a reference point of reality, concrete behavior to which concepts, words and ideas could be related and compared.

Contact or interaction was a main ingredient in the success of the laboratory experience changing learning and behavior (Schein and Bennis, 1965). However, when relating the similarities of negative attitudes held toward older adults to those held toward other disadvantaged groups such as blacks, Amir (1969) found contact not to foster more positive attitudes. More negative attitudes were brought about when the contact produced competition between groups, when the contact increased tension and when the contact was involuntary. Conditions that reduced prejudice were those that were of an intimate rather than casual nature. Amir (1969) found the effects of interpersonal contact on racial prejudice depended on: 1) the relative status of the direct ethnic groups involved; 2) the intimacy of contact; 3) the
degree to which the contact was pleasant, or rewarding; and 4) the importance of the interaction. He concluded that contact between members of different racial groups tended to produce some changes in attitudes. The directions of change depended largely on the conditions under which contact took place, favorable conditions tended to reduce prejudice, unfavorable conditions tended to increase prejudice and intergroup tension.

**Attitudes Toward Older Adults**

**Historical Background:**

Interest in and concern for older adults may be found in historical writings traced down through the years. The thinking of Plato and Socrates, on the one hand, and by Aristotle on the other, provided some background for the ambivalent attitudes observed in present day society.

Plato assumed that the body and soul were not subject to the same forces of decline and that physical aging of the body actually freed the soul for things of the mind (or intelligence). In fact, rulers of city states were not sufficiently mature to deserve their seats until they had lived about 50 years. Socrates was reported to have thought that the young learn by keeping company with their elders. Aristotle, however, entertained very pessimistic notions about older people. Man advances up to the age of 50, and after that time physical decline of the body carries the whole person downhill. Time causes people to accumulate a series that take a cumulative toll eroding self-esteem and courage. The elderly, he thought, live more in the past and possess little hope for the future (Oyer & Oyer, 1976, p.4).

Achenbaum and Kusnerz (1978) presented a historical perspective of attitudes toward older adults from
1799 to 1978. From the American Revolution to the Civil War, most older citizens were accorded special respect which was fully earned from their value and unique contributions to the well-being of the new nation. They exemplified the "virtuous life". They stayed in business and, when necessary, adapted their work roles to their changing capacities. They served as counselors and sources of information. Loneliness and ill health existed, but old age was revered and sentimentalized. Changes in American culture and society from 1865 to 1934 brought different images of the elderly and a new perspective on old age began to emerge. Science, Industry, and literature assigned negative words and images to the aged. Post-Civil War Americans degraded age and exalted youth. The adolescent or youth had the potential to improve the world. As a consequence, admiration for youthful energy and ambition permeated all aspects of American life after the 1890's. Americans minimized the moral, social, and economic contributions of the aged. After 1935, the government took general steps to promote the general welfare of the elderly. The Social Security Act was passed. Health and social services were provided for those people over 65 years of age. Presently, Achenbaum and Kusnerg (1978) feel that the image of aging is distorted and will continue to be distorted until society recognizes that the elderly yearn
for, need, and deserve the same satisfactions as the young. They identified this discrimination and stereotyping of the aged as ageism. They feel that ageism allows the younger generation to see older people as different from themselves and thus, the younger generation ceases to identify with elders as human beings.

General Attitudes Toward Older Adults:

An extensive review of methodologies and findings from studies involving perceptions of older adults at both the societal and individual level was conducted by McTavish (1971). He concluded that a large number of negative attitudes about older adults exist. Groups studied included members of all age groups, from children through older adults themselves. Among the stereotyped views were that older adults

...are generally ill, tired, not sexually interested, mentally slower, forgetful and less able to learn new things, grouchy, withdrawn, feeling sorry for themselves, less likely to participate in activities (except, perhaps, religion), isolated, in the least happy or fortunate time of life, unproductive, and defensive in various combinations and with varying emphases (p. 97).

However, since many items used in scales reflected attitudes about the prospect of aging or undesirable traits rather than attitudes toward older adults themselves, views of older adults did not appear uniformly negative. The nature
of samples (mostly college students), the measuring instruments (lacking comparability across studies), and reporting practices (often brief and deficient in technical detail) made assessment of findings about individual perceptions of older adults difficult.

There is evidence of both positive and negative attitudes toward older adults in different age groups (children, adolescents, adults, and older adults). Children (age 3-12 years) were found to hold negative attitudes toward older adults (Click & Powell, 1976; Jantz, 1976; Powell & Lamson, 1979). Higgins (1977) found fifth graders to hold favorable views of older adults. College students (young adults) held negative attitudes toward older adults (Fitzgerald & Joseph, 1978; Tuckman & Lorge, 1953). Also, Tuckman and Lorge (1953) identified prejudices and misconceptions of older adults by graduate students. Kogan (1962) found authoritarian and pessimistic college students to hold more negative attitudes toward older adults. Positive attitudes were held toward older adults by undergraduate college students (GoIde & Kogan, 1959). Harris and Associates (1977) concluded that the older public (age 65 and over) embraced stereotypes and myths of older adults. Brubaker (1976) found older adults to hold positive self-evaluations and Signori and Kozak (1977) found older adults to hold more favorable and positive qualities than unfavorable and negative qualities.
Adolescent Attitudes Toward Older Adults:

Consistent with studies of other age groups, adolescents also shared both negative and positive attitudes toward older adults. Conclusive evidence that adolescents' attitudes toward older adults are completely negative or positive does not exist.

Hickey and Kalish (1968) found pervasive age bias among adolescents. Using a questionnaire, they measured attitudes toward different age groups of adults held by junior high and high school students. As the age of the imaginary reference group increased, the attitudes of the students became increasingly less favorable. They saw old people as living in a social climate which was not conducive to feelings of usefulness, adequacy and security (Hickey & Kalish, 1968).

Similar findings regarding attitudes of older students were reported by several researchers. Using a questionnaire that included items for the Personality Research Form, Ahammer and Bennett (1977) assessed perceptions toward older adults of 112 middle-class adolescents. Personality dimensions were compared with their perceptions of older people and the older adults were perceived as different from the respondents on six of the ten dimensions.

Kastenbaum and Durkee (1964) administered an Age-Appropriate Attitude Technique to different groups of
adolescents and young people. Adolescents were found to hold predominately negative appraisals of older adults. Adolescents tended to omit any consideration of the later years of their own lives. For the adolescents, "old age" appeared risky, unpleasant, and without significant positive values.

Lane (1964) used a modified Tuckman-Lorge Questionnaire with 400 high school and college students. Attitudes were not very favorable but were not negative toward older adults. Lane felt that this apparent neutralism of youth toward older adults may indicate a climate of tolerance rather than one of acceptance and responsiveness.

Olejnik and LaRue (1977) administered a questionnaire adapted from the Tuckman-Lorge Old People Questionnaire to sixth, seventh, and eighth grade students in a small Mid-western American city. Younger, as well as older, adolescents held negative stereotyped perceptions of older adults, however they also held several positive stereotyped perceptions of older adults.

All findings were not negative; several researchers have found adolescents to hold positive attitudes toward older adults. Using Kogan's Old People Scale with 270 ninth graders and 142 twelfth graders in a rural community, Ivester and King (1977) found that subjects tended to be
more positive than negative toward older adults. Thomas and Yamamoto (1975) administered a story writing and semantic differential scale to 2,000 students in grades five, seven, nine and eleven in a midwestern American public school system. Generally, the stories presented a happy extended family with positive attitudes toward older adults. The semantic differential results also indicated a considerably more positive overall picture of older adults than have been found in previous investigations. Trent, Glass and Crockett (1979) administered Kogan's Attitude Toward Old People Scale (1961) as a pretest to 4-H Club members between the ages of 13 and 18 in North Carolina. The mean pretest score for the total sample (N=400) was 4.002 out of a possible 6.0, indicating a slightly positive attitude toward older adults.

Service Providers' Attitudes Toward Older Adults:

From a review of the literature in this area, all service providers of older adults held negative attitudes toward older adults. Service providers include all health care and social care workers who work with older adults. The attitudes of three groups of health workers (medical students, house staff members, and members of a mobile psychogeriatric screening team) were studied by Soloman and Vickers (1979). Female house staff had high and significantly different scores from all the groups, while the geriatric staff adhered least to stereotypes of older
adults. Nursing home aides also were found to hold negative attitudes toward older adults (Finkelstein, 1977). He found authoritarianism significantly related to age bias and disability bias and that employment experience in a nursing home did not lead to a reduction in either age bias or disability bias.

Attitudes of nursing assistants, licensed practical nurses and registered nurses were studied by Campbell (1971). She found all groups held stereotypic attitudes. Licensed practical nurses and nursing assistants held most stereotypes about older adults but preferred working with them. Registered nurses held few stereotypes about older adults but spent little time with them. Salary increase or shift preference did not significantly increase the willingness of subjects to work with older adults. Romaniuk, Hoyer, and Romaniuk (1977) found that both staff (psychiatrist, psychologist, activity therapist, occupational therapist, social worker, psychiatric nurses, and assistants) and clients at the Geriatric Day Treatment Center at Hutchings Psychiatric Center in Syracuse, New York viewed the elderly clients as helpless and dependent.

Another health care professional who held negative attitudes was the physician. Miller, Lowenstein and Winston (1976) found physicians held negative attitudes toward nursing homes and older adults because of three reasons: First, they had little contact with or study of older adults
and aging in medical school. Secondly, physicians did not receive enough money for nursing home care. Third, there was not the prestige for a physician being on a nursing home staff as there was on a hospital staff. Gordon (1973) reported that University of California medical students' ranked wards for chronically ill old persons last in their choice of wards to work.

Social care workers, such as social workers and workers for the United States Administration on Aging held negative attitudes. From reviewing research findings in the area of social work, Kosberg and Harris (1978) felt that social workers held negative attitudes. They proposed the screening of prospective employees according to personality factors that were accepting of older adults until adequate interfacing were discovered. Ernst and Ernst (1971) explored the attitudes of employees of the United States Administration on Aging. Regional Deputy Commissioners, State Directors, State Collateral Respondents, and Project Directors felt that older adults had more disadvantages than advantages. These areas of concern were identified: economic, physical, political, powerlessness, few responsible roles, isolation and loneliness.

Variables Related to Attitudes Toward Older Adults

Several variables have been related to attitudes toward older adults. In a review of approximately 31 studies,
McTavish (1971) concluded that, as a rule, associations were small and certainly inconsistent. No single variable emerged as unanimously related to attitude toward older adults. Research completed since 1971 have not contributed findings which alter McTavish's conclusions.

The following factors were explored for possible relationships to attitudes toward older adults.

Age:

In the first phase of Thorson's study (1975), the attitudes of a group of professional and para-professional workers (N=59) in programs serving the aged were examined. They completed the Attitudes Toward Old People scale (OP Scale, 1961). For comparison purposes, a group of graduate and undergraduate students (N=61) at the University of Georgia was asked to complete the same instrument. Means on the OP were calculated, and comparisons were made by age level and years of education by respondents. See Table 1 and 2.

<table>
<thead>
<tr>
<th>N</th>
<th>Age Group</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Under 22</td>
<td>4.75</td>
</tr>
<tr>
<td>58</td>
<td>22 to 35</td>
<td>4.73</td>
</tr>
<tr>
<td>21</td>
<td>36 to 55</td>
<td>4.39</td>
</tr>
<tr>
<td>25</td>
<td>Over 55</td>
<td>4.33</td>
</tr>
</tbody>
</table>

*higher mean score indicates a more positive attitude toward old people*
A consistent pattern can be seen in Table 1, with attitudes toward old people becoming more negative as age of respondent increased. A t-test indicated that those subjects aged 35 and under had significantly (p<.01) more positive attitude toward old people than those over age 35.

In Table 2, a similar consistent pattern can be seen, with positive attitudes toward older adults increasing with subjects' years of education. A pronounced and significant (p<.01) difference in attitude can be seen between the subjects having one or more years of college education and those having no college. A t-test was used to determine significance (no score reported). The statistics used at this point did not determine how much each element, age or education, contributed to the variance in attitude.

Table 2
Means Scores of Sample I by years of Education (Thorson, 1975a, p. 4)

<table>
<thead>
<tr>
<th>N</th>
<th>Years of Education</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>8 or less</td>
<td>4.28</td>
</tr>
<tr>
<td>20</td>
<td>8 to 12</td>
<td>4.28</td>
</tr>
<tr>
<td>61</td>
<td>12 to 16</td>
<td>4.67</td>
</tr>
<tr>
<td>30</td>
<td>Graduate School</td>
<td>4.70</td>
</tr>
</tbody>
</table>

An opposite conclusion was reached by Campbell (1971 licensed practical nurses (mean age 35.3 years, N=48) and
nursing aides (mean age 35.8 years, N=49) were more likely than registered nurses (mean age 28.0 years, N=50) to prefer working with older adults. On the Tuckman-Lorge Questionnaire (1953) both licensed practical nurses (mean score 62.1) and nurses aides (mean score 68.7) scored higher (held more stereotypes toward older adults) than registered nurses (mean score 53.1). However, these preferences could as easily be attributed to levels of education as age.

During the second phase of Thorson's study (1975a), the subjects from the first phase (59 professional and para-professionals from agencies serving older persons, plus 61 graduate and undergraduate students from the University of Georgia) were combined with a group of juniors and seniors (age 16-18 years) from a high school in Atlanta. A total of 217 questionnaires was useable in making this comparison. Within the two groups combined, no consistent pattern of increase in positive attitudes toward older adults was demonstrated by subjects' age. See Table 3. The F score for the variable age, 2.22, approached the 2.65 score needed to demonstrate significance at the .05 level, but was not high enough to prove that age affected attitudes.

Trent, Glass and Crockett (1977) studied 4H members in North Carolina (N=400) aged 13-18 years and also found no relationship of age to attitudes toward older adults. Similar findings were reached by Ivester and King (1977)
while studying ninth and twelfth grade students (N=439) in Danielsville, Georgia, and Hickey and Kalish (1968) while studying 335 students, aged 8-20 years.

Other researchers found age to be related to attitudes toward older adults. Olejnik and LaRue (1977) reported attitude change toward older adults to be inversely related to grade level in a sample of 369 sixth, seventh, and eighth graders in a small midwestern American city. Harris and Associates (1977) found age to be a determinant of attitude with the youngest group (age 18-24) having the most negative attitudes toward older adults. In the third part of Thorson's study (1975b), 212 students at the University of Georgia completed the OP scale and the EPPS (Edwards Personal Preference Schedule) and analysis of variance was done for the factors' age, sex, and years of education. It was evident from the analysis of variance that there was a highly significant variance (p<.001) in attitude by age.

Table 3
Mean Scores for Samples I and II by Age
(Thorson, 1975a, p. 6)

<table>
<thead>
<tr>
<th>N</th>
<th>Age</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>113</td>
<td>Under 22</td>
<td>4.32</td>
</tr>
<tr>
<td>58</td>
<td>22 to 55</td>
<td>4.88</td>
</tr>
<tr>
<td>21</td>
<td>36 to 55</td>
<td>4.37</td>
</tr>
<tr>
<td>25</td>
<td>over 55</td>
<td>4.34</td>
</tr>
</tbody>
</table>
toward older adults. See Table 4. For the group tested, attitude toward older people became increasingly more positive as age of the subject increased.

Level of Education:

Education appears to be an important factor contributing to variation in attitude toward older adults (Thorson, 1975a). In the second phase of Thorson's study, 217 questionnaire scores on the OP scale were used from three sample groups of professionals and para-professionals serving older adults, graduate and undergraduate students from the University of Georgia, and Atlanta junior and senior high school students. Education was found to be a significant factor. The F score was higher than 3.88 F needed to establish significance at the .01 level. See Table 5.

Studies of various levels of nursing personnel (aides, licensed practical nurses, and registered nurses) indicated that, as level of education increased, stereotype acceptance decreased. Campbell (1971) found that registered nurses, on the average agreed with half of the 88 items on the Tuckman and Lorge Questionnaire (1953), while the licensed vocational nurses and the nursing aides agreed with over 60 percent of the statements. (Increased number of agreements is equal to more stereotype acceptance).
### Table 4

Analysis of Variance - OP Score by Age

*(Thorson, 1975b, p. 5)*

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F Ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>6,338.00</td>
<td>3419.00</td>
<td>7.538</td>
<td>0.001</td>
</tr>
<tr>
<td>Within Groups</td>
<td>209</td>
<td>94,792.00</td>
<td>453.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>211</td>
<td>101,630.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below age 20</td>
<td>6</td>
<td>120.67</td>
<td>10.93</td>
</tr>
<tr>
<td>Ages 20 to 25</td>
<td>143</td>
<td>111.72</td>
<td>19.85</td>
</tr>
<tr>
<td>Above age 25</td>
<td>63</td>
<td>100.08</td>
<td>24.84</td>
</tr>
<tr>
<td>Total Group</td>
<td>212</td>
<td>108.51</td>
<td>21.95</td>
</tr>
</tbody>
</table>

### Table 5

Analysis of Variance by Group and Variable

*(Thorson, 1975a, p. 7)*

<table>
<thead>
<tr>
<th>N</th>
<th>Variable and Sample Group</th>
<th>F</th>
<th>F .95</th>
<th>F .99</th>
</tr>
</thead>
<tbody>
<tr>
<td>98</td>
<td>Sample Group II, by race and social class</td>
<td>.177</td>
<td>2.70</td>
<td></td>
</tr>
<tr>
<td>217</td>
<td>Samples I and II, by subjects' age</td>
<td>2.22</td>
<td>2.65</td>
<td></td>
</tr>
<tr>
<td>217</td>
<td>Samples I and II, by subjects' education</td>
<td>9.24</td>
<td>2.65</td>
<td>3.88</td>
</tr>
</tbody>
</table>
Socioeconomic Level:

McTavish (1971) summarized many studies and found no consensus about the relationship of social class and attitudes toward older adults. However, more recent findings agreed that social class was highly significant in attitudes toward older adults. Harris and Associates (1977) found income and not race as the significant variable affecting the general view of older people. Blacks with incomes under $2,000 had a median score of only 7.4, far lower than the score of 10.1 among blacks with incomes of $4,000 and over. Yet, at the same income level ($3,000 to $6,999), there was no significant difference between the median score of whites (10.0) and blacks (9.8). The premise posed by Ivester and King (1977) that higher social classes have more positive attitudes toward older adults was found to be not quite statistically significant after the application of an F-test (score not reported). However, when the upper class and the upper middle class were grouped together and compared with the other three (middle-middle, lower-middle, and lower) classes grouped together, a significant difference was found. The two upper classes had a more positive attitude toward older adults than adolescents from the lower social classes. Using a t-test, the results were significant (p.<02). Thus, this study indicated that adolescents from higher social classes have
significantly more positive attitudes toward older adults than adolescents from lower social classes. However, social class accounted for only one percent of the variation in attitude.

Contrary to other findings, Thorson (1975a) divided 48 black and 50 white secondary school students in Atlanta into socioeconomic groups; black lower status, black middle status, white lower status, and white middle status. No significant difference in OP scores were found for race of socioeconomic status. See Table 2. When this sample (II) was combined with Sample I (professionals and para-professionals and graduate and undergraduate college students), the variables of race and social class did not approach significance (F, .177). Refer to Table 6.

Table 6
Mean Scores by Race and Social Status, Sample 2
(Thorson, 1975b, p. 2)

<table>
<thead>
<tr>
<th>Number</th>
<th>Variable</th>
<th>Mean Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>Black, lower status</td>
<td>3.81</td>
</tr>
<tr>
<td>11</td>
<td>Black, middle status</td>
<td>3.95</td>
</tr>
<tr>
<td>9</td>
<td>White, lower status</td>
<td>3.87</td>
</tr>
<tr>
<td>41</td>
<td>White, middle status</td>
<td>3.88</td>
</tr>
</tbody>
</table>

*To be consistent with the scoring method used by Kogan, lower mean scores indicate more positive attitudes toward old people.
Achievement Level:

Achievement tests measure the level of development attained by the individual in one or more abilities. An achievement test may be used as a predictor of future learning and as such serve the same purpose as an aptitude test (Anastasi, 1976). In this study, it was assumed that achievement test scores defined the students' level of learning and would influence the amount of new learning the students would acquire during the Queen City Program. Thus, this learning would have a relationship to attitudes toward older adults.

No research is available with regard to achievement level and attitudes toward older adults. Several researchers have alluded to the importance of achievement level and attitudes toward older adults. Hickey, Hickey, and Kalish (1968) studied the perceptions of 208 children in upper-class and lower-class Catholic schools and upper-class and lower-class public schools. These students produced stereotyped stories describing old people as having ambulatory problems, and being lonely, bored, and inactive. It was argued that some of the differences between the wealthy and poor children in the urban group could be attributed to differing levels of conceptual ability and verbal learning, rather than to differing perceptions. Thorson (1975b) suggested that future researchers look for correlates of OP scores and intelligence, as there was an
obvious relationship between intelligence and academic achievement. Those of higher intellectual capacity might well be expected to reject more readily popular but untrue stereotypes of the elderly.

Sex:

Because the population in the Queen City Program was predominately female, this researcher felt that studies dealing with the variable, female, should be reviewed. Two studies dealt with the changing of female attitudes toward older adults through training programs. Finkelstein (1977) studied 71 predominantly black nurses aides (69 were women) and found that a gerontology inservice program did not alter their negative attitudes toward older adults. Using the Personality Research Form, Labouvie and Baltes (1976) found training to be effective in changing attitudes toward older adults in adolescent girls aged 14-18 years.

From the studies reviewed, females seemed to be more positive toward older adults than males. Three studies were concerned with the differences of female and male attitudes toward older adults. Thomas and Yamamoto (1975) found the overall trend was for females (N=100) from grades 5, 7, 9 and 11 in midwestern American public schools, to rate older adults higher on all concepts than did males. After the administration of Kogan's OP scale (1961) to 212 undergraduates and graduate students at the University of Georgia, Thorson (1975b) calculated an analysis of variance
for OP scores by sex. The results indicated a significantly more positive attitude (p<.0001) toward older adults for females than for males. Using Kogan's OP Scale (1961), Trent, Glass and Crockett (1979) found females to be more positive toward older adults than males while studying 400 4H Club members (aged 13-18) in 100 counties in North Carolina.

One study which was not concerned with males, related to the attitudes of younger and older females toward older adults. Hickey, Rakowski, Hultsch and Fatula (1976) studied 322 (age 18-74) white females in Pennsylvania and found younger women to be less negative toward aging before training (F [4,302] = 2.55, p<.05, w^2=.019) than were older participants.

Another study reported no statistically significant differences in attitudes toward older adults between males and females. Ivester and King (1977) gave Kogan's OP scale to 209 males and 202 females (ninth and twelfth grade students). A t-test of the mean scores on the OP scale for males and females indicated that the difference was not significant (scores not reported).

Geographical Background:

This investigator felt it necessary to review information related to the attitudes of inner city people toward older adults because the sample population in the
Queen City Program lived and attended public high school in the inner city of Cincinnati, Ohio. Very little information was available in relation to a geographical background of the inner city. Two studies dealt with the attitudes of people toward older adults in the inner cities. Both studies found their subjects to hold negative attitudes toward older adults. Finkelstein (1977) studies the attitudes toward older adults of 71 nurse aides in metropolitan Detroit and found them negative at pretest and posttest time (after inservice). Thorson (1975b) studied the attitudes toward older adults of 48 blacks and 50 whites (junior and senior high students) in an urban Atlanta public high school. These urban adolescents held negative attitudes toward older adults. Refer to Table 2.

Knowledge:

The integrating theme of later adolescence is the formation of personal identity. A major part of the formation of identity involves not only the maturing of social and emotional competencies but cognitive competencies. Such cognitive competencies as skills of hypothesis raising, conceptualization of the future, logical problem solving, and the ability to anticipate the consequences of an action were necessary for identity formation (Newman & Newman, 1979).
For these higher level processes to function, an adequate lower-level knowledge base must be acquired. Gronlund (1976) defined knowledge from Bloom's Taxonomy of 1956 as the remembering of previously learned material. This may involve recall of a wide range of material, from specific facts to complete theories.

Little research was available in relation to attitudes toward older adults and knowledge about older adults. Studies of this nature have been encouraged by Palmore (1977) and Kilty and Feld (1976). They felt that stereotypes of older adults must be divided from facts about older adults. Geiger (1978) surveyed 28 social workers, 32 lawyers, and 26 medical graduate students and found them to have little or no knowledge of basic facts about older adults. Jones, Rambo and Russel (1978) found knowledge or information to bolster, protect, and support existing attitudes. They found low-information people more vulnerable to the intrusion of counter-attitudinal facts and opinions.

Contact with Older Adults:

Contact with grandparents was found to be related to attitudes toward older adults by several researchers. Rosencranze and McNevin (1969) administered a Semantic Differential to 287 undergraduate students at the University of Missouri; the respondents who had close grandparent
contact (daily or weekly visits with at least one
grandparent) judged male older adults more favorably than
students having little or no contact with grandparents.

Robb (1977) administered Kogan's OP scale and a
behavioral intention scale to 153 baccalaureate nursing
students. A significant difference in means on the
behavioral intention measure depending upon perceived
quality of relationship with grandparents on a five point
scale ranging from very negative (1) to very positive (5)
was noted. The F-value for a one-way analysis of variance
was F= .301, df=4, 148; significant at p=.025. Attitudes
became increasingly favorable (mean score 161.00 to 191.06)
as relationships progressed from negative to very positive.
Means on the OP scale did not vary significantly on this
variable although they did become steadily more favorable as
perceived quality of relationship increased.

Contacts with older adults in a health related work
setting were reported by several researchers. Heller and
Walsh (1976) found that students who had much previous work
experience with older adults, and students who described a
close relationship with a grandparent, tended to hold
positive attitudes toward older adults. This study involved
110 associate degree nursing students. Conclusions were
stated without supportive statistics.
Length of time spent working with older adults was found to be related to increased desire to work with older adults (Campbell, 1971). These conclusions were stated without supporting statistics. Kayser and Minnegeroe (1975) found that the number of nursing students (N=293) who worked in nursing homes increased from 33.7 to 52.4 percent from the freshman to the senior year. While 76.6 percent of those who had worked with older adults by the senior year reported that the experience was satisfying, they generally preferred not to continue in that field of specialization. These students were, however, more willing to work with older adults in other kinds of situations.

Contact with other older adults (not grandparents) was reported to influence significantly attitudes of people in general toward older adults. In a study by Rosencranz and McNevin (1969), respondents (undergraduate students) who had meaningful associational contact (not defined) with at least one older person showed more favorable attitudes toward the older male.

In contrast, many researchers found contact with grandparents and other older adults not related to attitudes toward older adults. Ivester and King (1977) found grandparents not to affect the attitudes of adolescents toward older adults (N=439, ninth and twelfth grade students). An F-test of the difference on the OP scores classified according to the frequency of contact with paternal and maternal
grandparents revealed no significant differences among those who visited their grandparents weekly, monthly, and yearly (actual statistics not reported). Trent, Glass and Crockett (1979) found similar results with 4H Club members (N=400), aged 13 to 18 years (actual statistics not reported).

Chappel (1977) used a semantic differential scale with fifth and sixth grade, middle class, white students (N=40) and found no significant difference in attitudes toward older adults based on contact with a grandparent (Maximum, Ongoing two hours per week; Minimum, Sporadic infrequent exposure). These students made quite positive judgements of old people in terms of the evaluative factors. The parents of these students may have been influential in the children's report.

In Robb's (1977) study with 143 female baccalaureate nursing students the product-moment correlations with both the OP scale and the behavioral intention measure were low ranging from - .18 to + .19 and all non-significant for months spent as either a volunteer or employee working with older adults, number of years spent living with older relatives, and number of grandparents living.

The quality of contact with older persons seemed to influence respondents' judgements in relation to attitudes toward older adults (Rosencranz & McNevin, 1969). Thirty-nine members of the sample (N=287, undergraduate college students) had experienced contact with older adults
in a hospital setting. This type of association seemed to indicate a form of negative contact, since it was related to more negative evaluations of older males.

Higgins (1977) collected nonconclusive data about children's contacts with older adults in Minneapolis. He administered a questionnaire to 529 fifth graders (10-11 years of age) and 260 senior citizens (over 60 years of age, middle income level). The groups of students and senior citizens were divided into three groups; High Contact, (N=158 students and 137 senior citizens), Moderate Contact, (N=171 students and 59 senior citizens) and Low Contact (N=200 students and 64 senior citizens). For all practical purposes, intergenerational contact for High, Moderate, and Low Contact groups were about the same. This unexpected result caused the researcher to drop the comparison across the three contact groups. The probability existed, however, that self-reports did not accurately reflect actual intergenerational contacts.

Throughput

The Need for Gerontology Programs

Sherron and Lumsden (1978) felt that there was a definite need for gerontology programs in the field of human services.
The inclusion of content on aging in the curricula of career education in the human services becomes increasingly imperative, if we accept the premise, based on a demographic prediction of population trends, that practically all workers being educated today for the human services will spend some part of their careers in practice with or in behalf of older adults. An increasing proportion of workers will specialize in the field of aging, in developing or working in new service areas directly related to older adults. Career education refers to the preparation of nurses, adult educators, primary and secondary teachers, medical doctors, dentists, public administrators, librarians, social workers, lawyers, occupational therapists, recreation workers, clergy, planners and architects, public health administrators, business administrators, and others who work directly for or in behalf of the human services (Sherron & Lumsden, 1978, p. 171).

The Association for Gerontology in Higher Education (AGHE) and the Gerontological Society (1980) reported that the battle to establish programs of gerontological education and research within the formal structure of higher education has, to a large degree, been won. The programs exist. They must be used. But, Aging Education (all educational programs aimed at helping students to learn more about the process of aging and the aged, including gerontology programs) at the elementary and secondary school levels were lacking and, what was available, needed national coordination (Clearinghouse for Elementary and Secondary Aging Education, 1979).

Buffer (1977) identified a need for gerontology education and training programs for service providers of older adults. Administrators and staff of service agencies in central Ohio (N=252) were surveyed by the Education and
Training Needs Assessment Questionnaire. Four areas of knowledge in which a perceived need for further training were identified. These areas included: 1) Methods of assessing services needed by elderly clients; 2) Roles and responsibilities of service providers in identifying/modifying suitable community resources; 3) Planning service programs for elderly clients and 4) Prevalent frauds and crimes against elderly persons.

Seefelt and Jantz (1977) felt that accurate information about older adults and actual contact with older people enabled children to assess their perceptions of the aging process and how aging affected them. By exposing children to an unbiased look at the attributes, behaviors, and characteristics of older adults in a wide variety of roles, formation of stereotypic negative attitudes toward older adults could be avoided.

Content of Gerontology Programs

Because of the increasing number of older adults in the population, Sartore (1976) felt children needed to learn about the aging process and how to relate to older people. He felt that schools should participate in this teaching. Practical teaching methods included: 1) classroom discussion; 2) speculative questioning by the teacher (posing questions to students about aging); 3) meeting with older adults; and 4) the use of poetry, stories, and pictures by children to express their attitudes toward aging.
Lane (1964) felt that the public needed to understand that problems of aging could best be met by training in the early and middle years and that this training was only part of the life-long learning experience. She proposed four ways that high school teachers could help young people develop supportive and respectful attitudes toward older adults. The student should be provided with: 1) contact with older adults; 2) study of the later stages of the life cycle; 3) readings about older adults in American; and 4) analysis of attitudes toward older adults among students within a class.

Butler (1979) proposed that home economics had always focused on normal life stages and adding the study of normal aging into the home economics curriculum seemed both normal and appropriate. The knowledge gained by society would make life better for older adults particularly the 95% who did not live in institutional settings.

Dullaert (1977) designed a college course on Psychology of Aging. The objectives were learning factual core material and the beginning of modification in the students' perceptions and attitudes concerning older adults. His approach emphasized field trips and student interaction within a humanistic encounter group framework.

Sherron and Lumsden (1978) felt that a gerontology program should include Social Policy, Human Behavior and Social Environment, Practical Skills, Philosophy and
Beliefs and Research. The following areas were recommended for a Social Policy course: 1) the provision of the Social Security Act and its amendments; 2) the Older American Act, the services provided through each of its titles, and local services of any given geographical area; 3) the Medicare provisions and the procedures to take advantage of them; 4) discovering and locating all of the services that exist for older adults in any given community; 5) state licensing requirements for nursing homes and other institutional facilities; 6) legal resources for older adults; 7) senior volunteer programs, employment programs, and various educational programs geared to retired adults; and 8) knowledge of special consumer affairs and citizen protection programs that serve as resources for older people.

A course on Human Behavior and Social Environment included theoretical bases for: 1) knowledge of the biology and physiology of aging; 2) relationship between health and nutrition; 3) effect of diet on digestion, circulation, and respiration, and the relationship of all of these to mood, mental health, thinking, and problem-solving capacity; 4) knowledge of the relationship of exercise to depression, relaxation, sleep, nutrition, and the capacity for gratifying relationships.

"Practical Skills" included some knowledge of individual and group methods for working with individuals, families and unrelated groups; and in program development,
design, administration, planning, community development and organization, and social and environmental planning.

It was recommended that students Philosophy and Beliefs confront their attitudes that are products of a culture that rewards youth and productive work. They needed to acknowledge some responsibility for changing the attitudes of those around them.

Finally, knowledge of research was needed to facilitate the solving of social problems and the evaluation of programs. Workers in gerontology should be able to translate research findings into material that could be used daily in work situations with older adults.

Atchley and Seltzer (1977) suggested that introductory programs in gerontology include both study and field experience. Study should include social gerontology, biological, psychological, and social-psychological aspects of aging, health, finances, level of living, retirement, leisure, death and dying, societal responses to aging (economical, political), community, religion, interpersonal relations, research, and social organizations.

Gerontology Programs and Attitudes

Many researchers involved in the fields of human services agree on the need for the study of gerontology in their programs (Auerbach & Levenson, 1977; Butler, 1979; Kosberg & Harris, 1978; Lane, 1964; Miller et al., 1976;
Sartore, 1976; and Sherron & Lumsden, 1978). In reference to the value of gerontology courses in changing attitudes toward older adults, the research conclusions were contradictory. Most of the research in this area has been done with college students, but four successful endeavors were accomplished with adolescents.

Ellington (1978) used two different teaching techniques (inductive and deductive) on three experimental classes (approximately 25 students each) of high school seniors. The three groups were compared with a control group and with each other. The program lasted for nine weeks. Once a week, an older person instructed the three groups (B, C, and D) on a social studies topic. Experimental group C's treatment included, in addition to the speaker program, a two week mini-course on the problems of older adults. The course was taught inductively to group C. Experimental group D also received the elderly speaker and a mini-course on the problems of older adults, but the mini-course was deductively taught to this group. No initial group differences were found on pretest data from Kogan's OP scale (1961). An analysis of variance was run on the posttest data to determine if treatment caused any group differences. Differences were found. The Scheffe Multiple Range Test was used to determine where group differences lay. The major conclusion in the study was that when compared to non-treatment group, a combination of contact
with older adults and education about older adults appeared to change adolescents' attitudes toward older adults. No differences were found between the students who received contact with older people and students in the control group. Also, no differences were found between the two groups that received inductive and deductive instruction when they were compared with each other (no statistics reported).

Labouvie-Vief and Baltes (1976) studied 40 girls, age 14 to 18 years (grades 9-12) of a small Wisconsin community and randomly divided the girls into four training groups of 10 each. The groups were Specific Training (studied 30 items most misperceived on pretest, plus older person's view of items); No Feedback Training (studied items most misperceived on pretest) and No Training. Each of the students in these experimental groups was randomly matched with one of 10 older women (age 66-81 years) who were all community living residents contacted through various religious organizations. The older women served as a successful aging model. Each older woman and all adolescent girls were administered the Personality Research Form. Four weeks after the pretest, a 30 minute training program was performed. Two posttests were conducted, one immediately following the training session and the second, two weeks after training. For General Training, No Feedback Training, and No Training, there were no significant pretest to posttest changes. For Specific Training, perception accuracy was markedly increased after training.
(Neuman-Keuls; p<.05) dropping from a five item discrepancy before to one of one item only after training. This training effect was well maintained during the second posttest. In the No Feedback group, negative perceptions increased from pretest (mean item discrepancy = -13) to the two posttests (1.3 and 1.6, respectively). Negative traits attribution seemed to become further accentuated in the absence of corrective feedback.

Trent, Glass and Crockett (1979) studied (N=300) 4H Club members (13-18 years of age) in 100 counties of North Carolina. Three types of experiences were provided. One group attended a series of six 1 1/2 hour seminars dealing with the problems and satisfactions of aging. The second group held in-depth interviews with older adults over a period of six weeks. The third group had a combination of the seminar series and the in-depth interviews. There were significant changes in attitudes in all three experimental groups from pretest to posttest (OP scale). There was no significant change in the control group. The greatest change in attitude was effected in the seminar-interview group, followed by the seminar and the interview groups. See Figure 5. An analysis of covariance revealed that there were no significant differences in attitude change between the various experimental groups. The seminar-interview, the interview, or the seminar groups would be equally effective
Olmsted (1976) studied the impact of a unit in gerontology on the knowledge, attitudes and perceptions of high school students concerning the aging process, the aged and their own aging. The students were in grades 10 through 12 at a midwestern high school. Five Human Relationship classes
served as the experimental group. Five Psychology classes served as the control group. A demographic inventory, an information test, two attitude instruments, and a perception of age questionnaire were administered to all groups on a pre-post basis. Significance was found for two instruments. A significant gain of six points was reported on the Cognitive Test. A positive change was revealed by the Ball State Aging and the Aged Questionnaire (first attitude measure), but the mean score of 98.89 was well below the highest possible score of 135. The second attitude measure, Opinions About People showed an overall insignificant change, but four of seven scales showed significance. Perceptions of Age Questionnaire also failed to register any significant difference.

At the college level studies have been completed that show courses in gerontology can change attitudes toward older adults. Gordon and Hallauer (1976) used four groups of undergraduate students at Geneseo State College in Western New York in their study. One group consisted of a child development course with no visiting with older adults; a second, a child development course with visiting of older adults; a third, an adult development course with no visiting and a fourth, and adult development course with visiting. The students visited relatively healthy older adults in a housing facility in a nearby city. The four groups had identical distributions on the pretest positive
items of Kogan's OP scale (1961). This was verified by a 4x2 chi-square test ($\chi^2 = 5.75$, df=3, $p < .05$). The posttest distribution did differ significantly ($\chi^2 = 10.57$, df=3, $p < .025$). Separate 2x2 chi-square tests were then conducted for each group on the number of responses above and below the median on pretest and posttest scores to determine what group or groups showed significant changes. The chi-square for Groups I and II (child development, no visiting; child development, visiting) were non significant ($\chi^2 = 2.55$ and 2.12 respectively, df=1, $p > .05$). Both Group III; the adult development course with no visiting ($\chi^2 = 4.21$, df=1, $p < .05$) and Group IV; the adult development class with visiting ($\chi^2 = 7.02$, df=1, $p < .01$) did show significant changes from pretest to posttest. The amount of change was greater for Group IV (adult development course with visiting of older adults) than for group III (adult development class with no visiting with older adults).

Hicks (1977) divided college students into four groups, course work in gerontology; course work in gerontology and visits with healthy older adults; course work in gerontology and visits with residents in nursing homes, and no course work or visiting. Seven questionnaires were administered at the beginning and end of a 10 week university quarter. A multivariate analysis of variance was conducted on pretest measures and on change scores from pretest to posttest.
No significant multivariate difference was found among the groups on initial measures. A significant multivariate difference was revealed on change scores, however. The visitation experience with healthy, active older adults produced significantly more favorable responses across measures, while the nursing home experience appeared to have no significant impact upon students overall pattern of responding (no statistics reported).

Porter (1978), in a Psychology of Aging Course, matched a college student with an older person (over 60 years of age) who acted as a consultant to the student during the term. Students attitudes were measured by a 17 item semantic differential scale given during the first and last class meetings. Items consisted of positive and negative objective responses to concepts, "old people" and "young people". Positive changes in attitudes about older adults were found for almost all pairs of items (no statistics reported).

The use of inservice programs to change human service workers' attitudes toward older adults have provided positive results. Tuckman and Lorge (1954) reported on 92 men and women (age 25-79 years of age) who attended a lecture-discussion series on aging to inform agency board and staff members and volunteers about new ideas and new developments for dealing with older people (lecture group). Their attitudes toward older adults were compared with the
attitudes of college undergraduates (N=100, average 19 years), graduate students (N=500, average age 32 years), middle aged (N=100, average age 50 years), and older adults (N=100, average age 75 years). They answered 40 questions about old people and 10 questions about the older worker. Individuals who have had more contact with a variety of older adults tended to be somewhat less negative in their attitudes toward aging than those whose acquaintance were more limited and constrained. However, the lecture group did evade answering many specific questions.

Romaniuk, et al. (1977) experimented over a three-month period with 35 older psychiatric clients (age 60-94 years of age; 29 females and 6 males) and 22 staff members in a Geriatric Day Treatment Center at Hutchinings Psychiatric Center. The staff received 2 1/2 hours of inservice training during which their unconscious attitudes toward older adults surfaced and they learned how to reduce patronizing statements to clients (verbal interjections, possessing helpful intentions, which hinder individuals to initiate action in their environments). Pretest and posttest intervention frequencies of patronizing statements generated by staff and clients, during daily morning community meetings were compared to assess the effectiveness of the intervention by raters. Data revealed that staff generated proportionally more patronizing statements than clients and that this proportion remained constant over the course of
the investigation (staff pre-intention = 72.9 percent; post-intention = 74 percent; overall = 73.1 percent). An average of 10,048 patronizing statements was generated by clients and staff during the pre-intervention phase and only 2,941 during the post-intervention period. Of this, the total staff averaged 7,333 statements per pre-intervention session, while clients average 2,714 per session. Staff training reduced the staff average to 2,176 and clients' average declined to 0.765. Three Duhn-Bonferroni t-statistics were generated to test for pre- and post-intervention mean differences in the frequency of patronizing statements. The test statistics computed for staff, clients and total were found to be significant (\(t=5.295, p<.01\) for staff; \(t=3.310, p<.01\) for clients; and \(t=5.345, p<.01\) for total). The average number of patronizing statements significantly declined after the intervention.

The results indicated that a relatively brief training period (2 1/2 hours) can produce a sustained change in negative attitudes of staff toward older psychiatric clients as evidenced by a significant reduction of patronizing statements expressed during the course of a daily meeting. The decline in the frequency of staff patronizing statements also produced a corresponding decline in client patronizing statements.
Hickey, Rakowski, Hultsch and Fatula (1976) investigated as a function of a three-hour training program (Sensory Deprivation and the Elderly), 322 women (18-74 years of age) from 15 different service sites in Pennsylvania. Experimental groups were pretested and posttested during one session by the Opinion About People (OAP, 1972). The control group was pretested and posttested with the same lapse as the experimental group. A week later the control group was trained and again posttested. The Sensory Deprivation and the Elderly program included a film, simulation exercises, as well as lecture and discussion of the key components (interpersonal communication, sensory impairment, environmental adaptation, contextual relationships, proxemics, redundant cueing and role change). An analysis of variance with repeated measures (ANOVRM) was applied to the data for attitude factors. Time of testing yielded main-effects on several factors, suggestive of program impact. Newman-Kelus follow-up analyses on these effects revealed that the significant attitude changes occurred from pre-training to post-training for Experimental, and subsequently in the training phase for the Control group participants (no statistics reported). However, comparison of Experimental and Control factor score on the initial two testings found significant change in the Experimental group with no change found for the Control group.
From the summary of previous research findings in relation to changing attitudes toward older adults, the combination of a gerontology course or program and contact with older adults seem to be successful. However, Colgan (1976) investigated two experimental groups (N=30) and one control group (N=26) of students at Ryerson Polytechnical Institute, Toronto, Canada. One experimental group had previous practical experience in gerontology (worked with older adults), the other experimental group had no such experience. Both experimental groups were exposed to a 15 week course in introduction to gerontology. They were pretested and posttested by Opinions About People (1972). The course was effective to a limited degree in bringing about positive shifts in attitudes toward the older adult among the two groups of college students. In group I (no practical experience), a positive shift in attitude was effected along two of the seven attitudinal dimensions investigated. In the case of group II (previous practical experience), a positive shift in attitude was effected along five of the seven attitudinal dimensions.

Finkelstein (1977) was unsuccessful in changing the attitudes of nursing aides toward older adults during an inservice training program in nursing homes. He studied the attitudes of 71 nurses aides in two large metropolitan Detroit nursing homes. The aides ranged in age from 18 to 58 years. Sixty-three were black and eight were white;
69 were women and two were men. Attitudes were measured by the negative scale of Kogan's OP Scale (1976) and divided into three levels or blocks (high, medium and low attitudes toward older adults). The groups consisted from nine to 15 members. Trainers received 12 hours of training in order to conduct 12 group sessions. Six groups studied and did activities relating to older adults; six groups did activities relating to people in general (not older adults); and the control group did only the pretest and posttest. Staff trainers did not lead to significant reduction in age and disability bias. Similar negative findings were reported in relation to nursing homes in a position paper by Kosberg and Harris (1978).

Contact within a program with older adults but without the presence of gerontology study have been found to be both influential and non influential in changing attitudes toward older adults. The P.K. Yonge Laboratory School, Gainesville, Florida, sent second and third graders (age 7-9 years) twice weekly to visit 13 adopted grandparents in a nursing home (Whitley, 1976). The children interacted with these older adults by writing, reading, dramatics, parties, arts and crafts, gardening, music and games. The positive and negative responses of these children were rated by responses to older persons' pictures. Their responses grew more positive after interacting over a period of time with the adopted nursing home grandparents.
Olejnik and LaRue (1977) used sixth, seventh, and eighth grade students from two middle schools in a small Midwestern American city. Most of the subjects were middle-income and nearly all were Caucasian. The subjects were 369 students (178 boys and 191 girls) from School A and 77 students (35 boys and 42 girls) from School B. Subjects were tested on two occasions with an adaptation of the Tuckman and Lorge Questionnaire (1953). Students from School A were exposed to 40 people over 60 years old in the school cafeteria while students and older adults ate their lunches. The students at the two schools (A&B) held somewhat different opinions about older adults when the study began. However, in School B where systematic contact with older adults was lacking, attitude change over a three-month period was minimal and the direction of the change was mixed. In contrast, for students at School A where daily contact with older adults was present, perceptions of the aged became more positive and less stereotyped over the three-month interval, presumably as a result of the daily intergenerational contact. The exception to this pattern occurred with respect to the students' personal reaction to being with older adults. It appeared that the intergenerational contact in the school lunch setting actually lead to a decrease in students' willingness to interact with the older adults. The initial perceptions of younger adolescents appeared to be just as likely
to have negative stereotypes of older people as older adolescents. However, changes in perceptions of older adults were inversely related to grade level. More changes occurred among the sixth graders (20 items changed) than the seventh graders (15 items changed), while the least number of changes occurred among the eighth graders (8 items changed) with four changes indicating greater resistance to interact with older adults.

Auerbach and Levenson (1977) administered the OP scale to 60 undergraduate students (age 18-22 years) in a humanities class which contained older students (age 65 and over). They were tested before and after the semester class was completed. The control group was humanities students with no older adults in their class. The McNemar test for the significance of changes with Yates' correction for continuity was computed to test the significance of differences between the two experimental conditions and the two control conditions. For the experimental conditions, attitudes were significantly more negative ($\chi^2(1) = 36.026, p < .05$). There were no significant differences in the attitudes of control subjects between the first and second administration of the OP scale ($\chi^2(1) = .50, p < .05$).

The Attitude-Behavior Relationship in Gerontological Research

Robb (1979) compared three groups of baccalaureate nursing students (second level sophomores, N=59; third level juniors, N=30; & fourth level seniors, N=64) after a
gerontologic nursing course. The three groups were compared immediately after the course, one-year after the course, and two-years after the course. Another group was compared immediately before and immediately after the course. They were measured by instruments that assessed beliefs, behavioral intentions, tendencies to respond in a socially desirable manner, and personal demographic characteristics. The Kogan OP scale was administered as the fifth measure to the group assessed immediately after the gerontologic nursing course since preliminary data analysis indicated that the belief instrument was not functioning as expected. Behavioral intentions were found to be significantly more positive (p=.04) and the tendency to respond in terms of normative socially desirable views was significantly reduced immediately following the course (p=.04). Changes in beliefs were not significant. Beliefs, behavioral intentions and socially desirable response tendencies remained constant [(p=.03) F-value of 2.21; (N=153); df=8,294] for up to two years following exposure to a course in gerontologic nursing (except in case of junior students with respect to beliefs about older adults; p<.004). The attitude-behavior relationship was evaluated by means of Pearson product movement correlation procedures. Preliminary data analysis indicated low and non significant correlations between the belief and behavioral intention measure. A second belief measure (OP scale) was added for the postcourse
group of sophomores. The findings were significant ($p < .01$) correlation of .32 ($N=59$) between the moderately reliable (.69) OP scale and the more reliable (.81) behavioral intentions' instrument. These measures were assumed to measure attitudes toward older adults on the strength of the single moderate correlation between the behavioral measure and the OP scale (.32$p=.006$; $N=59$).

A very limited amount of research has been completed where observation is used to rate the behavior of the practitioner with the older adult client. Grounlund (1976) felt that obtaining an objective record of the most meaningful data posed the problem when using observation as the method for data collection. Hatton (1977) used observation as the technique for collecting data on nurse-client interaction. The small sample size, the difficulty of making accurate objective observations, and the rights of clients to privacy during certain activities were identified as inhibitors of accurate objective data collection.

Hatton observed seven nurses on the day shift and evening shift of a long-term care facility while they performed their nursing functions. After observations were completed, Kogan's OP scale was administered to all seven nurses. The nurses were rated on positive and negative behavioral criteria toward patients. The criteria were identified by the researchers, sociologist and two nursing clinical specialists. The percent of each nurse's interaction was compared with her positive OP
scale score and the percent of negative interaction was compared with her negative OP scale score. The data were not statistically significant but there seemed to be relationships between attitudes and positive interactions for at least five of the nurses in the study. This result supported the assumption that the nurse with the more favorable disposition exhibited a high percentage of positive interaction and that there was a relationship between attitudes and behavior on OP's positive scale, but not on the negative scale.

White (1977) developed several hypotheses and models to explain the attitude-behavior relationship between nursing people (nurses and nurses aides) and their patients. White hypothesized that: 1) the quality of the health care environment depends upon the type of interaction between nursing people, their patients and the expectations, rewards and supports of the environment; 2) attitudes (behaviors) of nursing people and their patients reflect both their own attitudes and knowledge and the influence of the environment upon them See Figure 6; 3) attitudes are triggers for behavior; 4) feelings (attitudes) and knowledge (beliefs) in a particular situation, in response to a particular stimulus, cause a particular behavior; and 5) attitudes and behaviors do not always match because of a lack of approval on an attitude or behavior by the people and environment of the situation See Figure 7.
Factors Influencing The Encounter Between Patient And Nursing Person (White, 1977, p. 17)
Figure 7

Sequence Of Events From Stimulus To Action (White, 1977, p. 19)
Hypotheses of Study:

The following hypotheses were developed from the review of literature. These hypotheses were used to guide this study.

H₁: There is a statistically significant difference between treatment groups on measures of attitude and knowledge.

H₂: There is a statistically significant difference between junior and senior students on attitude scores toward older adults as measured by the OP Scale and knowledge scores as measured by Facts on Aging.

H₃: There is a statistically significant interaction between juniors and seniors and treatment groups on attitude and knowledge scores.

H₄: There is a statistically significant difference between scores on attitude and knowledge at pre-post test times.

H₅: There is a statistically significant interaction between treatment groups and test times on attitude and knowledge scores.

H₆: There is a statistically significant interaction of class (juniors and seniors) and test time on attitude and knowledge scores.

H₇: There is a statistically significant interaction between treatment groups, class (juniors and seniors) and test times on attitude and knowledge scores.

H₈: There is a statistically significant difference in attitude and knowledge scores of high school juniors enrolled in the gerontology program at pre-post test time.

H₉: There is a statistically significant difference in attitude and knowledge scores of high school seniors enrolled in the gerontology program at pre-post test time.
H_{10}: \text{There is a statistically significant difference in attitude and knowledge scores of junior and senior gerontology classes at pretest time.}

H_{11}: \text{There is a statistically significant difference in attitude and knowledge scores of junior and senior gerontology classes at posttest time.}

H_{12}: \text{There is a statistically significant difference in behavioral intention scores of junior and senior gerontology classes.}

H_{13}: \text{There is a statistically significant relationship between the scores on attitude (OP Scale) and scores on knowledge (Facts on Aging) instruments.}

H_{14}: \text{There is a statistically significant relationship between the scores on attitude (OP Scale) and behavioral intention (Behavioral Intentions in Relation to the Elderly) instruments.}

H_{15}: \text{There is a statistically significant relationship between scores on attitude instrument (OP Scale) and socioeconomic level of student participants.}

H_{16}: \text{There is a statistically significant relationship between scores on the attitude measure (OP Scale) and student respondents' achievement level.}

H_{17}: \text{There is a statistically significant relationship between scores on attitude measure (OP Scale) and students' having a grandparent in the home.}

H_{18}: \text{There is a statistically significant relationship between scores on attitude measure (OP Scale) and student respondents' interacting in activities with older adults.}

H_{19}: \text{There is a statistically significant relationship between scores on attitude measure (OP Scale) and respondents' caring for sick older adults.}
H20: There is a statistically significant relationship between scores on attitude measure (OP Scale) and respondents' liking older adults.

H21: There is a statistically significant relationship between scores on attitude measure (OP Scale) and respondents' frequency of contact with older adults.

H22: There is a statistically significant relationship between scores on attitude measure (OP Scale) and student respondents' amount of time spent with older adults.

H23: There is a statistically significant relationship between scores on attitude measure (OP Scale) and student respondents' number of associations with older adults.

H24: There is a statistically significant ordering of association between scores on the attitude measure (OP Scale) and knowledge, achievement level, socioeconomic level, grandparent in home, interacting in activities with older adults, caring for sick older adults, liking older adults, frequency of contact with older adults, amount of time spent with older adults and number of older adults with whom associated.

Summary

The researcher presented the conceptual model of Open-system theory. This model provided a framework for the research on high school vocational students' attitudes toward older adults. Input-Throughput-Output described the processes of the Queen City Program. The students with their attitudes and beliefs about older adults were viewed as the "inputs". The gerontology program of information about older adults and interaction with older adults was
delineated as "throughputs". The "outputs" were the intended changed attitudes toward older adults, positive behavioral intentions toward older adults, and the increased knowledge about older adults. These three components interacted and were influenced by the environment throughout the entire processes.

This model also provided a framework by which to review the related literature of the study. The "inputs" included a review of adolescence; attitudes, beliefs, intentions and behaviors; the attitude-behavior relationship; attitudes toward older adults; and variables related to attitudes toward older adults. The "throughputs" included a review of the need for gerontology programs; content of gerontology programs; gerontology programs and attitudes; and the attitude-behavior relationship in gerontological research. The "outputs" included a set of 24 hypotheses developed from the review of literature.

These were highlights of findings from the review of literature: 1) Today's adolescents seemed to live in a technological society believing in the here and now with the future being uncertain and intergenerational ties being weak. 2) Disadvantaged adolescents seemed to acquire prejudice at early ages from the role models around them. 3) Attitudes were defined as learned predispositions to respond in a consistently favorable or unfavorable manner with respect to a given object. 4) Attitudes related to
behavior. 5) Knowledge of an attitude permitted prediction of behavior or behavioral intention when both the attitude and behavior are measured at the same level of generality. 6) Both agreement and disagreement of educational programs being able to change attitudes were revealed. 7) Information and contact were successful and unsuccessful in changing attitudes. 8) Gerontology programs should consist of study and field experience (contact). Programs should include social policy, psychology and biology of aging, social environment, practical skills, philosophy and beliefs, and research. 9) Quality care of older adults seemed to depend on positive attitudes toward older adults.

Many results about the relationship of certain variables to attitudes toward older adults were contradictory. Uncertain results were identified for such variables as age, socioeconomic level, females, amount and quality of contact with grandparents and other older adults, behavioral intentions, and gerontology programs. Gaining knowledge about older adults and completing more years of education or training seemed to have a positive relationship on attitudes toward older adults. A geographical background of the inner city and being a service provider to older adults seemed to produce negative attitudes toward older adults. The relationship of achievement level to attitudes toward older adults needed research study.
CHAPTER III

METHODOLOGY
"Throughput"

Population and Sample

Eighty eight participants were involved in this study at pretesting sessions and 67 at posttesting sessions. The large drop in number of participants at posttesting sessions was due to students being withdrawn from programs and from school (N=12). Male students were excluded. One male was enrolled in the Gerontology Job Training Program. A total of 66 females with both pre and posttest scores was available for data analysis. All participants were female juniors and seniors in high school.

The treatment groups consisted of intact junior and senior classes in a Gerontology Job Training Program. At pretest session, 15 students were in the junior class and 13 in the senior class. A total of 28 students was pretested. At posttest session, 13 students were in the junior Gerontology I class and nine in the senior Gerontology II class. A total of 22 students was posttested. Refer to Table 7.

The control groups also consisted of intact classes. The pretesting session included one junior class of Child Care I students (N=16), one senior class of Infant Care II students (N=11), one group of juniors from two different
General English I classes (N=17) and one group of seniors from two different General English II classes (N=16). A total of 27 Child and Infant Care students was pretested. A total of 33 English students was pretested. An overall total of 60 students was involved in the control group at pretest time. Posttesting sessions included 12 students in Child Care I class, 10 in the Infant Care II class, and 11 juniors and 11 seniors in the General English classes. A total of 22 Infant and Child Care students was posttested. A total of 22 junior and senior General English students was posttested. A total of 44 students was involved in the control group at posttest time. Refer to Table 7.

Table 7

Number of Study Participants at Pretest and Posttest Time

<table>
<thead>
<tr>
<th>Group</th>
<th>Time &amp; Class</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jr.</td>
<td>Sr.</td>
<td>N</td>
</tr>
<tr>
<td>Gerontology</td>
<td>15</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>(Treat.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Care</td>
<td>16</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>(Control)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Eng.</td>
<td>17</td>
<td>16</td>
<td>33</td>
</tr>
<tr>
<td>(Control)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
<td>40</td>
<td>88</td>
</tr>
</tbody>
</table>
English classes were used as control groups in addition to the Child and Infant Care classes because Nathan Kogan (1961) confirmed the fact that people who had strong nurturance feelings were more positive toward older people. The researcher felt that the students in Child and Infant Care might have strong nurturance tendencies and that this trait might affect the questionnaire results. Nurturance tendencies are shown when individuals give love and affection and provide safety for other people. Both Child Care and Gerontology students could possess nurturance tendencies during their interaction with children and older adults in the laboratory.

The Gerontology, Child and Infant Care classes were part of the Queen City Vocational Center. The General English classes were from Taft High School which is located across the street from the vocational center. Both facilities are part of Cincinnati Public Schools in Cincinnati, Ohio.

The students in this study were predominantly black. Testing sessions (pre and post) consisted of 11 black and two white students in Gerontology I; nine black students in Gerontology II; nine black and three white students in Child Care I; nine black and one white in the Infant Care II class; 10 black and one white in General English I; and 11 black students in the General English II classes.
There were 30 black students and six white students in the junior classes (N=36). There were 29 black students and one white student in the senior classes (N=30). Refer to Table 8 for percentages of black and white junior and senior students in Gerontology I and II, Child Care I, Infant Care II, and General English I and II. Application of two 3X2 chi-square tests found little difference between race in junior classes ($X^2=1.07$, df=2, $p<.05$) or senior classes ($X^2=2.12$, df=2, $p<.05$). The racial groups within the junior and senior classes were similar.

### Table 8

Percentage of Study Participants by Group, Class and Race (N=66)

<table>
<thead>
<tr>
<th>Group</th>
<th>Care</th>
<th>Jr. Black</th>
<th>Jr. White</th>
<th>Sr. Black</th>
<th>Sr. White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerontology</td>
<td></td>
<td>30.55</td>
<td>5.56</td>
<td>30.00</td>
<td>-</td>
</tr>
<tr>
<td>Child Care</td>
<td></td>
<td>25.00</td>
<td>8.33</td>
<td>30.00</td>
<td>3.33</td>
</tr>
<tr>
<td>General English</td>
<td></td>
<td>27.78</td>
<td>2.78</td>
<td>36.67</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total %</strong></td>
<td></td>
<td>83.33</td>
<td>16.67</td>
<td>96.67</td>
<td>3.33</td>
</tr>
</tbody>
</table>

The students ranged from 15 to 18 years of age in the junior classes at the pretesting sessions (Gerontology I, $\bar{x}=16.38$ years; Child Care I, $\bar{x}=15.92$; and General English I,
The students ranged from 16 to 19 years of age in the senior classes at pretesting sessions (Gerontology II, $\bar{x}=17.00$; Infant Care II, $\bar{x}=17.40$ years; English II, $\bar{x}=17.36$ years). The students ranged from 16 to 18 years of age in the junior classes at the posttesting sessions (Gerontology I, $\bar{x}=16.92$; Child Care I, $\bar{x}=16.33$; and General English I, $\bar{x}=17.00$ years). The students ranged from 17 to 19 years of age in the senior classes at the posttesting sessions (Gerontology II, $\bar{x}=17.88$ years; Infant Care II, $\bar{x}=17.70$ years; and General English II, $\bar{x}=17.91$ years).

At pretesting sessions, there were nine students age 16, three students age 17 and one student age 18 in Gerontology I (N=13); one student age 15 and 11 students age 16 in Child Care I (N=12); and five students age 16 and six students age 17 in General English I (N=11). Refer to Table 9 for age percentages of junior class participants (N=36) at pretest time. Application of a 4X3 chi-square test found insignificant difference in age of junior classes at pretest time ($\chi^2=12.39$, df=6, p<.05). The ages of junior class participants were similar at pretesting.

At posttesting sessions, there were four students age 16, six students age 17 and three students age 18 in Gerontology I (N=13); eight students age 16 and four students age 17 in Child Care I (N=12); and three students age 16, five students age 17 and three students age 18 in General
Table 9
Age Percentage for Junior Class Participants
at Pretest Time by Treatment
(N=36)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerontology</td>
<td>-</td>
<td>25.00</td>
<td>8.33</td>
<td>2.78</td>
<td>38.89</td>
</tr>
<tr>
<td>Child Care</td>
<td>2.78</td>
<td>30.55</td>
<td>-</td>
<td>-</td>
<td>30.55</td>
</tr>
<tr>
<td>General English</td>
<td>-</td>
<td>13.89</td>
<td>16.67</td>
<td>-</td>
<td>30.56</td>
</tr>
<tr>
<td>Total</td>
<td>2.78</td>
<td>69.44</td>
<td>25.00</td>
<td>2.78</td>
<td>100.00</td>
</tr>
</tbody>
</table>

English I (N=11). Refer to Table 10 for age percentages of junior class participants (N=36) at posttest time. Application of a 3X3 chi-square test found insignificant difference in age of junior classes at posttest time ($X^2=6.09, df=4, p<.05$). The ages of junior class participants were similar at posttesting.

At pretesting sessions, there were one student age 16, seven students age 17 and one student age 18 in Gerontology II (N=9); seven students age 17, two students age 18 and one student age 19 in Infant Care II (N=10); and eight students age 17, two students age 18 and one student age 19 in General English II (N=11). Refer to Table 11 for age percentages of senior class participants (N=30) at pretest time. Application of a 4X3 chi-square test found insignificant difference in age of senior classes at
Table 10
Age Percentage for Junior Class Participants at Posttest Time by Treatment (N=36)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerontology</td>
<td>11.11</td>
<td>16.67</td>
<td>8.33</td>
<td>36.11</td>
</tr>
<tr>
<td>Child Care</td>
<td>22.23</td>
<td>11.11</td>
<td>-</td>
<td>33.34</td>
</tr>
<tr>
<td>General English</td>
<td>8.33</td>
<td>13.89</td>
<td>8.33</td>
<td>30.55</td>
</tr>
<tr>
<td><strong>Total %</strong></td>
<td>41.67</td>
<td>41.67</td>
<td>16.66</td>
<td>100.00</td>
</tr>
</tbody>
</table>

pretest time ($\chi^2=3.47$, df=6, p<.05). The ages of senior class participants were similar at pretesting.

Table 11
Age Percentage for Senior Class Participants at Pretest Time by Treatment (N=30)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerontology</td>
<td>3.33</td>
<td>23.33</td>
<td>3.33</td>
<td>-</td>
<td>29.99</td>
</tr>
<tr>
<td>Infant Care</td>
<td>-</td>
<td>23.33</td>
<td>6.67</td>
<td>3.335</td>
<td>33.335</td>
</tr>
<tr>
<td>General English</td>
<td>-</td>
<td>26.67</td>
<td>6.67</td>
<td>3.335</td>
<td>36.675</td>
</tr>
<tr>
<td><strong>Total %</strong></td>
<td>3.33</td>
<td>73.33</td>
<td>16.67</td>
<td>6.67</td>
<td>100.00</td>
</tr>
</tbody>
</table>
At posttesting sessions, there were two students age 17, six students age 18 and one student age 19 in Ger­ontology II (N=9); four students age 17, five students age 18 and one student age 19 in Infant Care II (N=10) and four students age 17, four students age 18 and three students age 19 in General English II (N=11). Refer to Table 12 for age percentages of senior class participants (N=30) at posttest time. Application of a 3X3 chi-square test found insignificant difference in age of senior classes at posttest time ($\chi^2=2.59$, df=4, p<.05). The ages of senior class participants were similar at posttesting.

Table 12
Age Percentage for Senior Class Participants at Posttest Time by Treatment (N=30)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerontology</td>
<td>6.67</td>
<td>20.00</td>
<td>3.33</td>
<td>30.00</td>
</tr>
<tr>
<td>Infant Care</td>
<td>13.33</td>
<td>16.67</td>
<td>3.33</td>
<td>33.33</td>
</tr>
<tr>
<td>General English</td>
<td>13.33</td>
<td>13.33</td>
<td>10.01</td>
<td>36.67</td>
</tr>
<tr>
<td>Total %</td>
<td>33.33</td>
<td>50.00</td>
<td>16.67</td>
<td>100.00</td>
</tr>
</tbody>
</table>
All the students in this study were ranked either as low average or low achievers according to achievement test scores (e.g., Metropolitan, Otis Lennon and Lorge Thorndike) and/or teacher appraisal. The counselors from both schools labeled and identified students with stanines between one and three on standardized achievement tests as low achievers and those with stanines between four and five as low average achievers. None of the student participants had achievement test stanine scores above five on their cumulative records. From the initial 88 subjects, 65 students had some type of achievement test score on their records. Anastasi (1976) demonstrated how raw scores of achievement tests could be readily converted into stanines by arranging the original scores in order of size and then assigning stanines in accordance with the normal curve percentages reported in Table 13. Twenty three percent of the students in a normal distribution on a standardized achievement test will be classified as a stanine one, two and three. Thirty seven percent of the students in a normal distribution on a standardized achievement test will be classified with stanines of four and five. The students in this study with known stanines would be classified in the lower 60 percent of a normal distribution with the majority of the students in the lower 23 percent of a normal distribution.
<table>
<thead>
<tr>
<th>Percentage</th>
<th>4</th>
<th>7</th>
<th>12</th>
<th>17</th>
<th>20</th>
<th>17</th>
<th>12</th>
<th>7</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stanine</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

(Anastasi, 1976, p. 83)

Teachers use achievement test information as a supplement to or confirmation of information they already possess about individual students (Cox, 1981). This viewpoint about teacher evaluation of student achievement is shared by a majority of educators including this researcher:

You have to have a complete circle. You can't just use the Metropolitan score. Because a child back then might not feel well. Some get very nervous. Some are better at classwork. As a teacher with some years of experience you start reading into children. You also observe the overall pattern of children's behavior within the classroom. So the test sometimes is a help to put pieces into the puzzle for this child. It is only a piece of the puzzle (Cox, 1981, p. 633).

Because teachers are good evaluators of student achievement, the achievement test scores (when available in records) plus the teachers' opinions were used to classify students as low average or low achievers with reference to a national sample. The participants were ranked at the time of posttesting. This timing allowed teachers to know and work with students for almost one complete school year (eight months).
Junior class participants (N=36) consisted of eight low and five low average achievers in Gerontology; eight low and four low average achievers in Child Care; and 11 low achievers in General English. Senior class participants (N=30) consisted of eight low and one low average achievers in Gerontology; six low and four low average achievers in Infant Care; and seven low and four low average achievers in General English. Refer to Table 14 for percentages of low and low average achievement levels of junior and senior student participants. Two 2X3 chi-square tests were calculated for junior and senior achievement data. Achievement levels were similar for the groups within junior classes ($\chi^2= 5.36$, df=2, $p<.05$) and seniors classes ($\chi^2=2.21$, df=2, $p<.05$).

Table 14

Percentage of Low and Low Average Achievement Levels of Student Participants by Class (N=66)

<table>
<thead>
<tr>
<th>Group</th>
<th>Achievement Levels</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jr. L</td>
<td>LA</td>
<td>Sr. L</td>
<td>LA</td>
</tr>
<tr>
<td>----------------</td>
<td>-------</td>
<td>----</td>
<td>-------</td>
<td>----</td>
</tr>
<tr>
<td>Gerontology</td>
<td>61.54</td>
<td>38.46</td>
<td>88.89</td>
<td>11.11</td>
</tr>
<tr>
<td>Child Care</td>
<td>66.67</td>
<td>33.33</td>
<td>60.00</td>
<td>40.00</td>
</tr>
<tr>
<td>General English</td>
<td>100.00</td>
<td>-</td>
<td>63.63</td>
<td>36.36</td>
</tr>
<tr>
<td>Total</td>
<td>75.00</td>
<td>25.00</td>
<td>70.00</td>
<td>36.36</td>
</tr>
</tbody>
</table>
The students in this study were classified as either economically or not economically disadvantaged by VE 21 reports (State Vocational forms), being CETA (Comprehensive Employment Training Act) job recipients, receiving government housing and free or subsidized lunch, and the expert opinion of teachers and counselors. The Privacy Act (1974) prevented direct assessment of students' economic levels. The students' economic level met final classification at the time of posttesting. The researcher felt that a more accurate judgement of students' economic level could be made after teachers and counselors had interacted with the students over an eight month period. The general opinion of the school staff was that any student who was not designated for financial aide was still not far above the poverty level.

Junior class participants (N=36) consisted of 11 economically disadvantaged and two non-economically disadvantaged in Gerontology; 10 economically disadvantaged and one non-economically disadvantaged in Child Care; and eight economically disadvantaged and three non-economically disadvantaged in General English. Senior class participants (N=30) consisted of seven economically disadvantaged and two non-economically disadvantaged in Gerontology; seven economically disadvantaged and three non-economically disadvantaged in Infant Care; and seven economically disadvantaged and four non-economically disadvantaged in General English. Refer to Table 15 for percentages of economic
disadvantagement and non-economic disadvantagement levels of junior and senior student participants. Two 2X3 chi-square tests were calculated on junior and senior economic data. Economic levels were similar for student participants within junior classes ($\chi^2=1.51; \ df=2, \ p<.05$) and senior classes ($\chi^2=.47, \ df=2, \ p<.05$).

### Table 15

Percentage of Economic Disadvantagement and Non-economic Disadvantagement Levels of Study Participants by Class and Treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Economic Levels</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jr.</td>
<td>Sr.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ED</td>
<td>NED</td>
<td>ED</td>
</tr>
<tr>
<td>Gerontology</td>
<td>84.61</td>
<td>15.38</td>
<td>77.78</td>
</tr>
<tr>
<td>Child Care</td>
<td>91.67</td>
<td>8.33</td>
<td>70.00</td>
</tr>
<tr>
<td>General English</td>
<td>72.72</td>
<td>27.27</td>
<td>63.63</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>83.83</td>
<td>16.16</td>
<td>70.00</td>
</tr>
</tbody>
</table>

In a true experimental study, all groups are exactly alike in relation to specific variables but in the educational setting, it is impossible to find intact groups (classes) that are exactly alike. The more similar the groups, the more accurate the comparisons and the more valid and reliable are the results of the study. In this quasi-experimental study, all the groups were very similar as demonstrated by chi-square tests.
Treatment

The two year sequenced course in gerontology was of particular relevance to this study. The gerontology students (experimental group) studied the items listed in the course outline for $1\frac{1}{2}$ hours daily. The subject matter materials were divided between two years. The first year students (juniors in high school) concentrated on the biological, psychological, and sociological aspects of aging. In addition, the first year students organized a senior citizen center at the vocational center for three hours daily. These students worked in the center with ambulatory and moderately healthy older adults from the community (senior center members). They also visited institutions (day care centers, nursing homes, and other senior centers) throughout the year. The second year students (seniors in high school) concentrated on the geriatric aspects of aging and worked daily (three hours) for pay (Co-op) in recreational and health care areas dealing with aged clients. A course outline, list of suggested senior center activities, and task lists for the recreational and health care aide are included in Appendix A.

The control groups (Child Care, Infant Care, and General English I and II) were not involved in the gerontology program. They studied for the eight month experimental period in their own perspective areas.
Selection and Preparation of Instruments

Five instruments were used in this study. All the measures had been previously developed with the exception of the General Information form. The four previously developed instruments had to be adapted to fit the unique circumstances of this study. The instruments included two forms (A & B) of Attitudes Toward Old People (Kogan, 1961), Facts on Aging (Palmore, 1977), and Behavioral Intentions in Relation to the Elderly (Robb, 1977).

Attitudes Toward Old People Scale (OP)

Many instruments were available for measuring attitudes toward older adults (Eisler, 1964; Higgins, 1977; Kilby & Feld, 1976; Kogan, 1961; Tuckman & Lorge, 1953). "Attitudes Toward Old People," often designated as the OP Scale (Kogan, 1961), was selected because of its widespread application (Auerback, 1977; Finkelstein, 1977; Gordon, 1976; Robb, 1977; Thorson, 1975a) and ease of administering and scoring. While not perfect, it provides some estimate of both positive and negative attitudes toward older adults. The OP Scale was constructed as a unidimensional Likert-type instrument consisting of a set of 17 items expressing negative sentiments about old people and another set of 17 items which were the reverse of the first set. There were, thus 17 matched positive-negative pairs. The OP Scale yielded highly satisfactory internal consistency reliabilities.
and item-sum correlations (Kogan, 1979). Reliability coefficients range from .66 to .83. There was a trend toward greater reliability for the OP- (.73 - .83) as opposed to the OP+ (.66 - .77) scale. Correlations between OP+ and OP- ranged from .46 to .52 in the three samples, all significant beyond the .01 level (Kogan, 1961). Silverman (1966) validated the OP Scale as being capable of predicting preference for association with the aged in an actual behavior situation. Correlations between OP and preference scores with the effect of SD partialled out was .38 (p<.02). In addition to the favorable results, he expressed the possibility of response-set bias (ambivalent feelings about the object of an attitude or poorly constructed opposites on questionnaire) in the instrument.

The OP Scale was revised for purposes of this study. During a telephone conversation with Nathan Kogan, suggestion was made to compile a Form A (pretest) and a Form B (posttest) from the equally matched pairs of the OP Scale. In order that both Form A and B could be compiled at random, a coin was tossed for each of the 17 original matched pairs on the OP Scale. If the coin landed on heads, the positive statement was used on Form A and the negative statement on Form B. If the coin landed on tails, the negative statement was used on Form A and the positive statement on Form B. Eight matched pairs of filler statements
(positive and negative) were developed by the researcher and ranked in order at random. A coin was tossed in the same manner as for the OP Scales' statements. Every third statement on the revised OP Scale (Forms A&B) was either a matched positive or negative filler item (See Appendix B for OP Scale Forms A & B and answer sheet).

Responses to individual items on the Likert scale were scored on a five point scale defined by labels ranging from strongly agree (5) to strongly disagree (1) for favorable statements and strongly disagree (5) to strongly agree (1) for unfavorable statements. Respondents' scores were obtained by summing the reports (N=17) of attitude for each statement on the questionnaire. The higher the score, the more positive the respondent's attitude toward older adults. Scores could range from 17 to 85 points.

Anastasi (1976) recommended that the reliability of a test with multiple-scored items (usually, sometimes, rarely, never) be calculated by the generalized formula, Cronbach's Coefficient Alpha. Thus, the reliability of the results from high school students on Form A and B of the OP scale were calculated by means of Cronbach's Coefficient Alpha. Cronbach's Alpha estimates the average of intercorrelation of items within a scale and thus provides both estimates of internal consistency reliability and construct validity (Anastasi, 1976).
Reliability coefficients ranged from .35 to .52 on Form A of the OP scale and .60 to .72 on Form B of the OP scale. The reliability coefficients on both scales were moderate with a trend toward greater reliability on Form B of the OP scale. Refer to Table 16 for reliability coefficients of Form A and B of OP scale by treatment, class, and total group.

Table 16

Reliability Coefficients (Cronbach's Coefficient Alpha) by Intercorrelation of Items for OP, Fact, and Behavioral Intention Scales by Treatment, Class and Total Group

<table>
<thead>
<tr>
<th></th>
<th>OP</th>
<th>Fact</th>
<th>Beh. Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>pre</td>
<td>post</td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geron.</td>
<td>19</td>
<td>.35</td>
<td>.63</td>
</tr>
<tr>
<td>Child C.</td>
<td>19</td>
<td>.52</td>
<td>.72</td>
</tr>
<tr>
<td>G. Eng.</td>
<td>20</td>
<td>.37</td>
<td>.60</td>
</tr>
<tr>
<td>Class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior</td>
<td>30</td>
<td>.42</td>
<td>.66</td>
</tr>
<tr>
<td>Senior</td>
<td>28</td>
<td>.39</td>
<td>.66</td>
</tr>
<tr>
<td>Total Group</td>
<td>58</td>
<td>.45</td>
<td>.64</td>
</tr>
</tbody>
</table>

Facts on Aging

Knowledge about the aging process was thought to perhaps influence attitudes toward older adults (Geiger,
1978; Jones, Rambo & Russell, 1978; Kilty, 1976; Kogan, 1979 and Palmore, 1977). In order to pursue this hypothesis further, the researcher chose to use in this study "Facts on Aging" (Palmore, 1977) as the instrument to measure acquisition of knowledge about older adults.

Palmore (1977) encouraged further exploration with this instrument. No reliability or validity information was available. Reliability of this instrument was attained by applying Cronbach's Coefficient Alpha to high school students scores on pre and post Facts on Aging Scale. Reliability coefficients ranged from .46 to .70 on pre Fact scale and .40 to .58 on post Fact scale. The reliability of both scales was moderate with a trend toward greater reliability on the pre Fact scale. Refer to Table 16.

Facts on Aging is a short documented quiz (25 items, True & False) consisting of factual statements only. It was designed to cover the basic physical, mental, and social facts and the most frequent misconceptions about aging. This instrument was used intact. An introduction and directions were added to the beginning of the test by the researcher. Each score was equal to four points. Scores could range from four to 100. The higher the score the more knowledge the respondents had about aging. This instrument was used as both a pretest and posttest. See Appendix C for test and scoring sheet.
Behavioral Intentions in Relation to the Elderly

During a telephone conversation with Nathan Kogan, the issue arose about the extent to which verbal expression of attitude related to congruent behavior. Taking this issue into consideration, plus readings related to this concern Fishbein & Ajzen, 1975, 1977; Hatton, 1977; Heberlein & Black, 1976; Kogan, 1979), the researcher inquired of Susan Robb about the possibility of using her instrument of behavioral intention, "Behavioral Intention in Relation to the Elderly" (1977), in this study. Permission was granted in return for the results of this study.

The technique of using an instrument of behavioral intention was used instead of actual observation of behavior because the observation of behavior was difficult without biasing the activities and responses of the subjects (Dyer, 1967). Older adults in nursing homes have certain rights of privacy (Patient's Bill of Rights; 1972) and behavioral intentions were found to be highly correlated to actual behavior (Fishbein, 1977; Robb, 1977).

Originally, "Behavioral Intentions in Relation to the Elderly" (Robb, 1977) was developed to measure the behavioral intentions of college nursing students toward older adults. Robb (1977) used a panel of 87 judges to rate 162 behaviors on a five-point scale to indicate the degree to which performance of the behavior was indicative of a favorable or unfavorable attitude toward older adults. Items with
standard deviations in excess of 1.0 were eliminated, as were items with means in the neutral range. Item selection based on these procedures resulted in a multiple-act instrument comprised of 26 unfavorable and 30 favorable intentions. Following a pilot study, further elimination of items on the basis of their item-total correlations was undertaken to shorten the instrument. A criterion of r=.50 (highest r=.89) was used, resulting in inclusion of 45 items which correlated significantly (p<.001) with the total set.

This instrument was found to be highly reliable in terms of content consistency (Robb, 1977). Using Cronbach's coefficient alpha, values of .91, .85, .93 and .92 were obtained from four different time periods.

Robb (1977) assessed the validity of this instrument only in regard to criterion-related validity. Behavioral Intentions in Relation to the Elderly was correlated with Marlow-Crown Social Desirability scale to determine if students responded on the belief and behavioral intention measure in a socially desirable manner. Correlation revealed values which ranged from r= -.04 to r= .24 with only one value being significant. When Behavioral Intentions in Relation to the Elderly was correlated to the Kogan scale (OP), a moderate correlation was found (not reported). Further testing in terms of validity was suggested (Robb, 1977).
In order that Robb's instrument might be used in this research endeavor, certain changes had to be made to make it applicable to high school students studying to become geriatric aides in areas of recreation and nursing instead of college nursing students. A panel of experts from the field of gerontology and education examined the original instrument. The panel consisted of one high school gerontology instructor, one high school geriatric instructor, an activity director from a nursing home, and a teacher-educator from the field of aging. Care was taken to change the original instrument as little as possible. (See Appendix D for changes.) The vocabulary of the questionnaire was simplified and defined to meet the comprehension level of the high school respondents. The directions and scoring procedures were also simplified. (See Appendix D.)

Responses to individual items were scored on a five-point scale, defined by labels ranging from very likely (5) to very unlikely (1). One multiple-act criterion was obtained by summing the reports of behavioral intentions for each respondent. The higher the score, the more favorable the respondent's intentions toward older adults. A range of 45 to 225 was possible.

A Cronbach's coefficient alpha and Spearman-Brown formula were used to determine reliability of the revised instrument. Coefficient alpha was .93 for both groups of gerontology
students (N=22), .93 for junior gerontology class (N=13), and .92 for senior gerontology class (N=9). Thus, the instrument was highly reliable in terms of internal consistency. Refer to Table 16.

General Information

The fifth and final instrument in this study, "General Information" was compiled by the researcher to provide personal demographic data about the respondents and their relationships with older adults. Research findings in relation to attitudes toward older adults and contact with older adults often were contradictory. Some researchers verified the positive relationship between attitudes toward older adults and contact with older adults, including grandparents (Campbell, 1971; Heller & Walsh, 1976; Kayser & Minningerode, 1975; Robb, 1977; Rosencranz & McNevin, 1969). In contrast, grandparents and older adults were found not to be influential in the attitudes held toward older adults by people in general (e.g., Chappel, 1977; Ivester & King, 1977). The quality of the contact affected attitudes toward older adults (Finkelstein, 1977; Robb, 1977; and Rosencranz & McNevin, 1969). Quantification and qualification of the amount and type of contact with older adults was attempted by Higgins (1977). Further clarification of previous research was deemed necessary by this researcher and the General Information
form was compiled. The introductory information on the General Information form define the personal and demographic characteristics of the respondents (name, birth, class, sex, date, age, grade and race). Questions one through eight were designed to clarify relationships with older adults (including grandparents). Questions six, seven and eight were adapted from "How Do You Feel About People" (Higgins, 1977). The General Information form was attached as the first page to both form A and B of the revised OP Scale called "My Attitudes Toward the Aged". See Appendix B.

Collection of Data

Consent forms to participate in the study were collected from the students before pretesting. All students under 18 years of age had to have parental permission (parent signature on consent form). In as much as two schools were involved in the study, two letters were designed to explain the purposes of the study in layman terms. Both letters were signed by the school principal. See Appendix E. Both the public school system and the university required consent forms from participants to insure protection of the institution and the individuals involved. Approval for the study was obtained from The Ohio State University Human Subjects' Committee and the Cincinnati Public Schools. See Appendix F.
Measurement instruments were administered during the regularly scheduled class sessions. Pretesting was undertaken the last week of September, 1980, and the first two weeks of October, 1980. At that time, students had been in school at least three weeks and were permanently enrolled for the 1980-81 school year. The General Information form, Form A of the OP Scale, and Facts on Aging (in that order) were administered to Gerontology I and II, Child Care I, Infant Care II, General English I and General English II (in that order). Initial testing required little time but, because of the high student absentee rate, several weeks lapsed before all students were tested. The researcher made 17 trips to the school in order to complete the testing (pretesting, 7 visits; posttesting, 10 visits). The posttesting was undertaken during the first three weeks of May, 1981 (eight months later). Posttesting was carried out the same as pretesting except Form B of the OP Scale was substituted for Form A and a new instrument, "Behavioral Intentions in Relation to the Elderly" was administered to the Gerontology I and II classes only. This test was not used at pretest time because the researcher was not as yet aware of its existence and not completely committed to the necessity of the behavior-attitude link in attitude research.

Because all student participants were low or low average achievers and reading comprehension was a problem,
the questionnaires were administered verbally to all students by the researcher to insure validity during testing. Statements were repeated as often as students requested. Students were allowed time after testing to look over questionnaires but few students took advantage of this situation. Students did not discuss or interact during the testing sessions. Pencils with erasers were provided for the students. Directions, statements, definitions and examples were read outloud by the researcher the same identical way to each group and/or individual to ensure equal opportunity for student understanding of statements. The cooperating teachers (teachers of the student respondents) and the researcher determined the difficult words within the instruments and defined them. Explanation and further defining of content on questionnaires were discouraged. Individual student questions about the questionnaires were not answered unless designated on the master questionnaire. As often as humanly possible, the questionnaires were administered over and over in the same manner. See Appendix G for copy of master questionnaire with directions and definitions.

**Design of Study**

This study employed quasi-experimental, descriptive correlational, and survey research procedures. In the terminology of experimental procedure, the gerontology course was the independent variable while the measures of
attitudes toward older adults (OP Scale or My Attitudes Toward the Aged), knowledge about older adults (Facts on Aging), and behavioral intentions toward older adults (Behavioral Intentions in Relation to the Elderly) constituted the dependent variables. The experimental groups were high school students in Gerontology I and II classes. The control groups were high school students in Child Care I, Infant Care II, and General English I and II classes.

Both experimental and control groups were pretested on Form A and posttested on Form B of "My Attitudes Toward the Aged" (OP scale). Both experimental and control groups were pretested and posttested on the scale "Facts on Aging". The experimental groups were subjected to an additional measure, "Behavioral Intentions in Relation to the Elderly" at posttest time. Both experimental and control groups were surveyed at pretest and posttest time about certain personal and demographic data on the "General Information" form. Van Dalen (1973) identified this type of testing procedure as a nonrandomized control-group, pretest-posttest design.

Analysis of Data

Both experimental (Gerontology I&II) and control groups (Child Care I, Infant Care II, General English I&II) were compared on their performance at pretest and posttest.
time on the OP Scale (Form A&B) and Facts on Aging by the statistical method of ANOVA (analysis of variance). A Two Between-One Within-Subjects design with three repeated measures was employed (Kennedy, 1977). Refer to Table 17. The results of the analysis were checked for main and interaction effects that were significant at .05 alpha level. Significant effects were followed up by the appropriate post hoc procedures of independent t-tests and one-way analyses of variance.

The experimental groups (Gerontology I&II) were compared on their performance or test scores at posttest time on "Behavioral Intentions in Relation to the Elderly" by a simple one-way analysis of variance (Kennedy, 1977). The results were checked for main effect that was significant at .05 alpha level.

Pearson Product Movement Correlations (Guilford and Fruchter, 1973) determined the degree of relationship between scores on Form A and B of OP scale and pre and post "Facts on Aging" scales; Form B of OP scale (posttest) and "Behavioral Intentions in Relation to the Elderly"; and pre-post OP scale (Form A&B) and certain personal and demographic data identified at pretest and posttest times. The results were checked for significance at .05 alpha level on an F table.

Finally, the correlates between OP scale (Form A&B) and certain personal and demographic data at pre and
posttest times were squared to get Eta Squares and ranked in order of importance in their relationship to the OP scales.

Table 17
Diagram of Three Repeated Measures

<table>
<thead>
<tr>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
</tr>
<tr>
<td>B1 (Gerontology)</td>
</tr>
<tr>
<td>A1 (juniors)</td>
</tr>
<tr>
<td>A2 (seniors)</td>
</tr>
</tbody>
</table>

Null Hypotheses

All following Null Hypotheses are in reference to attitudes, knowledge and behavioral intentions of high school junior and senior students toward older adults.

ANOVA provided the procedure to accept or reject these Null Hypotheses:
H0₁: There is no statistically significant difference between treatment groups on measures of attitude and knowledge.

H0₂: There is no statistically significant difference between junior and senior students on attitude scores toward older adults as measured by the OP Scale and knowledge scores as measured by Facts on Aging.

H0₃: There is no statistically significant interaction between juniors and seniors and treatment groups on attitude and knowledge scores.

H0₄: There is no statistically significant interaction between scores on attitude and knowledge of pre-post test times.

H0₅: There is no statistically significant interaction between treatment groups and test times on attitude and knowledge scores.

H0₆: There is no statistically significant interaction of class (juniors and seniors) and test time on attitude and knowledge scores.

H0₇: There is no statistically significant interaction between treatment groups, class (juniors and seniors) and test times on attitude and knowledge scores.

H0₈: There is no statistically significant difference in attitude and knowledge scores of high school juniors enrolled in the gerontology program at pre-post test time.

H0₉: There is no statistically significant difference in attitude and knowledge scores of high school seniors enrolled in the gerontology program at pre-post test time.

H0₁₀: There is no statistically significant difference in attitude and knowledge scores of junior and senior gerontology classes at pretest time.

H0₁₁: There is no statistically significant difference in attitude and knowledge scores of junior and senior gerontology classes at posttest time.
$H_{0_{12}}$: There is no statistically significant difference in behavioral intention scores of junior and senior gerontology classes.

Relationships between certain variables were examined by using Pearson Product Moment Correlation (Guilford & Fruchter, 1973). These Null Hypotheses were tested:

$H_{0_{13}}$: There is no statistically significant relationship between the scores on attitude (OP Scale) and scores on knowledge (Facts on Aging) instruments.

$H_{0_{14}}$: There is no statistically significant relationship between the scores on attitude (OP Scale) and behavioral intention (Behavioral Intentions in Relation to the Elderly) instruments.

$H_{0_{15}}$: There is no statistically significant relationship between scores on attitude instrument (OP Scale) and socioeconomic level of student participants.

$H_{0_{16}}$: There is no statistically significant relationship between scores on the attitude measure (OP Scale) and student respondents' achievement level.

$H_{0_{17}}$: There is no statistically significant relationship between scores on attitude measure (OP Scale) and students' having a grandparent in the home.

$H_{0_{18}}$: There is no statistically significant relationship between scores on attitude measure (OP Scale) and student respondents' interacting in activities with older adults.

$H_{0_{19}}$: There is no statistically significant relationship between scores on attitude measure (OP Scale) and respondents' caring for sick older people.

$H_{0_{20}}$: There is no statistically significant relationship between scores on attitude measure (OP Scale) and respondents' liking older people.
H0.21: There is no statistically significant relationship between scores on attitude (OP Scale) and respondents' frequency of contact with older people.

H0.22: There is no statistically significant relationship between scores on attitude measure (OP Scale) and student respondents' amount of time spent with older adults.

H0.23: There is no statistically significant relationship between scores on attitude measure (OP Scale) and student respondents' number of associations with older adults.

Eta Squares were calculated on pre and posttest data to ascertain an ordering or sequence of association between certain personal and demographic variables. This null hypothesis was tested:

H0.24: There is no statistically significant ordering of association between scores on the attitude measure (OP Scale) and knowledge, achievement level, socioeconomic level, grandparent in home, interacting in activities with older adults, caring for sick older people, liking older people, frequency of contact with older adults, amount of time spent with older adults, and number of older adults with whom associated.

Summary

This chapter included the methodology of the study. Five areas were considered; Population and Sample, Treatment, Selection and Preparation of Instruments, Collection of Data, Design of Study and Analysis of Data.

The population of the study were mostly black female juniors and seniors in high school. They were enrolled in Gerontology I and II, Child Care I, Infant Care II, and
General English I and II. The respondents were classified as low and low average achievers. The majority of the respondents were economically disadvantaged. Generally, the groups were quite similar.

The treatment consisted of the experimental group (Gerontology I and II) receiving training in gerontology for one school year and the control groups (Child Care I, Infant Care II, and General English I and II) not receiving training in gerontology. The objectives of the Gerontology program are presented in the appendices.

Five instruments were used in this study. One was developed by this researcher to collect personal demographic data "General Information" and was attached to the attitude questionnaire (OP Scale or My Attitudes Toward the Aged). Form A was used at pretest time and Form B at posttest time. "Facts on Aging" was used to evaluate respondents' knowledge about older adults. This questionnaire was used as both pre and post test. The fifth instrument, a behavioral intention measure, "Behavioral Intentions in Relation to the Elderly" was used to evaluate behavioral intentions of Gerontology I and II at the post-test setting only. Copies of all evaluation instruments are in the appendices. Pretesting was completed in October, 1980 and posttesting in May, 1981 (eight months later).

This study used quasi-experimental, correlational and survey research procedures. A Two Between-One Within-
Subject Design with repeated measures was used to explore the effect of class (junior and senior) and treatment upon the scores of attitude and knowledge instruments at pre and post test settings. A one-way ANOVA was used to explore the effect of gerontology class (junior and senior) upon the scores of behavioral intention at posttest time. Relationships (correlations) were also explored between respondents' attitudes, knowledge, and behavioral intentions scores and respondents' survey of personal and demographic data. Correlations between pre OP (Form A) and personal and demographic data (General Information form) and post OP (Form B) and "General Information" were ranked by means of importance using Eta Squares.
Chapter IV, Results of the Study, is divided into five main sections. The first section is a summary of the overall total scores of high school students' attitudes toward older adults as measured by the pre and posttest scores on Attitudes Toward Old People (OP) Scale (Kogan, 1961) and knowledge about older adults as measured by pre and posttest scores on Facts on Aging Scale (Palmore, 1977). This section reveals findings in relation to hypotheses one through three. The high school students were analyzed by class (junior or senior) and by treatment (Gerontology, Child Care and General English).

Section two is a report of results related to the differential impact over time (eight months) of a high school vocational program in gerontology upon attitudes toward older adults and knowledge about older adults. This section reveals findings in relation to hypotheses four through eleven. Analysis of Variance (ANOVA) was performed on the pre and posttest scores of both the Kogan OP Scales (Form A and B) and the Palmore Facts on Aging Scale. Analysis of program effect involved a comparison of means over time and between treatments (Gerontology, Child Care
and General English) and class (junior and senior). Significance of program impact on each measure was determined by means of independent t-tests for the pre-post program groups.

The third section is a summary of findings from a scale, Behavioral Intentions in Relation to the Elderly (Robb, 1978). This scale was used to evaluate the attitude-behavioral intention relationship of gerontology students toward older adults (posttest setting only). This section reveals findings in relation to hypothesis twelve.

In section four relationships between measured variables are described (attitude/knowledge and attitude/behavioral intention). Also, relationships between selected personal and demographic variables and attitude are delineated. This section reveals findings in relation to hypotheses thirteen through twenty three. Pearson's Product Moment Correlations were used to test relationships between attitude/knowledge, attitude/behavioral intention and attitude/personal and demographic variables.

The final and fifth section ranks the personal and demographic variables in order of importance to attitude as measured by Kogan's Pre and Post OP Scale. This section reveals findings in relation to hypothesis twenty four. This procedure was calculated by means of Eta Squares.
Overall Total Scores of High School Students' Attitudes Toward Older Adults

ANOVA Table 18 presents the overall attitudes of high school students toward older adults as measured by the OP Scale. These data relate to Null Hypotheses one through seven. Statistics are presented in relation to main effects and interaction. Main effects include Treatment (Gerontology, Child Care, & General English), Class (junior & senior), and Time (pre-post). Interaction variables include Treatment and Class (TC), Time and Treatment (PT), Time and Class (PC) and Time, Treatment and Class (PTC). Level of significance is shown with .05 being the level for acceptance.

The first hypothesis related to difference between treatment groups (T) of Gerontology, Child Care and General English on attitudes toward older adults as measured by Total OP Scales' scores (Pre and Post combined). Means and standard deviations of attitudes toward older adults by treatment group are presented in Table 19. An examination of Table 19 revealed a small and insignificant difference between means and standard deviations of treatment groups on Total OP Scales. The differences from Total mean were Gerontology, -.3333; Child Care, -.2876; and General English .6212. The differences from Total standard deviation were Gerontology, -1.2238; Child Care, 2.0797; and General English, -.6526 (F=.06; p<.9392). See ANOVA Table 18. The
Table 18

ANOVA of Attitude Toward Older Adults on OP Scales by Treatment, Class and Time

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment (T)</td>
<td>2</td>
<td>7.81959</td>
<td>0.06</td>
<td>.9392</td>
</tr>
<tr>
<td>Class (C)</td>
<td>1</td>
<td>2.03958</td>
<td>0.03</td>
<td>.8569</td>
</tr>
<tr>
<td>Treatment X Class (TC)</td>
<td>2</td>
<td>106.80283</td>
<td>0.86</td>
<td>.4291</td>
</tr>
<tr>
<td>Subject error (S/TC)</td>
<td>60</td>
<td>3733.84083</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (P)</td>
<td>1</td>
<td>187.95582</td>
<td>8.12*</td>
<td>.0060</td>
</tr>
<tr>
<td>Time X Treatment (PT)</td>
<td>2</td>
<td>12.30604</td>
<td>0.27</td>
<td>.7675</td>
</tr>
<tr>
<td>Time X Class (PC)</td>
<td>1</td>
<td>2.48133</td>
<td>0.11</td>
<td>.7442</td>
</tr>
<tr>
<td>Time X Treatment X Class (PTC)</td>
<td>2</td>
<td>222.84133</td>
<td>4.18*</td>
<td>.0115</td>
</tr>
<tr>
<td>Subject error (SC/TC)</td>
<td>60</td>
<td>1388.76018</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p<.05
first null hypothesis failed to be rejected.

Table 19

Means and Standard Deviations of Attitudes
Toward Older Adults on Total OP Scales by Treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerontology</td>
<td>22</td>
<td>113.8182</td>
<td>9.6591</td>
</tr>
<tr>
<td>Child Care</td>
<td>22</td>
<td>113.8636</td>
<td>12.9626</td>
</tr>
<tr>
<td>General English</td>
<td>22</td>
<td>114.7727</td>
<td>10.2304</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>66</td>
<td>114.1515</td>
<td>10.8829</td>
</tr>
</tbody>
</table>

Scores range 1-170 when Pre and Post OP combined.

The second hypothesis related to difference between junior and senior high school students on attitude scores toward older adults as measured by Total OP Scales (Pre and Post combined). Means and standard deviations of attitudes toward older adults by class (C) are contained in Table 20. An examination of Table 20 revealed a small and insignificant difference between the means and standard deviations of Juniors and Seniors on Total OP Scales. The differences from the Total mean were Juniors, -.2626 and Seniors, .3153. The differences from the Total standard deviation were Juniors, .6479 and Seniors, -.6453 (F=.03; p<.3569. Refer
to ANOVA Table 18. The second null hypothesis failed to be rejected.

Table 20
Means and Standard Deviations of Attitudes Toward Older Adults on Total OP Scales by Class

<table>
<thead>
<tr>
<th>Class</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior</td>
<td>36</td>
<td>113.8889</td>
<td>11.5308</td>
</tr>
<tr>
<td>Senior</td>
<td>30</td>
<td>114.4667</td>
<td>10.2376</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>114.1515</td>
<td>10.8829</td>
</tr>
</tbody>
</table>

Scores range 1-170 when Pre and Post OP combined.

Hypothesis three was concerned with simple first-order interaction (TC) between treatments (T) of Gerontology, Child Care and General English and (C) the Junior and Senior class upon Total OP Scales' scores (pre and post combined). The overall means and standard deviations are included in Table 21. Study of Table 21 depicted small and insignificant differences in means and standard deviations of treatments and classes (TC) on Total OP Scales. Differences from the Total mean were Gerontology, -.33; Child Care, -.29; General English, .62; Juniors, -.26 and Seniors .32. Difference from Total standard deviation were Gerontology, -1.22; Child Care, 2.08; General English, -.65; Juniors, .65 and Seniors -.64 ($F = .86; p < .4291$). See
ANOVA Table 18. The third null hypothesis failed to be rejected.

Table 21
Mean and Standard Deviations of Attitudes Toward Older Adults on Total OP Scales by Treatment and Class (N=66; R=1.170)

<table>
<thead>
<tr>
<th></th>
<th>Juniors M</th>
<th>Juniors SD</th>
<th>Seniors M</th>
<th>Seniors SD</th>
<th>Overall M</th>
<th>Overall SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geron.</td>
<td>114.92</td>
<td>11.00</td>
<td>112.22</td>
<td>7.64</td>
<td>113.82</td>
<td>9.66</td>
</tr>
<tr>
<td>Child.</td>
<td>111.33</td>
<td>13.65</td>
<td>116.90</td>
<td>12.07</td>
<td>113.86</td>
<td>12.96</td>
</tr>
<tr>
<td>G. Eng.</td>
<td>115.45</td>
<td>10.16</td>
<td>114.09</td>
<td>10.75</td>
<td>114.77</td>
<td>10.23</td>
</tr>
<tr>
<td>Overall</td>
<td>113.89</td>
<td>11.53</td>
<td>114.47</td>
<td>10.24</td>
<td>114.15</td>
<td>10.88</td>
</tr>
</tbody>
</table>

 Differential Impact Over Time of a Vocational Program in Gerontology Upon High School Students' Attitudes Toward Older Adults

Hypothesis four referred to differences between scores on attitudes toward older adults as measured at pretest and posttest times by the OP Scales (Form A and B). Means and standard deviation scores of attitudes toward older adults by time (P) are contained in Table 22. Inspection of Table 22 showed a significant difference between means and standard deviations at pre and posttest times. The difference in means was 2.3333. The difference in standard deviation was .6192 (F=8.12; p<.006). Refer to ANOVA Table 18. Null hypothesis four failed to be accepted.
Table 22
Means and Standard Deviations
Of Attitudes Toward Older Adults on OP Scales by Time
(Range 1-85)

<table>
<thead>
<tr>
<th>Scale</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre OP</td>
<td>66</td>
<td>55.909</td>
<td>6.1837</td>
<td>8.12*</td>
<td>.0060</td>
</tr>
<tr>
<td>Post OP</td>
<td>66</td>
<td>58.242</td>
<td>6.8029</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>122</td>
<td>114.151</td>
<td>10.8829</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .01

Hypothesis five was concerned with interaction (PT) between pre and posttest time (P) and treatment (T) of Gerontology, Child Care, and General English upon OP Scales' scores. The means and standard deviations are compiled in Table 23. The interaction of class at pre and posttest time is depicted in Figure 8. Examination of Table 23 indicated small and insignificant differences in the means and standard deviations of treatments at pre and posttest times. The differences in means between treatments at pre and posttest times was Gerontology, 1.00; Child Care, 3.1364; and General English, 2.8637. The difference in standard deviations was Gerontology, .8396; Child Care, .0271; and General English, 1.1021 (F=.27; p<.7675). See ANOVA Table 18. Null hypothesis five failed to be rejected.
Table 23
Means and Standard Deviations of Attitudes Toward Older Adults on OP Scales by Time and Treatment (N=66; R=1-85)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N</th>
<th>Pre OP</th>
<th>Post OP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Geron.</td>
<td>22</td>
<td>56.4091</td>
<td>5.4218</td>
</tr>
<tr>
<td>Child C.</td>
<td>22</td>
<td>55.3636</td>
<td>7.3585</td>
</tr>
<tr>
<td>Gen. Eng.</td>
<td>22</td>
<td>55.9545</td>
<td>5.8511</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>55.9091</td>
<td>6.1837</td>
</tr>
</tbody>
</table>

The sixth hypothesis related to interaction (PC) between class (junior and senior) and pre or posttest time (C) on attitudes toward older adults as measured by OP Scales (Form A and B). The means and standard deviations are presented in Table 24 and Figure 9. Examination of the ANOVA Table 18 revealed no significant interaction between (PC) class and time (F=.11; p>.7442). The means and standard deviations (Table 24) were very similar. The junior class mean varied by 2.55 from pre to posttest time. The senior class mean varied by 2.07 points from pre to posttest time. See Figure 9. The difference in the standard deviation of the junior class at pre and posttest time was 1.1717. The difference in the standard deviation of the
Figure 8 Mean score interaction of Treatment and Time on the OP Scale (N=66; R=1-85)

Senior class was .0626. Null hypothesis six failed to be rejected.

Hypothesis seven was concerned with the interaction of time, treatment and class (PTC) on attitudes toward older adults as measured by OP Scales (Form A and B). Examination of ANOVA Table 18 revealed significant interaction between (PTC) time, treatment and class (F=4.18; p<.0015). Study of the means showed a scattering of scores.
Table 24

Means and Standard Deviations of Attitudes Toward Older Adults on Pre and Post OP Scales by Class
(N=66; R=1-85)

<table>
<thead>
<tr>
<th>Class</th>
<th>N</th>
<th>Pre OP M</th>
<th>Pre OP SD</th>
<th>Post OP M</th>
<th>Post OP SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior</td>
<td>36</td>
<td>55.6667</td>
<td>6.1226</td>
<td>58.2222</td>
<td>7.2943</td>
</tr>
<tr>
<td>Senior</td>
<td>30</td>
<td>56.2000</td>
<td>6.3485</td>
<td>58.2667</td>
<td>6.2859</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>55.9091</td>
<td>6.1837</td>
<td>58.2424</td>
<td>6.8029</td>
</tr>
</tbody>
</table>

Figure 9 Mean score interaction of Class and Time on OP Scales (N=66; R=1-85)
See Figure 10. The difference in means of OP scores at pre and posttest time by class and treatment was Junior Gerontology, -1.38; Senior Gerontology, 4.44; Junior Child Care, 6.33; Senior Child Care, -.70; Junior General English, 3.09; and Senior General English, 2.64. See Figure 11. The differences in standard deviations were Junior Gerontology, 2.9; Senior Gerontology, -1.99; Junior Child Care, 3.82; Senior Child Care, -2.91; Junior General English, -2.53;
and Senior General English, 4.69. Refer to Table 25. Further examination (post hoc) of this interaction was necessary.

![Bar chart showing mean score differences]

Figure 11  Mean score difference, attitudes toward older adults by Pre and Post OP scores and class

Independent t-tests were employed for each class within each treatment for pre-posttest difference. Significance was noted for Gerontology Seniors ($t=-2.53; p<.035$) and Child Care Juniors ($t=-4.54; p<.001$). Refer to Table 25.
Further post hoc analysis was necessary to establish whether significance occurred at pretest or posttest time.

Two separate ANOVA(s) were performed for main effects of (T) treatment and (C) class and the interaction of (TC) treatment and class for pretest and posttest times. The ANOVA for pretest time disclosed no significant main effect for (T) treatment ($F=.175; p<.840$) or (C) class ($F=.144;
p<.706. See Table 26. However, significant interaction (TC) between treatment and class was shown (F=4.296; p<.018). Refer to Table 26.

Three separate ANOVAs were then performed for classes (junior or senior) within treatments of Gerontology, Child Care and General English at pretest time. Marginal significance was noted between Gerontology juniors and seniors at pretest time (F=3.716; p<.0682). Significance was shown between Child Care juniors and seniors at pretest time (F=4.703; p<.0423). No significance was revealed between General English juniors and seniors at pretest time (F=.032; p<.8606). See Table 27.

Post hoc analysis was also performed on posttest data for hypothesis seven. A separate ANOVA on the interaction of (TC) treatment and class at posttest time revealed no significant main effect for (T) treatment (F=2.43; p<.785) or (C) class (F=.001; p<.981). Moreover, no significant (TC) treatment and class interaction was observed at posttest time (F=.207; p<.841). See Table 28.

From post hoc analysis significance was narrowed to include Gerontology seniors and Child Care juniors at pretest time only. Null hypothesis seven in relation to attitudes toward older adults failed to be accepted.
Table 26
Analysis of Variance on Pre OP Scale by Treatment and Class

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (T)</td>
<td>2</td>
<td>12.617</td>
<td>0.175</td>
<td>0.840</td>
</tr>
<tr>
<td>Class (C)</td>
<td>1</td>
<td>5.181</td>
<td>0.144</td>
<td>0.706</td>
</tr>
<tr>
<td>Treatment X Class (TC)</td>
<td>2</td>
<td>309.183</td>
<td>4.296*</td>
<td>0.018*</td>
</tr>
<tr>
<td>Subject error (S/TC)</td>
<td>60</td>
<td>2158.448</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>2485.448</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
Table 27
ANOVA of Pre OP Scale by Treatment and Class (R=1-85)

<table>
<thead>
<tr>
<th>Treatment &amp; Class</th>
<th>N</th>
<th>Pre OP M</th>
<th>SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geron. Jr.</td>
<td>13</td>
<td>58.1538</td>
<td>4.7932</td>
<td>3.716</td>
<td>.0682</td>
</tr>
<tr>
<td>Geron. Sr.</td>
<td>9</td>
<td>53.8889</td>
<td>5.5327</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child C. Jr.</td>
<td>12</td>
<td>52.5000</td>
<td>5.0722</td>
<td>4.703*</td>
<td>.0423*</td>
</tr>
<tr>
<td>Child C. Sr.</td>
<td>10</td>
<td>58.8000</td>
<td>8.4169</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Eng. Jr.</td>
<td>11</td>
<td>56.1818</td>
<td>7.4137</td>
<td>.032</td>
<td>.8606</td>
</tr>
<tr>
<td>G. Eng. Sr.</td>
<td>11</td>
<td>55.7273</td>
<td>4.1010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>55.9091</td>
<td>6.1837</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The eighth hypothesis related to the pre-post difference in the junior Gerontology students' attitudes toward older adults as measured on the OP scales. Means and standard deviations of junior Gerontology scores are contained in Table 29. An examination of Table 29 revealed a small and insignificant difference in the means (1.38) and standard deviations (2.9). Using a single t-test on test times, no significance was revealed (t=.76; p<.462). Null hypothesis eight failed to be rejected.
Table 28
Analysis of Variance on Post OP Scale by Treatment and Class

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (T)</td>
<td>2</td>
<td>24.027</td>
<td>0.243</td>
<td>0.785</td>
</tr>
<tr>
<td>Class (C)</td>
<td>1</td>
<td>0.029</td>
<td>0.001</td>
<td>0.981</td>
</tr>
<tr>
<td>Treatment X Class (TC)</td>
<td>2</td>
<td>20.461</td>
<td>0.207</td>
<td>0.814</td>
</tr>
<tr>
<td>Subject error (S/TC)</td>
<td>60</td>
<td>2963.594</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>3008.113</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The ninth hypothesis related to the pre-post difference in attitudes toward older adults of seniors in Gerontology as measured by the OP Scales. Means and standard deviations of the seniors in Gerontology are contained in Table 30. An examination of Table 30 showed a significant difference between means (4.44) and standard deviations (1.99) of Gerontology seniors at pre and posttest times. Using a single t-test on test time, significance was shown (t=2.53; p<.035). Null hypothesis nine failed to be accepted.

Table 30

Means and Standard Deviations for Seniors in Gerontology on OP Scales by Time

<table>
<thead>
<tr>
<th>Gerontology</th>
<th>Pre OP</th>
<th>Post OP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>Seniors</td>
<td>9</td>
<td>53.89</td>
</tr>
</tbody>
</table>

*p<.05
Hypothesis ten was concerned with the difference in attitudes toward older adults of juniors and seniors in Gerontology at pretest time on the OP Scale (Form A). Means and standard deviations of OP Scale scores are presented in Table 31. Study of Table 31 depicted marginal significant difference in means of 4.2649 between the junior and senior Gerontology classes. Using a simple analysis of variance between classes at pre OP test time revealed marginal significance (F=3.716; p<.0682) Null hypothesis ten failed to be rejected.

Table 31
Means and Standard Deviations for Juniors and Seniors in Gerontology on Pre OP Scale

<table>
<thead>
<tr>
<th>Gerontology</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juniors</td>
<td>13</td>
<td>58.1538</td>
<td>4.7932</td>
<td>3.716</td>
<td>.0632</td>
</tr>
<tr>
<td>Seniors</td>
<td>9</td>
<td>53.8889</td>
<td>5.5327</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>56.4091</td>
<td>5.1019</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis eleven explored the difference in attitudes toward older adults of juniors and seniors in Gerontology at posttest time on the OP Scale (Form B). Examination of Table 32 revealed no significant difference in means (1.5641) and standard deviations (4.1582) of juniors and seniors in
Gerontology on the Post OP Scale. Using a simple analysis of variance between classes at Post OP test time revealed no significant difference ($F = .321; p < .5772$). Null hypothesis eleven failed to be rejected.

Table 32

<table>
<thead>
<tr>
<th>Gerontology</th>
<th>N</th>
<th>M</th>
<th>Post OP SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juniors</td>
<td>13</td>
<td>56.7692</td>
<td>7.6937</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seniors</td>
<td>9</td>
<td>58.3333</td>
<td>3.5355</td>
<td>.321</td>
<td>.5772</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>57.4091</td>
<td>6.3652</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall Total Scores of High School Students' Knowledge About Older Adults

ANOVA Table 33 presents data for Null Hypotheses one through seven in relation to Facts on Aging scales. Statistics are presented in relation to main effects and interaction. Main effects include Treatment (Gerontology, Child Care & General English), Class (junior & senior), and Time (pre-post). Interaction variables include Treatment and Class (TC), Time and Treatment (PT), Time and Class (PC) and Time, Treatment, and Class (PTC).

The first hypothesis related to difference between treatment groups (T) of Gerontology, Child Care and
Table 33
ANOVA of Knowledge About Older Adults
on Facts on Aging Scale by Treatment, Class, and Time

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment (T)</td>
<td>2</td>
<td>199.18472</td>
<td>1.02</td>
<td>.3662</td>
</tr>
<tr>
<td>Class (C)</td>
<td>1</td>
<td>23.36409</td>
<td>0.24</td>
<td>.6262</td>
</tr>
<tr>
<td>Treatment X Class (TC)</td>
<td>2</td>
<td>107.93739</td>
<td>0.55</td>
<td>.5778</td>
</tr>
<tr>
<td>Subject error (S/TC)</td>
<td>60</td>
<td>5848.93209</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (P)</td>
<td>1</td>
<td>167.57853</td>
<td>2.25</td>
<td>.1390</td>
</tr>
<tr>
<td>Time X Treatment (PT)</td>
<td>2</td>
<td>166.77049</td>
<td>1.12</td>
<td>.3333</td>
</tr>
<tr>
<td>Time X Class (PC)</td>
<td>1</td>
<td>70.64128</td>
<td>0.95</td>
<td>.3341</td>
</tr>
<tr>
<td>Time X Treatment X Class (PTC)</td>
<td>2</td>
<td>931.06810</td>
<td>6.25*</td>
<td>.0034</td>
</tr>
<tr>
<td>Subject error (SC/TC)</td>
<td>60</td>
<td>4471.17669</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .01
General English on knowledge about older adults as measured by Total Facts on Aging Scales' scores (pre and posttest combined). Means and standard deviations of knowledge about older adults by treatment group are presented in Table 31. An examination of Table 34 revealed a small and insignificant difference between means and standard deviations of treatment groups on Total Facts on Aging Scales. The difference from Total mean was Gerontology, -2.8182; Child Care, -.1818 and General English, 3.0000. The difference from Total standard deviation were Gerontology, -.6155; Child Care, .2021 and General English, .4029 (F=1.02; p<.3362). See ANOVA Table 33. The first null hypothesis failed to be rejected.

Table 34

Means and Standard Deviations of Knowledge About Older Adults on Total Facts on Aging Scales by Treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerontology</td>
<td>22</td>
<td>101.1818</td>
<td>13.1607</td>
</tr>
<tr>
<td>Child Care</td>
<td>22</td>
<td>103.8182</td>
<td>13.9783</td>
</tr>
<tr>
<td>General English</td>
<td>22</td>
<td>107.0000</td>
<td>14.1791</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>104.0000</td>
<td>13.7762</td>
</tr>
</tbody>
</table>

Scores range 4-200 when Pre and Post Fact combined
The second hypothesis related to difference between junior and senior high school students on knowledge scores about older adults as measured by Total Facts on Aging Scales (pre and post combined). Means and standard deviations of knowledge about older adults by class (C) are contained in Table 35. Examination of Table 35 revealed a small and insignificant difference between the means and standard deviations of juniors and seniors on Total Facts on Aging Scales. The differences from Total mean were juniors, -.9444 and seniors, 1.1333. The differences from Total standard deviation were juniors, -.04 and seniors, .196 (F=.24; p<.6262). Refer to ANOVA Table 33. The second null hypothesis in relation to knowledge about older adults failed to be rejected.

Table 35
Means and Standard Deviations of Knowledge About Older Adults on Total Facts on Aging Scales by Class

<table>
<thead>
<tr>
<th>Class</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior</td>
<td>36</td>
<td>103.0556</td>
<td>13.7362</td>
</tr>
<tr>
<td>Senior</td>
<td>30</td>
<td>105.1333</td>
<td>13.9722</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>104.0000</td>
<td>13.7762</td>
</tr>
</tbody>
</table>

Scores range 4-200 when Pre and Post Fact combined
Hypothesis three was concerned with simple first-order interaction (TC) between treatments (T) of Gerontology, Child Care and General English and (C) the Junior and Senior class upon Total Facts on Aging Scales' scores (pre and post combined). The overall means and standard deviations are included in Table 36. Study of Table 36 depicted small and insignificant differences in means and standard deviations of treatments and classes (TC) on Total Facts on Aging Scales. Differences from the Total mean were Gerontology, -2.82; Child Care, -1.18; General English, 3.00; Juniors, -0.94; and Seniors, 1.13. The differences from Total standard deviation were Gerontology, -0.62; Child Care, -0.2; General English, 0.4; Juniors, -0.04; and Seniors, 0.19 (F=0.55; p<0.5778). Refer to ANOVA Table 33. The third null hypotheses in relation to knowledge about older adults failed to be rejected.

Differential Impact Over Time of a Vocational Program in Gerontology Upon High School Students' Knowledge About Older Adults

Hypothesis four referred to differences between scores on knowledge about older adults as measured at pretest and posttest times by the Facts on Aging Scales. Means and standard deviations of knowledge about older adults by time (P) are contained in Table 37. Inspection of Table 37 showed small and insignificant differences between means and standard deviations at pretest and posttest times. The
difference in means was -2.0606. The difference in standard deviations was -1.6322 (F=2.25; p<.1390). Refer to ANOVA Table 33. Null hypothesis four in relation to knowledge about older adults failed to be rejected.

Table 36

Means and Standard Deviations of Knowledge About Older Adults on Total Facts on Aging Scales by Treatment and Class (N=66; R=4-200)

<table>
<thead>
<tr>
<th></th>
<th>Juniors M</th>
<th>SD</th>
<th>Seniors M</th>
<th>SD</th>
<th>Overall M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geron.</td>
<td>102.31</td>
<td>15.14</td>
<td>99.56</td>
<td>10.28</td>
<td>101.18</td>
<td>13.16</td>
</tr>
<tr>
<td>Child.</td>
<td>101.00</td>
<td>12.78</td>
<td>107.20</td>
<td>15.27</td>
<td>103.82</td>
<td>13.98</td>
</tr>
<tr>
<td>G. Eng.</td>
<td>106.18</td>
<td>13.75</td>
<td>107.82</td>
<td>15.22</td>
<td>107.00</td>
<td>14.18</td>
</tr>
<tr>
<td>Overall</td>
<td>103.06</td>
<td>13.74</td>
<td>105.13</td>
<td>13.97</td>
<td>104.00</td>
<td>13.78</td>
</tr>
</tbody>
</table>

Hypothesis five was concerned with interaction (PT) between pretest and posttest time (P) and treatment (T) of Gerontology, Child Care and General English upon Facts on Aging Scales' scores. The means and standard deviations are compiled in Table 38. The interaction of class at pretest and posttest time is depicted in Figure 12. Examination of Table 38 indicated small and insignificant differences
in means and standard deviations of treatments at pretest and posttest times. The differences in means between treatments at pretest and posttest times were Gerontology, 1.9091; Child Care, -3.4546; and General English, -4.6364. The differences in standard deviations were Gerontology, .5392; Child Care, -.5808; and General English, -4.0947 (F=1.11; p<.3333). Refer to ANOVA Table 33. Null hypothesis five in relation to knowledge about older adults failed to be rejected.

Table 37

Means and Standard Deviations of Knowledge About Older Adults on Facts on Aging Scales by Time

<table>
<thead>
<tr>
<th>Scale</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Fact</td>
<td>66</td>
<td>53.0303</td>
<td>10.3553</td>
</tr>
<tr>
<td>Post Fact</td>
<td>66</td>
<td>50.9697</td>
<td>8.7230</td>
</tr>
<tr>
<td>Total</td>
<td>122</td>
<td>104.000</td>
<td>13.7762</td>
</tr>
</tbody>
</table>

Each Fact on Aging Scale has a Range of 4-100
Table 33

Means and Standard Deviations of Knowledge About Older Adults on Pre and Post Facts on Aging Scales by Time and Treatment (N=66; R=4-100)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N</th>
<th>Pre Fact</th>
<th></th>
<th>Post Fact</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Geron.</td>
<td>22</td>
<td>49.6364</td>
<td>9.3734</td>
<td>51.5455</td>
<td>9.9126</td>
</tr>
<tr>
<td>Child C.</td>
<td>22</td>
<td>53.6364</td>
<td>9.7128</td>
<td>50.1818</td>
<td>9.1320</td>
</tr>
<tr>
<td>Gen Eng.</td>
<td>22</td>
<td>55.8182</td>
<td>11.3626</td>
<td>51.1818</td>
<td>7.2679</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>53.0303</td>
<td>10.3552</td>
<td>50.9697</td>
<td>8.7230</td>
</tr>
</tbody>
</table>

The sixth hypothesis related to interaction (PC) between class (junior and senior) and pretest or posttest times (C) on knowledge about older adults as measured by Facts on Aging Scales. The means and standard deviations are presented in Table 39 and Figure 13. Examination of ANOVA Table 33 revealed no significant interaction between (PC) class and time (F=.95; p<.3341). The means and standard deviations were very similar. The junior class mean varied by -3.2778 points from pretest to posttest time. The senior class mean varied by -.6 points from pretest to posttest time. See Figure 13. The difference in standard deviation of the junior class at pretest and posttest time was -2.0928 points.
The difference in the standard deviation of the senior class at pretest and posttest time was -1.3353 points. Null hypothesis six in relation to knowledge about older adults failed to be rejected.

Figure 12 Mean score interaction of Treatment and Time on Facts on Aging Scales (N=66; R=4-100)
Table 39

Means and Standard Deviations of Knowledge
About Older Adults on Pre and Post Facts of Aging Scales by
Class (N=66; R=4-100)

<table>
<thead>
<tr>
<th>Class</th>
<th>N</th>
<th>Pre Fact M</th>
<th>Pre Fact SD</th>
<th>Post Fact M</th>
<th>Post Fact SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior</td>
<td>36</td>
<td>53.1667</td>
<td>10.1348</td>
<td>49.8889</td>
<td>8.0420</td>
</tr>
<tr>
<td>Senior</td>
<td>30</td>
<td>52.8667</td>
<td>10.7855</td>
<td>52.2667</td>
<td>9.4502</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>53.0303</td>
<td>10.3552</td>
<td>50.9697</td>
<td>8.7230</td>
</tr>
</tbody>
</table>

Hypothesis seven was concerned with the interaction of
time, treatment and class (PTC) on knowledge about older ad­
ults as measured by Facts on Aging Scales. Examination of
ANOVA Table 33 revealed significant interaction between (PTC)
time, treatment and class (F=6.25; p<.0034). Study of the
means showed a scattering of scores. See Table 39 and Figure
14. The difference in means of Facts on Aging scores at
pretest and posttest time by class and treatment was Junior
Gerontology, 6.93; Senior Gerontology, -5.33; Junior Child
Care, -8.31; Senior Child Care, 2.4; Junior General English,
-9.82; and Senior English, .54. See Figure 15. The dif­
ferences in standard deviations were Gerontology, -1.56;
Senior Gerontology, 2.23; Junior Child Care, -3.58; Senior Child Care, .34; Junior General English, .97; and Senior General English, -7.92. Refer to Table 40. Further examination (post hoc) of this interaction was necessary.

Independent t-tests were employed for each class within each treatment for pre-posttest difference. Significance was noted for Gerontology Juniors (t=-2.91; p<.013), Child Care Juniors (t=2.60; p<.025), and General English Juniors (t=3.79; p<.004). Refer to Table 40.
Figure 14  Mean score interaction of knowledge about older adults on Facts on Aging Scales by Treatment, Class, and Time (R=4-100)
Figure 15  Mean score difference, knowledge about older adults by Pre and Post Facts on Aging scores and class
Table 40
Post Hoc Time Difference
Analysis of Facts on Aging Scales within Each Class
(N=66; R=4-100)

<table>
<thead>
<tr>
<th>Treatment &amp; Class</th>
<th>N</th>
<th>Pre Fact M</th>
<th>SD</th>
<th>Post Fact M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geron.</td>
<td>22</td>
<td>49.64 9.37</td>
<td></td>
<td>51.55 9.91</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jr.</td>
<td>13</td>
<td>47.69 9.45</td>
<td></td>
<td>54.62 7.89</td>
<td>-2.91</td>
<td>.013</td>
<td></td>
</tr>
<tr>
<td>Sr.</td>
<td>9</td>
<td>52.44 9.04</td>
<td></td>
<td>47.11 11.27</td>
<td>.91</td>
<td>.391</td>
<td></td>
</tr>
<tr>
<td>Child C.</td>
<td>22</td>
<td>53.63 9.71</td>
<td></td>
<td>50.18 9.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jr.</td>
<td>12</td>
<td>54.67 10.07</td>
<td></td>
<td>46.33 6.49</td>
<td>2.60</td>
<td>.025</td>
<td></td>
</tr>
<tr>
<td>Sr.</td>
<td>10</td>
<td>52.40 9.67</td>
<td></td>
<td>54.80 9.99</td>
<td>-.61</td>
<td>.554</td>
<td></td>
</tr>
<tr>
<td>G. Eng.</td>
<td>22</td>
<td>55.82 11.36</td>
<td></td>
<td>51.18 7.27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jr.</td>
<td>11</td>
<td>58.00 8.58</td>
<td></td>
<td>48.18 7.61</td>
<td>3.79**</td>
<td>.004</td>
<td></td>
</tr>
<tr>
<td>Sr.</td>
<td>11</td>
<td>53.64 13.68</td>
<td></td>
<td>54.18 5.76</td>
<td>-.13</td>
<td>.903</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>53.03 10.36</td>
<td></td>
<td>50.97 8.72</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
**p < .01

Further post hoc analysis was necessary to establish whether significance occurred at pretest or posttest time. Two separate ANOVAs were performed for main effects of (T) treatment and (C) class and the interaction of (TC) treatment and class for pretest and posttest times. The ANOVA for pretest time disclosed no significant main effect
for (T) treatment (F=2.094; p<.132) or (C) class (F=.072; p<.789). In addition, no significance was noted for the interaction (TC) between treatment and class (F=1.171; p<.317). Refer to Table 41.

The posttest ANOVA disclosed insignificant findings for main effects of (T) treatment (F=1.80; p<.836) and (C) class (F=1.409; p<.240). However, significant interaction (TC) between treatment and class was shown (F=5.901; p<.005). Refer to Table 42.

Three separate ANOVAs were then performed for classes (junior or senior) within treatments of Gerontology, Child Care, and General English at posttest time. Marginal significance was noted between Gerontology juniors and seniors at posttest time (F=3.396; p<.0802). Significance was shown for Child Care juniors and seniors (F=5.749; p<.0264) and General English juniors and seniors (F=4.346; p<.0501) at posttest time. See Table 43.

From post hoc analysis significance was narrowed down to include Gerontology juniors, Child Care juniors and General English juniors at posttest time only. Null hypothesis seven in relation to knowledge about older adults failed to be accepted.
Table 41
ANOVA of Pre Facts on Aging Scale by Treatment and Class

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (T)</td>
<td>2</td>
<td>438.571</td>
<td>2.094</td>
<td>0.132</td>
</tr>
<tr>
<td>Class (C)</td>
<td>1</td>
<td>7.559</td>
<td>0.072</td>
<td>0.789</td>
</tr>
<tr>
<td>Treatment X Class (TC)</td>
<td>2</td>
<td>245.292</td>
<td>1.171</td>
<td>0.317</td>
</tr>
<tr>
<td>Subject error (S/TC)</td>
<td>60</td>
<td>6284.559</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>65</td>
<td>6969.895</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 42

ANOVA of Post Facts on Aging Scale
by Treatment and Class

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (T)</td>
<td>2</td>
<td>24.203</td>
<td>0.180</td>
<td>0.836</td>
</tr>
<tr>
<td>Class (C)</td>
<td>1</td>
<td>94.781</td>
<td>1.409</td>
<td>0.240</td>
</tr>
<tr>
<td>Treatment X Class (TC)</td>
<td>2</td>
<td>793.714</td>
<td>5.901*</td>
<td>0.005</td>
</tr>
<tr>
<td>Subject error (S/TC)</td>
<td>60</td>
<td>4035.460</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>4945.895</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.01
Table 43
ANOVA of Post Facts on Aging Scale by Class within Treatment (R=4-100)

<table>
<thead>
<tr>
<th>Treatment &amp; Class</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geron. Jr.</td>
<td>13</td>
<td>54.6154</td>
<td>7.8903</td>
<td>3.396</td>
<td>.0802</td>
</tr>
<tr>
<td>Geron. Sr.</td>
<td>9</td>
<td>47.1111</td>
<td>11.2744</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child C. Jr.</td>
<td>12</td>
<td>46.3333</td>
<td>6.4854</td>
<td>5.749*</td>
<td>.0264*</td>
</tr>
<tr>
<td>Child C. Sr.</td>
<td>10</td>
<td>54.8000</td>
<td>9.9867</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Eng. Jr.</td>
<td>11</td>
<td>48.1818</td>
<td>7.6134</td>
<td>4.346*</td>
<td>.0501*</td>
</tr>
<tr>
<td>G. Eng. Sr.</td>
<td>11</td>
<td>54.1818</td>
<td>5.7588</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>50.9697</td>
<td>8.7230</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

The eight hypothesis related to the pre-post difference in the Junior Gerontology students' knowledge about older adults as measured by the Facts on Aging Scales. Means and standard deviations of Junior Gerontology scores are contained in Table 44. An examination of Table 44 revealed a significant difference in the means (6.98) and standard deviations (-1.56). Using a single t-test on test times, significance was revealed (t=-2.91; p<.013). Null hypothesis eight failed to be accepted.
Table 44
Means and Standard Deviations for Juniors in Gerontology on Facts on Aging Scales by Time

<table>
<thead>
<tr>
<th>Gerontology</th>
<th>Pre Fact</th>
<th>Post Fact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N  M  SD</td>
<td>M  SD  t  p</td>
</tr>
<tr>
<td>Juniors</td>
<td>13 47.69 9.45</td>
<td>54.62 7.89 -2.91* .013</td>
</tr>
</tbody>
</table>

*p<.01

The ninth hypothesis related to the pre-post difference in knowledge about older adults of seniors in Gerontology as measured by the Facts on Aging Scales. Means and standard deviations of the seniors in Gerontology are contained in Table 45. Examination of Table 45 showed small and insignificant difference between means (-5.33) and standard deviations (2.23) of Gerontology seniors at pretest and posttest times. Using a single t-test on test time, insignificance was shown (t=.91; p<.391). Null hypothesis nine failed to be rejected.

Table 45
Means and Standard Deviations for Seniors in Gerontology on Facts on Aging Scales by Time

<table>
<thead>
<tr>
<th>Gerontology</th>
<th>Pre Fact</th>
<th>Post Fact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N  M  SD</td>
<td>M  SD  t  p</td>
</tr>
<tr>
<td>Seniors</td>
<td>9 52.44 9.04</td>
<td>47.11 11.27 .91 .391</td>
</tr>
</tbody>
</table>
Hypothesis ten was concerned with the difference in knowledge about older adults of both juniors and seniors in Gerontology at pretest time as measured by the Facts on Aging Scale. Means and standard deviations of Facts on Aging Scale are presented in Table 46. Study of Table 46 depicted a small and insignificant difference in means (4.7521) and standard deviations (.4031) between the junior and senior Gerontology classes. Using a simple analysis of variance between classes at pretest time revealed no significance (F=1.392; p<.2518). Null hypothesis ten in relation to knowledge about older adults failed to be rejected.

Table 46

Means and Standard Deviations for Juniors and Seniors in Gerontology on Pre Facts on Aging Scale

<table>
<thead>
<tr>
<th>Gerontology</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juniors</td>
<td>13</td>
<td>47.6923</td>
<td>9.4462</td>
<td>1.392</td>
<td>.2518</td>
</tr>
<tr>
<td>Seniors</td>
<td>9</td>
<td>52.4444</td>
<td>9.0431</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>49.6364</td>
<td>9.3734</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hypothesis eleven explored the difference in knowledge about older adults of juniors and seniors in Gerontology at posttest time as measured by the Facts on Aging Scale. Examination of Table 47 revealed minimal difference in means (7.5043) and standard deviations (3.3841) of juniors and seniors in Gerontology on the post Facts on Aging Scale. Using a simple analysis of variance between classes at posttest time revealed marginal significant difference (F=3.396; p<.0802). Null hypothesis eleven in relation to knowledge about older adults failed to be rejected.

Table 47

Means and Standard Deviations for Juniors and Seniors in Gerontology on Post Facts on Aging Scale

<table>
<thead>
<tr>
<th>Gerontology</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juniors</td>
<td>13</td>
<td>54.6154</td>
<td>.7.8903</td>
<td>3.396</td>
<td>.0802</td>
</tr>
<tr>
<td>Seniors</td>
<td>9</td>
<td>47.1111</td>
<td>11.2744</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>51.5455</td>
<td>9.3914</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The twelfth hypothesis related to difference between the junior and senior class in Gerontology on Behavioral Intentions in Relation to the Elderly Scale (Robb, 1977). This scale was administered to Gerontology students at posttest time only. Means and standard deviations of behavioral intentions in relation to older adults are depicted in Table 48. Inspection of Table 48 revealed differences of 29.3077 for juniors' mean score and 39.4444 points for seniors' mean score from a possible total test score of 225 points. Further inspection of Table 34 showed a small and insignificant difference between means (10.1367) and standard deviations (1.7726) of the junior and senior Gerontology classes on the scale Behavioral Intentions in Relation to the Elderly. The results were subjected to an analysis of variance between classes and disclosed no significant difference (F=1.388; p<.2526). Hypothesis twelve failed to be rejected.
Table 48

Means and Standard Deviations for Juniors and Seniors in Gerontology on the Behavioral Intentions in Relation to the Elderly Scale (R=1-225)

<table>
<thead>
<tr>
<th>Gerontology</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juniors</td>
<td>13</td>
<td>195.692</td>
<td>20.535</td>
<td>1.388</td>
<td>.2526</td>
</tr>
<tr>
<td>Seniors</td>
<td>9</td>
<td>185.555</td>
<td>18.762</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>191.545</td>
<td>20.025</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Relationships Between Variables:
Attitude/Knowledge, Attitude/Behavioral Intention and Attitude/Personal and Demographic

Hypothesis thirteen and fourteen referred to the relationships between the OP Scales (Form A and B) and Fact Scale and the OP Scale (Form B) and Behavioral Intention Scale. Data were subjected to Pearson Product Moment Correlation Analysis. Table 49 identifies the correlation coefficients and their significance. Study of Table 49 identified a marginal relationship (p<.086) between the Pre OP Scale and Fact Scale. Table 49 denoted no significant relationship between scores on the Post OP Scale and Fact Scale but a high significant correlation (p<.015) between the Post OP Scale and Behavioral Intention Scale. Hypothesis thirteen failed to be accepted at pretest time and failed to be rejected at posttest time. Hypothesis fourteen failed to be accepted.
Table 49
Correlation of Pre/Post Fact Scale and Behavioral Intention Scale with Pre/Post OP Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pre OP</th>
<th>Post OP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>N</td>
</tr>
<tr>
<td>Pre Fact</td>
<td>.147</td>
<td>66</td>
</tr>
<tr>
<td>Post Fact</td>
<td>.121</td>
<td>66</td>
</tr>
<tr>
<td>Behavioral Intention</td>
<td>.453</td>
<td>23</td>
</tr>
</tbody>
</table>

*p < .05

Hypotheses fifteen through twenty three dealt with the relationship of certain personal and demographic variables with the OP Scales (Form A and B) at pretest and posttest times. These variables included respondents' socioeconomic level, achievement level, grandparent(s) in home, interaction in activities with older adults, caring for sick older adults, liking older adults, frequency of contact with older adults, amount of time spent with older adults and number of associations with older adults. Data were subjected to Pearson Product Moment Correlation Analysis. Table 50 shows the correlation coefficients and significance for hypotheses fifteen through twenty three.

From examination of Table 50 socioeconomic level (r = .304; p < .013), frequency of contact (r = .284; p < .004) and amount of time spent with older adults (r = .214; p < .002) were found to
have significant relationship to the OP Scale (Form A) at pretest time. Grandparent(s) in the home ($r = .214; p < .041$) amount of time with older adults ($r = .323; p < .004$) and number of associations ($r = .275; p < .018$) were found to have significant relationship to OP Scale (Form B) at posttest time. Only one variable, amount of time with older adults showed significance with the OP Scales at both pretest and posttest times.

Several personal and demographic variables showed marginal significant correlations in Table 50. Activities with older adults were marginally significant ($r = .148; p < .084$) at pretest time with Form A of the OP Scale. Care of sick ($r = .194; p < .058$) and frequency of contact ($r = .185; p < .067$) were marginally significant at posttest time with Form B of the OP Scale. Only one variable, frequency of contact showed significance at pretest time and marginal significance at posttest time with the OP Scale.

Hypotheses fifteen and twenty-one failed to be accepted at pretest time and failed to be rejected at posttest time. Hypotheses seventeen and twenty-three failed to be rejected at pretest time and failed to be accepted at posttest time. Hypothesis twenty-two failed to be accepted at both pretest and posttest times. Hypotheses sixteen, eighteen, nineteen and twenty failed to be accepted at both pretest and posttest times.
Table 50

Pearson Product Movement Correlation of Different Variables by OP Scale Scores (N=66)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre OP r</th>
<th>Pre OP p</th>
<th>Post OP r</th>
<th>Post OP p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scioeconomic Level</td>
<td>.304</td>
<td>.013**</td>
<td>.034</td>
<td>.786</td>
</tr>
<tr>
<td>Achievement Level</td>
<td>.081</td>
<td>.517</td>
<td>.054</td>
<td>.669</td>
</tr>
<tr>
<td>Grandparent in Home</td>
<td>.069</td>
<td>.263</td>
<td>.214</td>
<td>.041*</td>
</tr>
<tr>
<td>Activities with Older Adults</td>
<td>.148</td>
<td>.084</td>
<td>.069</td>
<td>.290</td>
</tr>
<tr>
<td>Care of Sick Older Adults</td>
<td>.138</td>
<td>.100</td>
<td>.194</td>
<td>.058</td>
</tr>
<tr>
<td>Like Older Adults</td>
<td>.083</td>
<td>.222</td>
<td>.128</td>
<td>.151</td>
</tr>
<tr>
<td>Frequency of Contact (Often)</td>
<td>.284</td>
<td>.004**</td>
<td>.185</td>
<td>.067</td>
</tr>
<tr>
<td>Amount of Time with (Long)</td>
<td>.214</td>
<td>.002**</td>
<td>.323</td>
<td>.004**</td>
</tr>
<tr>
<td>Number of Associations (Many)</td>
<td>.107</td>
<td>.161</td>
<td>.257</td>
<td>.018*</td>
</tr>
</tbody>
</table>

*p<.05  
**p<.01  

This table includes data for hypotheses fifteen through twenty three.
Rank of Personal and Demographic Variables

Certain personal and demographic variables were correlated to OP Scales (Form A and B) at pretest and postest times. These correlations were then squared to get Eta Squares and ranked in order of importance in their relationship to OP Scales. Eta Squares for personal and demographic variables for OP Scale - Form A (pretest) are revealed in Table 51 and for OP Scale - Form B (posttest) in Table 52.

Table 51

Eta Squares in Rank Order for Personal Variables and Pre OP Scale (N=66)

<table>
<thead>
<tr>
<th>Variables</th>
<th>$r^2$</th>
<th>Pre OP</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socioeconomic Level</td>
<td>.093</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Frequency of Contact (Often)</td>
<td>.081</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Amount of Time with (Long)</td>
<td>.046</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Activities with Older Adults</td>
<td>.022</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Facts on Aging Scale (Knowledge)</td>
<td>.022</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Care for Sick Older Adults</td>
<td>.019</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Number of Associations (Many)</td>
<td>.012</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Achievement Level</td>
<td>.007</td>
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Table 51 Continued

<table>
<thead>
<tr>
<th>Variables</th>
<th>r²</th>
<th>Rank</th>
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</thead>
<tbody>
<tr>
<td>Like Older Adults</td>
<td>.007</td>
<td>7</td>
</tr>
<tr>
<td>Grandparent in Home</td>
<td>.005</td>
<td>8</td>
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</table>

Table 52

*Eta Square in Rank Order for Personal Variables and Post OP Scale (N=66)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>r²</th>
<th>Post OP</th>
<th>Rank</th>
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<tr>
<td>Amount of Time with (Long)</td>
<td>.104</td>
<td></td>
<td>1</td>
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<tr>
<td>Number of Associations (Many)</td>
<td>.066</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Grandparent in Home</td>
<td>.046</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Care of Sick Older Adults</td>
<td>.038</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Frequency of Contact (Often)</td>
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<td></td>
<td>5</td>
</tr>
<tr>
<td>Like Older Adults</td>
<td>.016</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Facts on Aging Scale (Knowledge)</td>
<td>.015</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Activities with Older Adults</td>
<td>.005</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Achievement Level</td>
<td>.003</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Socioeconomic Level</td>
<td>.001</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>
Results of the study were presented in this chapter. The first section reported the overall total scores of high school students' attitudes toward older adults as measured by pre and post scores on Attitudes Toward Old People (OP) Scale and knowledge about older adults as measured by pre and post scores on Facts on Aging Scale. Section two related differential impact over time of a high school vocational program in gerontology upon attitudes toward older adults and knowledge about older adults. The third section reported the relationship between attitude scores as measured by the OP Scale and behavioral intention as measured by Behavioral Intentions in Relation to the Elderly Scale. Section four reported relationships between attitude and knowledge; attitude and behavioral intention; and attitude and certain personal and demographic variables. The fifth and final section ranked by use of Eta Square; certain personal and demographic variables in order of importance to attitude scores. Refer to Table 53 for summary of statistical analysis of hypotheses. These statistical results will be discussed in Chapter five.
Table 53
Summary of Statistical Analysis of Hypotheses

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Attitude</th>
<th></th>
<th>Knowledge</th>
<th></th>
<th>Behavioral Int.</th>
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<tbody>
<tr>
<td></td>
<td>Accept</td>
<td>Reject</td>
<td>Accept</td>
<td>Reject</td>
<td>Accept</td>
<td>Reject</td>
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<tr>
<td>H1: Group difference</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>H2: Jr.-Sr. difference</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H3: Jr.-Sr. interaction</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>H4: Pre-post difference</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>H5: Group-test time interaction</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H6: Class-test time interaction</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H7: Group, class, test-time interaction</td>
<td>X</td>
<td></td>
<td>X</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>H8: Jr. difference, pre-post</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
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<td>H9: Sr. difference, pre-post</td>
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<td>H10: Jr.-Sr. difference, pretest</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>H11: Jr.-Sr. difference, posttest</td>
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<td>X</td>
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<td>H12: Gerontology Jr.-Sr. difference</td>
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<td></td>
<td></td>
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<td>X</td>
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<tr>
<td>Hypothesis</td>
<td>Attitude/ Knowledge</td>
<td>Attitude/ Beh. Int.</td>
<td>Attitude/ Personal &amp; Demo.</td>
<td>Rank Order - H&lt;sub&gt;24&lt;/sub&gt;</td>
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<td>---------------------</td>
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</tr>
<tr>
<td></td>
<td>Accept PR PO</td>
<td>Reject PR PO</td>
<td>Accept PO</td>
<td>Reject PO</td>
<td>Accept PR PO</td>
<td>Reject PR PO</td>
</tr>
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<td>H&lt;sub&gt;13&lt;/sub&gt;: Know.</td>
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<td>X</td>
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<tr>
<td>H&lt;sub&gt;15&lt;/sub&gt;: SES</td>
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<tr>
<td>H&lt;sub&gt;16&lt;/sub&gt;: Achiev.</td>
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<td>X</td>
<td>7</td>
<td>9</td>
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<tr>
<td>H&lt;sub&gt;17&lt;/sub&gt;: G.P.</td>
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<td>X</td>
<td>8</td>
<td>3</td>
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</tr>
<tr>
<td>H&lt;sub&gt;18&lt;/sub&gt;: Act. w/older</td>
<td>X(M)</td>
<td>X</td>
<td>4</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H&lt;sub&gt;19&lt;/sub&gt;: Care of older</td>
<td>X(M)</td>
<td>X</td>
<td>5</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H&lt;sub&gt;20&lt;/sub&gt;: Like older</td>
<td>X</td>
<td>X</td>
<td>7</td>
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<tr>
<td>H&lt;sub&gt;21&lt;/sub&gt;: Often-contact older</td>
<td>X</td>
<td></td>
<td>2</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H&lt;sub&gt;22&lt;/sub&gt;: Long-time older</td>
<td>X</td>
<td>X</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H&lt;sub&gt;23&lt;/sub&gt;: Many-assoc. older</td>
<td>X</td>
<td>X</td>
<td>6</td>
<td>2</td>
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</table>

M = Marginal relationship, slightly greater than p<.05
CHAPTER V
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS
"Output and Feedback"

Introduction

This study focused upon attitudes of adolescents toward older adults. Five purposes were identified: 1) To determine extent of disadvantaged adolescents' negative attitudes toward and low levels of knowledge about older adults. 2) To determine extent disadvantaged adolescents' attitudes toward and knowledge about older adults can be changed as a result of an educational intervention (gerontology job training program; "Queen City Program"). 3) To determine the extent disadvantaged adolescents hold negative behavioral intentions toward older adults. 4) To determine if relationships exist between disadvantaged adolescents' attitudes toward older adults and behavioral intentions, knowledge, and selected other personal and demographic variables. 5) To determine the importance of relationships between knowledge, behavioral intentions and selected other personal and demographic variables to disadvantaged adolescents' attitudes toward older adults.

Based upon the need for clarification of previous research findings, exploration of new factor relationships, and expansion of current data in the area of disadvantaged
adolescents' attitudes toward older adults, the three purposes were expanded into nine major objectives. Finally, these nine objectives were used to generate 24 hypotheses to expedite testing. The nine major objectives were:

1. Identification of the polarity of attitudes that high school juniors and seniors hold toward older adults and the amount of change that occurs in these attitudes during one school year.

2. Determination of the effect of a gerontology program upon high school juniors' and seniors' attitudes toward older adults.

3. Identification of the level of knowledge that high school juniors and seniors hold about older adults and the amount of change that occurs in this level of knowledge during one school year.

4. Determination of the effect of a gerontology program upon high school juniors' and seniors' level of knowledge about older adults.

5. Definition of the relationship of the attitudes of high school juniors and seniors toward older adults and their level of knowledge about older adults.

6. Identification of the level of behavioral intention that gerontology students hold toward older adults.

7. Definition of the relationship of gerontology juniors' and seniors' attitudes toward older adults and their behavior (behavioral intentions) toward older adults.

8. Identification of the relationship of attitudes toward older adults of high school juniors and seniors and their: 1) socioeconomic status; 2) achievement level; 3) contact with older adults (grandparent in home, activities with grandparents or other older adults, care of sick older person, liking older adults, amount of time spent, number with whom associated and frequency of contact).

9. Identification of importance of relationship of attitudes toward older adults of high school juniors and seniors and their: 1) socioeconomic status; 2) achievement level; 3) contact with older adults (grandparent in home, activities with grandparents or other older adults, care of sick older person,
liking older adults, amount of time spent, number with whom associated and frequency of contact).

This fifth and final chapter provides summary, conclusions and recommendations based on results obtained in relation to the study purposes and objectives. Recommendations are made for both current practice and future research.

Summary

Literature

Following are highlights of findings from the review of literature 1) Today's adolescents seemed to live in a technological society believing in the "here and now" with the future being uncertain and intergenerational ties being weak. 2) Disadvantaged adolescents seemed to acquire prejudice at early ages from the role models around them. 3) Attitudes were defined as learned predispositions to respond in a consistently favorable or unfavorable manner with respect to a given object. 4) Attitudes can be changed. 5) Attitudes relate to overt behavior. 6) Knowledge of an attitude permits prediction of behavioral intention when both the attitude and behavior are measured at the same level of generality. 7) Gerontology programs should consist of study and field experience (contact). Programs should include social policy, psychology and biology of aging, social environment, practical skills, philosophy and beliefs and research. 8) Quality care of older adults seems to
depend on positive attitudes toward older adults. 9) The relationships of certain variables to attitudes toward older adults are contradictory. These variables include age, socioeconomic level, females, amount and quality of contact with grandparents and other older adults, behavioral intentions and gerontology programs. 10) Gaining knowledge about older adults and completing more years of education or training seems to have a positive effect on attitudes toward older adults. 11) A geographical background of the inner city and being a service provider to older adults seems to produce negative attitudes toward older adults. 12) The relationship of achievement level to attitudes toward older adults needs research study.

Methodology and Procedures

The methodology of the study included five processes: 1) Selection of population and sample, 2) Treatment, selection and preparation of instruments, 3) Collection of data, 4) Design of study and 5) Analysis of data.

The population of the study was mostly black female juniors and seniors in high school. They were enrolled in Gerontology I and II, Child Care I, Infant Care II and General English I and II. The respondents were classified as low and low average achievers. The majority of the respondents were economically disadvantaged. Generally, the groups were quite similar.
The treatment consisted of the experimental group (Gerontology I and II) receiving training in gerontology for one school year and the control groups (Child Care I, Infant Care II, and General English I and II) not receiving training in gerontology.

Five instruments were used in this study. One was developed by this researcher to collect personal demographic data "General Information" and was attached to the attitude questionnaire (OP Scale or My Attitudes Toward the Aged). Form A of the OP Scale was used at pretest time and Form B at posttest time. "Facts on Aging" was used to evaluate respondents' knowledge about older adults. This questionnaire was used as both pre and posttest. The fifth instrument, a behavioral intention measure, "Behavioral Intentions in Relation to the Elderly" was used to evaluate behavioral intentions of Gerontology I and II at the posttest setting only. Pretesting was completed in October, 1980 and post-testing in May, 1981 (eight months later).

This study used quasi-experimental, correlational and survey research procedures. A Two Between-One Within-Subject Design with repeated measures was used to explore the effect of class (junior and senior) and treatment upon the scores of attitude and knowledge instruments at pre and post test settings. A one-way ANOVA was used to explore the effect of gerontology class (junior and senior) upon the scores of behavioral intention at posttest time.
Relationships (correlations) were explored also between respondents' attitudes, knowledge, and behavioral intentions scores and respondents' survey of personal and demographic data. Correlations between pre OP (Form A) and personal and demographic data (General Information form) and post OP (Form B) and "General Information" were ranked by means of importance to the attitude measure by using Eta squares.

**Results**

The results were summarized in five sections. These sections included:

1) **Overall Total Scores of High School Students' Attitudes Toward Older Adults and Knowledge About Older Adults**

No statistical significance was shown for overall total scores (pre + post combined) for total group, treatment (Gerontology, Child Care, General English), class (Junior, Senior), and class within treatment on attitude ($R=1-170$, $\bar{x}=114.15$, $F=.06$, $p<.9392$) and knowledge ($R=1-200$, $\bar{x}=104.00$, $F=1.02$, $p=.3362$) measures.

2) **Differential Impact Over Time of a Vocational Program in Gerontology Upon High School Students' (a) Attitudes Toward Older Adults and (b) Knowledge About Older Adults**

(a) Statistical significance was shown between scores on attitude at pretest and posttest time ($F=8.12; p<.006$). This difference was not in a particular treatment or class but within the interaction of treatment, class, and time. Gerontology Seniors ($R=1-85$, pre $\bar{x}=47.11$, post $\bar{x}=52.44$, $t=2.53$, $p<.035$) and Child Care Juniors ($R=1-85$, pre $\bar{x}=46.33$, $t=3.05$, $p<.003$).
post $\bar{X}=54.67, t=4.54, p=.001$) showed significant improvement over time. Significance was noted between Child Care Juniors ($R=1-85; \bar{X}=58.15$) and Seniors ($R=1-85; \bar{X}=53.89$) at pretest time ($F=3.716; p<.068$). Insignificant differences in scores were shown for General English (Juniors and Seniors) during these interactions.

(b) No statistical significant difference was shown between knowledge scores at pretest and posttest times. Nor was significant interaction noted between treatment and time and class and time. However, statistical significance was shown between treatment, class and time. Gerontology juniors significantly increased their scores from pretest to posttest time ($t=-2.91; p<.013$). Juniors in Child Care ($t=2.60; p<.025$) and General English ($t=3.79; p<.004$) significantly decreased their scores from pretest to posttest time. Significant difference in scores for Juniors and Seniors in Child Care ($F=5.748; p<.029$) and General English ($F=4.346; p<.050$) was shown at posttest time. Marginal difference was noted for Gerontology juniors and seniors at posttest time ($F=3.396; p<.080$).

3) Behavioral Intentions of Gerontology Students Toward Older Adults

Scores on behavioral intention measure were similar for both Juniors ($R=1-225, \bar{X}=195.69, SD=20.54$) and Seniors ($R=1-225, \bar{X}=185.56, SD=18.76$) in Gerontology at posttest time.
4) Relationship Between Variables: (a) Attitude/Knowledge, (b) Attitude/Behavioral Intention and (c) Attitude/Personal and Demographic Variables

(a) A marginal relationship ($r=.147; p<.086$) existed between pre OP Scale/Form A (attitude measure) and pre Fact Scale (knowledge measure). No significant relationship was detected between scores on post OP Scale/Form B (attitude measure) and post Fact Scale (knowledge measure).

(b) A significant relationship ($r=.453; p<.015$) existed between post OP Scale (attitude measure) and Behavioral Intentions in Relation to the Elderly.

(c) There were significant relationships between pre OP Scale (Form A) and socioeconomic level ($r=.304; p<.013$), frequency of contact ($r=.284; p<.004$), and amount of time with ($r=.214; p<.002$). Activities with older adults showed marginal relationship ($r=.148; p<.084$).

There were significant relationships between post OP Scale (Form B) and grandparent in the home ($r=.214; p<.041$), amount of time with ($r=.323; p<.004$), and number of associations ($r=.257; p<.018$). Frequency of contact ($r=.185; p<.067$) and care of sick older adults ($r=.194; p<.058$) showed marginal relationship.

(5) Rank of Personal and Demographic Variables

Variables were ranked in this order of importance to Pre OP Scale; Socioeconomic level, ($r^2=.093$) Frequency of contact, ($r^2=.081$) Amount of time with, ($r^2=.046$) Activities with older adults, ($r^2=.022$) Facts on Aging Scale, ($r^2=.002$)
Care for sick older adults, \( (r^2 = .019) \) Number of associations, \( (r^2 = .012) \) Like older adults, \( (r^2 = .007) \) and Grandparent in home \( (r^2 = .005) \).

Variables were ranked in this order of importance to Post OP Scale; Amount of time with, \( (r^2 = .104) \) Number of associations, \( (r^2 = .066) \) Grandparent in home, \( (r^2 = .046) \) Care of sick older adults, \( (r^2 = .038) \) Frequency of contact, \( (r^2 = .034) \) Like older adults, \( (r^2 = .016) \) Facts on Aging Scale, \( (r^2 = .015) \) Activities with older adults, \( (r^2 = .005) \) Achievement level, \( (r^2 = .003) \) and Socioeconomic level \( (r^2 = .001) \).

**Conclusions**

**Output**

**Literature**

The review of literature gives rise to the following conclusions.

1. Adolescents' attitudes (disadvantaged, inner city and female) toward older adults were more negative than positive.

2. Attitudes toward older adults were developed during childhood from role models and culture.

3. Prejudice exists against older adults (ageism) as early as four or five years of age.

4. The quality of interaction and/or relationships between young and old was questionable.

5. Attitudes can be changed in many ways.
   a. More years of education lessen stereotypes
about older adults.

b. Contact between groups and/or individuals in a non-competitive, voluntary, pleasant, rewarding and important manner change attitudes.

c. Group and/or laboratory participation change attitudes.

d. Level of information affects attitudes.

e. A combination of study about older adults and contact with older adults changes attitudes. Exceptions to this statement vary when contact was with sick older adults or when work with older adults precede study.

6. Many beliefs exist about the acquisition of knowledge and its relationship to attitudes.

a. Knowledge provides an information base that can be recalled and used for higher level functioning.

b. Higher level cognitive functioning such as raising hypotheses, conceptualizing of future, solving problems and anticipating consequences of an action are necessary for identity formation during later adolescence.

c. Low information people were vulnerable to the intrusion of counter-attitudinal facts and opinions.

d. Repetition, reinforcement and feedback of information in explicit, familiar, non-complicated and personal manner to less intelligent people change attitudes.

e. Information must be "unfrozen" or unlearned for new learning to take place.
7. The research available about the relationships between knowledge about older adults and attitudes toward older adults was limited in number and contradictory. Further study is necessary. The usefulness of the scale, "Facts on Aging" needs further investigation.

8. Objective evaluation of actual overt behavior is difficult.

9. Measurement of behavioral intentions was suggested as an alternative to measuring overt behavior because:
   a. verbal responses infer intentions to behave
   b. intentions to perform specific behaviors are regarded as determinants of those individual behaviors.

10. Existence of a relationship between attitudes toward older adults and behavioral intentions toward older adults was questionable.

11. Normative beliefs and motivation to comply influence behavioral intentions.

12. Simultaneous attitudes and behaviors of similar individuals, concerned with the same object, and the same activity at the same time, would be highly correlated.

13. The usefulness of the scale "Behavioral Intentions in Relation to the Elderly" needs further investigation.

14. Relationships between certain personal and demographic variables (social class, achievement level, contact with grandparent, quality of contact and length of association) and attitudes toward older adults were questionable.
Study

The findings of this study appear to support the drawing of the major conclusions which follow.

1. Although the scores were low (overall mean score = 67.14%), the female adolescent high school students who were disadvantaged and of low and low average achievement level in the inner city held more positive than negative attitudes toward older adults.

This conclusion was contrary to the majority of research about attitudes toward older adults and the rationale or reason for these attitudes. First, if this population's attitudes toward older adults were formed at an early age (Ammons; 1950) from culture (Holloran, 1967) and role models (Garry and Kingsley; 1970), then perhaps the culture and role models held more positive than negative attitudes toward older adults. Secondly, perhaps there was not a generation gap like Rice (1975) discussed and this population was capable of worthwhile relations with older adults as was felt by Mitchell (1977).

2. Certain classes within treatments increased their attitudes toward older adults throughout the school year.

a. Second year Gerontology course seemed to influence the development of more positive attitudes toward older adults for senior students.

This conclusion was consistent with past studies, where a combination of study about older adults and contact
with older adults was successful in changing attitudes about older adults. This conclusion did not lend support to the work of Finkelstein (1977), where work with sick older adults made attitudes toward older adults more negative. In the case of this population, a majority of the students worked daily with sick older adults.

Many psychological and educational variables may have affected the positive results obtained from this population. Perhaps an attitude change in a more positive direction was significant for Gerontology seniors because their contact with older adults at work was non-competitive, voluntary, pleasant, and rewarding (Amir 1969). Possibly, the class was presented information in an explicit, familiar, non-complicated and personal manner (Holloran; 1967). Per-chance, adequate repetition and reinforcement of information was given in class (Garry and Kingsley 1970).

b. First year Child Care course seemed to influence the development of more positive attitudes toward older adults for junior students (N=12).

Junior Child Care students learned transferable information and skills in their child care class and laboratory which applied to working with older adults. Perhaps they also possessed nurturance tendencies toward older adults (Kogan, 1961). This conclusion lent support to an initial fear in the study, prompting the selection of a second control group (General English).
3. This adolescent population (N=66) possessed low information (knowledge) levels about older adults (overall mean score = 52%).

Little information was available about knowledge levels about older adults. This conclusion was consistent with that of (Geiger; 1978) who found social workers, lawyers, and medical graduate students to have little knowledge of basic facts about older adults. Also, this conclusion supported several other researchers' opinions. First, achievement level affected ability to learn (Anastasi; 1976). This population consisted of approximately 75% low achievers and 25% low average achievers. Secondly, this population may have lacked ability to recall information to use in higher level cognitive processes, such as problem solving, questioning, planning for future and accepting consequences for actions (Gronlund, 1976; and Newman and Newman, 1979). Finally, this population may have been vulnerable to the intrusion of counter-attitudinal facts and opinions such as superstitions (Jones, Rambo, and Russel; 1978).

4. Certain classes within treatments significantly changed their knowledge levels about older adults during one school year.

a. First year Gerontology course seemed to influence the development of a higher level of knowledge about older adults for junior students (N=11).
b. First year Child Care and General English courses seemed to influence the development of a lower level of knowledge about older adults for junior students in Child Care (N=12) and General English (N=11).

Perhaps, two opinions of Schein and Bennis (1965) were true. First they felt that for new learning to take place information must be "unfrozen" or unlearned and then relearned in a different form. The Gerontology juniors were learning information in class that was evaluated by the "Facts on Aging Scale". Juniors in Child Care and General English were learning other information. Secondly, Schein and Bennis (1965) believed the laboratory to promote understanding when accompanied by emotional experience of the here and now. The juniors in Gerontology had such an experience with older adults in the senior center. The juniors in Child Care had experience with children and General English juniors had no laboratory at all.

5. Most students who had more positive attitudes toward older adults possessed more knowledge about older adults at the beginning of the school year (p=.086). After one school year, an opposite relationship existed. In most classes (except seniors in General English), the classes who had more positive attitudes toward older adults possessed less knowledge about older adults and vise versa. Other variables must have influenced attitudes toward older adults more than or in addition to knowledge. Knowledge
played a more important contribution to the attitude score at the beginning of the school year than at the end of the school year. Knowledge ranked fourth \((r^2 = .022)\) at beginning of school year and seventh \((r^2 = .015)\) at the end of school year in importance of contribution to the attitude score. Knowledge accounted for 2.2% at pretest time and 1.5% at posttest time of the variance in attitude scores.

Although limited information was available about the relationship between knowledge and attitudes, this study was inconsistent with respect to conclusions of Fishbein and Ajzen (1975) about attitudes in general and with Olmsted (1976) and Jones, et al. (1978). Knowledge in general or about older adults did not bolster attitudes toward older adults. This conclusion lent support to opinions of Seltzer (1977) and Holloran (1967) that perhaps, other variables such as the instructor or the learning situation, were more important to attitude formation than knowledge.

6. Both junior and senior Gerontology students possessed positive behavioral intentions toward older adults at posttest time. When these scores were converted to percentages, the juniors scored 86.97% and the seniors scored 82.47%. These scores were relatively high.

There were two conclusions with reference to this finding. First, since these students had positive behavioral intentions which serve as determinants of behavior (Fishbein and Ajzen; 1975) toward older adults, then perhaps
these determinants will produce positive behavior toward older adults. Secondly, perchance the scores on behavioral intention were higher than those of attitude because behavioral intention was based upon attitudes plus normative beliefs and individual motivation (Fishbein & Ajzen; 1978).

7. Gerontology students with more positive attitudes toward older adults also possessed more favorable behavioral intentions toward older adults.

Kogan (1979) believed a relationship existed between attitudes and behavioral intentions toward older adults. This conclusion verified his beliefs. In addition, this conclusion offered further evidence of a relationship between attitudes and behavioral intentions that Robb (1979) had discovered to be significant with only one group of baccalaureate nursing students. Finally, this conclusion substantiated the research of Fishbein and Ajzen (1978) which assumed a high correlation would be obtained between attitude and behavior, if the measurement was undertaken with similar students concerned with the same object and the same activity at the same time.

8. Only 6.8% of the sample population had grandparents in the home at the beginning of the school year and 6% at the end of the school year. Those students having a grandparent in the home did not have more positive attitudes toward older adults at the beginning of the school year. This situation was not the case at the end of the
school year. Those students who had grandparents in the home had more positive attitudes toward older adults \( (p=.041) \). This result was governed by the fact that grandparents lived in homes of students who had significantly become more positive toward older adults by the end of the school year.

Having a grandparent in the home contributed very little to attitude score at pretest time \( (r^2=.005) \); but ranked third \( (r^2=.046) \) at posttest time. Having a grandparent in the home contributed .05% at pretest time and 4.6% at posttest time of the variance in attitude scores.

This conclusion lent support to research of Heller and Walsh (1976) who found nursing students with previous work experience with older adults and close contact with a grandparent to hold positive attitudes toward older adults. The Gerontology junior and senior class had work contact with older adults. Both classes had more positive than negative attitudes toward older adults and the senior class had significantly increased its attitudes throughout the school year. This group had largest number of grandparents (4). Perhaps this combination of work with older adults and contact with grandparents caused an affect upon attitudes toward older adults by the end of the school year.

9. Most of the sample population who did activities with older adults held more positive attitudes toward older adults \( (p=.084) \) at the beginning of the year. Fewer students
(N=88) did activities with older adults at the beginning of the school year (Gerontology, 82.1%; Child Care, 77.8%; and General English, 63.6%). More students (N=66) did activities with older adults by the end of the school year with the exception of General English which stayed the same (Gerontology, 100%; and Child Care, 81.8%). The more people who did activities with older adults, the less effect it had on attitudes about older adults. Activities with older adults was ranked fourth ($r^2=.022$) in importance to contribution to the attitude score at pretest time and eighth ($r^2=.005$) at posttest time. Activities with older adults accounted for 2.2% at pretest time and .05% at posttest time of the difference in attitude scores.

10. Most of the sample population who cared for sick older adults held more positive attitudes toward older adults at the end of the school year ($p=.058$). Over half the students took care of sick older adults at the beginning of the year (59.1%) and at the end of the year (59.7%). Gerontology increased its care of the sick from 67.9% at the beginning of the year to 73.9% at the end of the year. Child Care dropped from 70.4% to 68.2% and General English from 42.4% to 36.4% in care of sick older adults. The Gerontology classes not only increased their care of sick older adults but maintained (Gerontology Juniors) or significantly increased (Gerontology Seniors) their positive
attitudes toward older adults by the end of the school year. Care of sick older adults ranked fifth \(r^2 = .019\) in importance to the contribution to the attitude scores at pre-test time and fourth \(r^2 = .038\) at posttest time. Care of sick older adults accounted for 1.9% at pretest time and 3.8% at posttest time of the variance in attitude scores.

This conclusion was contradictory to those of Finkelstein (1977) and Rosencranz and McNevin (1969). Contact with sick older adults or older adults in a hospital did not produce more negative attitudes toward older adults.

11. Most of the sample population had contact with older adults everyday or nearly everyday at the beginning of the school year (Gerontology, 67.9%; Child Care, 66.7%; and General English 48.5%) and at the end of the school year (Gerontology, 87%; Child Care, 40.9% and General English, 40.9%). The more often the sample population was with older adults, the more positive attitude they had for older adults at the beginning of the school year \(p = .004\) and at the end of the school year \(p = .067\). Frequency of contact (often) was ranked second \(r^2 = .081\) in importance to contribution of attitude scores at pretest time and fifth \(r^2 = .035\) at posttest time. More frequent contact with older adults accounted for 8.1% at pretest time and 3.5% at posttest time of the variance in attitude scores. No literature was available for citation about this variable.
12. More time spent with older adults at both the beginning of the study \((p=.002)\) and at the close of the study \((p=.004)\) produced more positive attitudes toward older adults. Only 10.2\% of the students spent zero hours with older adults at the pretesting and 4.5\% at the post-testing. Amount of time with (long) older adults ranked third \((r^2=.046)\) in importance to contribution to the attitude scores at pretest time and first \((r^2=.104)\) at posttest time. Amount of time with older adults accounted for 4.6\% at pretest time and 10.4\% at posttest time of the variance in attitude scores.

Little information was available in relation to length of time with older adults and attitude toward older adults. Although in this study only one group of students worked with older adults (Gerontology), this result contradicted data found by Robb (1979) where number of months working with older adults had no effect upon attitudes.

13. Number of associations with older adults was not related to attitudes toward older adults at the beginning of the study. Because students in the Gerontology program interacted as part of class with older adults and a few Child Care and General English students had associations in their free time, number of associations (many) did have a relationship to attitudes toward older adults at the end of the school year \((p=.018)\). The largest increases in
number of associations was for the five to 20 associations (Gerontology, pre=25% and post=43.5%) and the more than 20 associations (Child Care, pre=3.7% and post=13.6% and Gerontology, pre=3.6% and post=8.7%). Only 4.5% of the sample populations had no associations with older adults. Number of associations (many) ranked sixth ($r^2=.012$) in importance to contributions to attitude scores at pretest time and second ($r^2=.066$) at posttest time. No literature was available for citation about this variable. Number of associations accounted for 1.2% at pretest time and 6.6% at posttest time of the variance in attitude scores.

**Recommendations**

"Feedback"

The final purpose in the research process was to make recommendations to alter or improve an area or situation of concern not only for current practice but for future research endeavors. Recommendations in relation to attitudes and behavioral intentions toward older adults and knowledge about older adults will be presented in this section.

**Practice - Attitudes Toward Older Adults**

Although the attitudes toward older adults was more positive than negative for this sample population, there was need for improvement. Recommendations were made for improving attitudes toward older adults in general education, gerontology programs with emphasis on "Queen City
Program" and employers in agencies serving older adults.

A. General education:
   1) Involve students in gerontology and courses such as Child Care which provide services to people.
   2) Encourage contact with older adults in a working situation (paid or volunteer) for those students having a grandparent in the home.
   3) Encourage performance of meaningful activities with older adults.
   4) Encourage care of sick older adults.
   5) Encourage frequent, on-going contact with older adults.
   6) Encourage contact with numbers (5 to 20+) of older adults.

B. Gerontology Programs - "Queen City Program":
   1) Involve students with older adults in a non-competitive, voluntary, pleasant, and rewarding manner.
   2) Recruit students for programs who have grandparents in their homes.
   3) Make activities that are carried out in laboratory (senior center) or on the job have personal meaning for the student trainee.
   4) Incorporate increased contact with sick older adults (nursing homes) during the junior year in the senior center or laboratory.
   5) Place first year gerontology students on a job
(preferably paid) during summer between junior and senior year.

6) Bring a variety and number of older adults into the senior center or laboratory for first year gerontology students' work.

7) During the junior year, visit and have field experiences in a variety of facilities that work with older adults.

8) Encourage students at both levels to do volunteer work with older adults in various settings. Give recognition and reward through FHA-HERO Club as well as other co-curricular mechanism.

C. Employers in Agencies Serving Older Adults:

Employers hire many members from disadvantaged populations to provide services for older adults. These recommendations will not only improve attitudes toward older adults but promote success of workers and improve quality and quantity of work. In addition, these recommendations could be incorporated into a questionnaire for screening job applicants.

1) Select employees who have been involved in work with human services.

2) Select employees who have grandparents in the home and additional contact (work) with older adults.

3) Explain to employees the hows and whys of the activities that must be done with and for older adults.
Make the task have meaning to the employee.

4) Make job tasks non-competitive, as pleasant as possible and rewarding.

5) Encourage voluntary choice of jobs and extra work beyond paid duty.

6) Select employees who have had frequent pleasant experiences with older adults for longer periods of time.

Practice - Knowledge About Older Adults

This sample population exhibited an exceedingly low level of knowledge about older adults. Basic knowledge is necessary for higher level cognitive functioning. People must have basic knowledge about older adults for problem solving, questioning, planning and understanding consequences of actions with reference to personal aging and society aging. These recommendations were made:

1) Encourage the development of additional aging educational programs.

2) Select students and/or employees with a higher level of knowledge about older adults because they have a more positive attitude toward older adults.

3) Present to students and/or employees information in an explicit, familiar, personal and non-complicated manner.

4) Repeat and reinforce information frequently for retention of basic knowledge.
5) Explore additional methods and techniques to promote learning in the slower learner.

6) Review content of second year curriculum in "Queen City Program". Gerontology principles of the junior year (first year) should be repeated and related to the information taught about geriatrics in the senior year (second year).

Practice - Behavioral Intentions in Relation to the Elderly

Very positive behavioral intentions toward older adults were shown by this sample population (Gerontology only). A relationship was also denoted between positive attitudes and positive behavioral intentions in this group. These recommendations were made in reference to these conclusions:

1) Use measures of behavioral intention to determine attitudes toward older adults.

2) Select students and/or employees who have positive behavioral intentions toward older adults. They possess the determinants of positive behavior toward older adults. Hopefully, these students and/or employees with more positive behavior toward older adults will provide more quality services in a work situation.

3) Use measures of behavioral intent and attitude toward older adults to screen quality job or student applicants before accepting them into situations involving services to older adults.
These recommendations were made for further research:

1) Improve the reliability of attitude (OP Scale, Form A & B) by altering statements and further testing. The division of the equally matched positive and negative pairs did not reveal similar reliability. Perhaps response set bias is present in some of the statements.

2) Improve the reliability of knowledge measure (Facts on Aging) by altering statements and further testing. Investigate the construct validity to insure measurement of desired information.

3) Test further the behavioral intention measure as altered for geriatric aides with other groups and with other attitude measures. This will strengthen the attitude/behavioral intention relationship in gerontological research.

4) Investigate the relationship of personal and demographic variables and attitudes toward older adults as they relate to the specific treatment of gerontology. Insights would be gained into the variables that strengthen the gerontology program and services provided for older adults.

5) Improve the "General Information" form. Investigate the personal variable quality of contact (instead of liking older adults) and its relationship to attitudes toward older adults. Devise different degrees of quality for evaluating.
6) Relate positive attitudes toward older adults and positive behavioral intentions toward older adults to actual behavior on a job or in a training situation. Devise an instrument for observing overt behavior while performing job tasks. Correlate these scores to those of attitude and behavioral intention.

7) Explore attitudes toward older adults and behavioral intentions toward older adults as they relate to job success. Also, incorporate actual behavior into this evaluation. Devise an instrument to measure job success in a gerontological setting and correlate these scores to those of attitude, behavioral intention and overt behavior.

8) Investigate further the role knowledge plays in the total mental processes of successfully dealing and managing the aging of self and others. Use longitudinal studies with a valid and reliable knowledge instrument and more specific insight would be gained into the role knowledge plays in the mental process of dealing with aging of self and others.

9) When selecting a control group for gerontological research, do not select a group that provides services to people. Select control groups from areas like English, computer science and art.
10) Develop an instrument(s) to evaluate quality student and/or employee involvement with older adults. Define and measure such variables as non-competitive, voluntary, pleasant, rewarding and meaningful.

11) Evaluate the attitudes of older adults toward student service providers, employee service providers and older adults. Relate these attitudes to behavioral intention and overt behavior toward these groups. Interaction occurs between these groups. This interaction affects relationships and services provided.

12) Investigate other variables that might relate to attitudes toward older adults. Consider personality characteristics, such as nurturance, dominance, endurance, aggressiveness and autonomy. Explore environmental influences, such as, the family, instructor, and learning situation.
APPENDIX A

COURSE OUTLINE
SENIOR CENTER ACTIVITIES
GERIATRIC AIDE - TASK LIST
Course Outline (2 years)

A. The Individual, The Employee

1. The Individual
   a. Personality, needs, attitude and values
   b. Self-concept
   c. Decision making skills
   d. Leadership

2. The Employee
   a. Interpersonal relation skills
   b. Communication skills
   c. Job seeking skills
   d. Employee - Employer relationships
   e. The employee in Geriatrics and Gerontology

B. The employee in Geriatric and Gerontological Occupations

1. Types of living and care facilities for the elderly which offer employment

2. Types of educational and recreational facilities for the elderly which offer employment

3. Specific jobs in the field of Geriatrics and Gerontology
   a. Home Health Aide
   b. Geriatric Aide
   c. Licensed Practical Nurse
   d. Registered Nurse
   e. Occupational Therapist
   f. Occupational Therapeutic Aide
   g. Recreational Therapist
   h. Recreational Therapeutic Aide

4. The requirements of employer - employee relations in the fields of geriatrics and gerontology.

C. Introduction to Aging

1. The family life cycle
2. Characteristics of aging
3. Basic Needs of the elderly
4. Sociological Implications
5. Legislation
6. Agencies concerned with aging
D. Psychology of Aging

1. Types of development and maintenance (Physical, social, emotional, intellectual)
2. Role Changes
3. Personality
4. Adjustment to change (health, money, transportation, loneliness, death, etc.)
5. Self-image

E. Health of the Elderly in Recreational and Care Facilities

1. Safety
2. Cleanliness and Hygiene
3. Nutrition

F. Illnesses and Disabilities of Aging

1. Nervous deterioration
   a. vision
   b. hearing
   c. coordinative deficiencies
2. Mental deterioration and confusion
3. Mental Impairments
4. Malignancies
5. Circulatory Impairments
6. Cardiac disorders
7. Respiratory disease
8. Orthopedic disabilities
9. Diabetes
10. Elimination problems

G. The Senior Citizen Center

1. Why Senior Centers For The Aging?
2. The Purpose of The Senior Center
3. Sponsorship, Funding, and Planning for The Senior Center
4. Programming for the Senior Center
   a. Activities
   b. Floor Plan
   c. Equipment (needs, use, care)
   d. Safety
   e. Budget
   f. Evaluation
5. Obtaining and Maintaining Center Membership

6. Staffing the Center
   a. Specialists or Teachers
   b. Coordinators
   c. Involving members as staff
   d. Human Relations

H. The Care of the Elderly in the Nursing Home (2nd year)
1. The Nursing Home
2. Meeting the common needs of the patient in a care facility
3. Words, abbreviations and measurements used in Geriatrics Care
4. Housekeeping duties (procedures, safety, cleanliness)
5. Physical Therapy
   a. Range of Motion (R. O. M.)
   b. Activities of Daily Living (A. D. L.)
   c. Occupational and Recreational Therapy
6. Reality Orientation
7. Adaptive Equipment
8. Patient Observation
9. Patient Treatments
   a. Taking Vital Signs
   b. Taking Blood pressure
   c. Measuring fluid intake and output
   d. Applying an elastic bandage
   e. Applying heat and cold
   f. Changing a dressing
   g. Putting on an arm sling
   h. Applying binders and restraints
   i. Giving a backrub
10. Patient Positioning and Transfer
11. Bed Making
   a. closed bed
   b. open bed
   c. occupied bed
12. Patient skin care
13. Patient bathing and grooming
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<td>Rug Hooking</td>
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SUGGESTED LIST OF MINI AND MAXI LAB ACTIVITIES (Continued)

Socials
Bingo
Coffee hour
Card parties
All occasion parties
Speaker
Films
Birthday Party (monthly)

Adaptive Living Skills
Problem solving
Communication
Human Relations
Family Relations
Nutrition (basic 4, vitamins, minerals)
Death
Hygiene
Health
Reality therapy
Meal planning
Safety
Special diets

Physical Recreation
Dancing
Exercise Programs
Table Tennis
Pool
Walks
Relays
Shuffleboard
Bowling
Other games
The aide should be able to perform satisfactorily the tasks listed below. Please check the tasks at date of completion.

1. **Employability Skills (general)**
   - A. Arrives to work on time (punctual)
   - B. Uses time wisely
   - C. Cooperates with employer
   - D. Cooperates with staff
   - E. Cooperates with clients
   - F. Makes wise decisions
   - G. Exhibits a pleasant personality
   - H. Follows agency rules and regulations (calling in, dress, etc.)
   - I. Shows flexibility
   - J. Assumes responsibility and follows through on assignments
   - K. Demonstrates a receptive and positive attitude
   - L. Shows a sense of loyalty to the agency
   - M. Demonstrates dependability
   - N. Respects the rights of clients
   - O. Develops patience with disabled, handicapped, and emotionally disturbed.
   - P. Works satisfactorily one-on-one with a client
   - Q. Works satisfactorily with small groups (3-5)
### Tasks of the Geriatric Aide

**Dates:**

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**R.** Works satisfactorily with larger groups (6+)

**S.** Demonstrates a sensitivity and awareness of others

**T.** Does not use vulgarity in speech or action

2. **Performs housekeeping duties** (table washing, setting, etc.)

3. Plans individual activities

4. Implements individual activities

5. Evaluates individual activities

6. Plans small group activities

7. Implements small group activities

8. Evaluates small group activities

9. Plans large group activities

10. Implements large group activities

11. Evaluates large group activities

12. Makes examples or samples of projects

13. **Periodically has a self evaluation with work supervisor**

14. **Observe and Assist**

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**A.** Elementary foot care

**B.** TPR

**C.** BP

**D.** Assessing physical change in clients

**E.** Diabetic class
### Tasks of the Geriatric Aide

#### DATES:

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**F.** Good grooming class

**G.** ADL

**H.** Reality orientation

**I.** Exercise (ROM) class

**J.**

**K.**

**L.**

**M.**

**N.**

15. **Other Tasks**

<p>| | | | | |</p>
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**A.**

**B.**

**C.**

**D.**
HEALTH CARE:

The aide should be able to perform satisfactorily or demonstrate the tasks listed below.

Please check the tasks at date of completion.

DATES:

Employability Skills

1. ______ ______ ______   A. Arrives to work on time
   ______ ______ ______   B. Uses time wisely
   ______ ______ ______   C. Cooperates with employer
   ______ ______ ______   D. Cooperates with staff
   ______ ______ ______   E. Makes wise decisions
   ______ ______ ______   F. Exhibits a pleasant personality
   ______ ______ ______   G. Follows directions
   ______ ______ ______   H. Follows agency rules and regulations

2. ______ ______ ______   Has good rapport with geriatric patients

3. ______ ______ ______   Use safety principles

4. ______ ______ ______   Perform a bed scrub

5. ______ ______ ______   Make a closed and occupied bed

6. ______ ______ ______   Move and lift objects

7. ______ ______ ______   Wash hands

8. ______ ______ ______   Assist patients at mealtime

9. ______ ______ ______   Assist patients in dressing and undressing

10. ______ ______ ______   Assist ambulatory patients

11. ______ ______ ______   Care for patients hair

12. ______ ______ ______   Give a bed, tub and shower bath
TASKS OF THE GERIATRIC AIDE

DATES:

13.___ ___ ___ ___ Assist patients into wheelchairs
14.___ ___ ___ ___ Assist patients with other adaptive equipment
15.___ ___ ___ ___ Give and remove bed pan
16.___ ___ ___ ___ Give and remove urinal
17.___ ___ ___ ___ Help patients with bowel and bladder control
18.___ ___ ___ ___ Give back care to patients
19.___ ___ ___ ___ Give enema
20.___ ___ ___ ___ Give foot care
21.___ ___ ___ ___ Give mouth care (oral hygiene)
22.___ ___ ___ ___ Measure intake and output
23.___ ___ ___ ___ Move patient into correct body alignment
24.___ ___ ___ ___ Record patient care
25.___ ___ ___ ___ Take blood pressure
26.___ ___ ___ ___ Take temperature (oral, axillary, rectal)
27.___ ___ ___ ___ Take radial pulse
28.___ ___ ___ ___ Take respiration
29.___ ___ ___ ___ Observe and report patients physical change
30.___ ___ ___ ___ Perform general housekeeping duties
31.___ ___ ___ ___ Perform physical therapeutic activities with patients (ROM-ADL)
32.___ ___ ___ ___ Use reality orientation with patients
33. Assist and care for patients with different disabilities

a. strokes
b. arthritis
c. diabetes
d. cardiac problems
e. respiratory problems
f. hearing loss
g. vision loss
h. fractures
i. dying
j. death
k. decubitus ulcers
l. mental problems
m. mental retardation
APPENDIX B

GENERAL INFORMATION FORM
MY ATTITUDES TOWARD THE AGED (OP SCALE) FORM A AND B

217
<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>Birth Date</td>
<td>Age</td>
</tr>
<tr>
<td>Class</td>
<td>Grade</td>
</tr>
<tr>
<td>Sex</td>
<td>Race</td>
</tr>
</tbody>
</table>

1. Do you have one or more grandparents living in your home? 
   
2. Do you talk and do activities with one or more of your grandparents? 
   
3. Have you ever taken care of aged sick people? 
   
4. Have you ever helped elderly people with activities? 
   
5. Do you like elderly people? 
   
6. How often do you meet and talk with elderly people? 
   Mark an X in one of the boxes below to show your answer. 
   
   - Everyday or nearly everyday
   - At least once a week
   - At least once a month
   - At least once a year
   - Never

7. How long do you meet and talk with elderly people? 
   Mark an X in one of the boxes below to show your answer. 
   
   - 0 hours or less
   - 1/2 hour or less
   - 1 hour
   - 2 hours
   - 3 hours or more

8. With how many elderly people do you meet and talk? 
   Mark an X in one of the boxes below to show your answer. 
   
   - More than 20 people
   - 5 to 20 people
   - 3 to 4 people
   - 1 or 2 people
   - No people

TURN TO THE NEXT PAGE. WAIT FOR INSTRUCTIONS.
**MY ATTITUDES TOWARD THE AGED**

There are no right or wrong answers to the statements listed below. We want to know how you feel and what you believe about the aged. Your feelings and beliefs help us to plan better and more meaningful programs for students.

I will read each statement and give you time to circle your answer. Place a circle around (SA) if you strongly agree, around (A) if you agree, around (U) if you are undecided, around (D) if you disagree and around (SD) if you strongly disagree.

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>It would probably be better if most old people lived in residential units that also housed younger people.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>2</td>
<td>Most old people are really no different than anybody else: they're as easy to understand as younger people.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>3</td>
<td>It is not enjoyable to be around elderly people.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>4</td>
<td>Most old people get set in their ways and unable to change.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>5</td>
<td>Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anyone.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>6</td>
<td>Most old people are unfriendly.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>7</td>
<td>Most old people can be counted on to maintain a clean, attractive home.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>8</td>
<td>It is foolish to claim that wisdom comes with old age.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>9</td>
<td>Most elderly people are helpful.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>10</td>
<td>Old people should have more power in business and politics.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>11</td>
<td>Most old people make one feel ill at ease.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
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<tr>
<td>12</td>
<td>Elderly people are trustworthy.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
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</tbody>
</table>
13. Most old people bore others with their insistence on talking about the "good old days."

14. Most old people tend to keep to themselves and give advice only when needed.

15. Most old people are understanding.

16. If old people expect to be liked, their first step is to try to get rid of their irritating faults.

17. In order to maintain a nice residential neighborhood, it would be best if too many old people did not live in it.

18. Most elderly people are unhappy.

19. There are a few exceptions, but in general most old people are pretty much alike.

20. Most old people seem to be neat and clean in their personal appearance.

21. There are a lot of dumb old people.

22. Most old people are cheerful, agreeable, and good humored.

23. Most old people are constantly complaining about the behavior of the younger generation.

24. Elderly people are important.

25. Most old people need no more love and reassurance than anyone else.
MY ATTITUDES TOWARD THE AGED

There are no right and wrong answers to the statements listed below. We want to know how you feel and what you believe about the aged. Your feelings and beliefs help us to plan better and more meaningful programs for students.

I will read each statement and give you time to circle your answer. Place a circle around (SA) if you strongly agree, around (A) if you agree, around (U) if you are undecided, around (D) if you disagree and around (SD) if you strongly disagree.

1. It would probably be better if most old people lived in residential units with people of their own age.

2. There is something different about most old people: it's hard to figure out what makes them tick.

3. It is enjoyable to be around elderly people.

4. Most old people are capable of new adjustments when the situation demands it.

5. Most old people would prefer to quit work as soon as pensions or their children can support them.

6. Most old people are friendly.

7. Most old people tend to let their homes become shabby and unattractive.

8. People grow wiser with the coming of old age.

9. Most elderly people are not helpful.

10. Old people have too much power in business and politics.

11. Most old people are relaxing to be with.

12. Most old people are not trustworthy.
13. One of the most interesting and entertaining qualities of most old people is their accounts of their past experiences.

14. Most old people spend too much time prying into the affairs of others and giving unsought advice.

15. Most aged people are not understanding.

16. When you think about it, old people have the same faults as anyone else.

17. You can count on finding a nice residential neighborhood when there is a sizeable number of old people living in it.

18. Most elderly people are happy.

19. It is evident that most old people are different from each other.

20. Most old people should be more concerned with their personal appearance; they're too untidy.

21. Most old people are smart.

22. Most old people are irritable, grouchy, and unpleasant.

23. One seldom hears old people complaining about the behavior of the younger generation.

24. Elderly people are not important.

25. Most old people make excessive demands for love and reassurance.
Scoring:

Form A - Pretest

The favorable statements are numbers: 1, 2, 5, 7, 10, 14, 22, 25.
The unfavorable statements are numbers: 4, 9, 11, 13, 16, 17, 19, 20.
The filler statements are numbers: 3, 6, 9, 12, 15, 13, 21, 24.

Form B - Posttest

The favorable statements are numbers: 4, 9, 11, 13, 16, 17, 19, 21.
The unfavorable statements are numbers: 1, 2, 5, 7, 10, 14, 20, 22, 25.
The filler statements are numbers: 3, 6, 9, 12, 15, 13, 21, 24.

If a statement is favorable toward the aged:

SA = 5
A = 4
U = 3
D = 2
SD = 1

If a statement is not favorable toward the aged:

SA = 1
A = 2
U = 3
D = 4
SD = 5

Interpretation:

The students receiving the higher scores have more positive attitudes toward the aged.
The students receiving the lower scores have more negative attitudes toward the aged.
FACTS ON AGING

The statements listed below will tell us what facts you know about aging. Your knowledge of facts about aging helps us plan better and more meaningful programs for students.

I will read each statement and give you time to circle your answer. Place a circle around \textcolor{red}{T} if the statement is True and around \textcolor{blue}{F} if the statement is False.

1. The majority of old people (past age 65) are senile (defective memory, disoriented, or demented).

2. All five senses seem to decline in old age.

3. Most old people have no interest in, or capacity for, sexual relations.

4. Lung capacity tends to decline in old age.

5. The majority of the old people feel miserable most of the time.

6. Physical strength tends to decline in old age.

7. At least one-tenth of the aged are living in long-stay institutions (Nursing homes, mental hospitals, home for the aged, etc.).

8. Aged drivers have fewer accidents per person than drivers under age 65.

9. Most older workers can not work as effectively as younger workers.

10. About 80\% of the aged are healthy enough to carry out their normal activities.

11. Most old people are set in their ways and unable to change.

12. Old people usually take longer to learn something new.

13. It is almost impossible for most old people to learn new things.

14. The reaction time of most old people tends to be slower than the reaction time of younger people.

15. In general, most old people are pretty much alike.
16. The majority of old people are seldom bored.
17. The majority of old people are socially isolated and lonely.
18. Older workers have fewer accidents than younger workers.
19. Over 15% of the U. S. population are now age 65 or over.
20. Most medical practitioners tend to give low priority to the aged.
21. The majority of older people have incomes below the poverty level (as defined by the Federal Government).
22. The majority of old people are working or would like to have some kind of work to do (including housework and volunteer work).
23. Older people tend to become more religious as they age.
24. The majority of old people are seldom irritated or angry.
25. The health and socioeconomic status of older people (compared to younger people) in the year 2000 will probably be about the same as now.
Scoring:

All the odd numbered items are false and all the even numbered are true.

Every question has a four point value with 25 questions equal to 100 points and/or 100 percent. The higher the score, the more knowledge students have about older adults. The lower the score, the less knowledge students have about older adults.
APPENDIX D

REVISIONS AND QUESTIONNAIRE
BEHAVIORAL INTENTIONS IN RELATION TO THE ELDERLY
Revisions: Behavioral Intentions in Relation to the Elderly

These item changes were made to the original instrument by a panel of experts:

#1. Talks was substituted for reminisces.

#5. Her was added with his.

#6. Original: Ignore elderly people who call out "nurse" or "help" if busy with nursing care activities.

Revised: Ignore elderly people who call for "help" if busy with other activities.

#10. Original: Decrease the size of a decubitus ulcer in an elderly person.

Revised: Assist in the treatment to decrease the size or heal a decubitus ulcer (bed sore) of an elderly patient.

#11. Original: Give elderly people non-prescribed medications.

Revised: Give elderly people foods they are not permitted to have.

#14. Original: Provide an elderly person who has visual impairment with a source of sensory stimulation (talking books, radio, braille devices, etc. for sensory stimulation.

Revised: Provide an elderly person who has visual impairment with talking books, radio, braille devices, etc. for sensory stimulation.
Revisions Cont:

#20  Original:
Report a medication error involving an elderly person.
Revised:
Report any errors in care involving an elderly person.

#21. Original:
Document nursing care problems in writing to present to agency administrators.
Revised:
Document any problems with clients in writing to present to agency supervisor or administrator.

#23. Original:
Review the immunization status of an elderly person to learn if it is current (tetanus, polio, measles, etc).
Revised:
If possible with supervisor's permission and assistance review the case history (personal records) of an elderly person to learn about his/her individual needs (physical, mental, social, and emotional).

#24. Original:
Participate in a conference with nursing staff of institution to plan nursing care for an elderly person.
Revised:
Participate in a conference with nursing and/or recreational staff of institution to plan services for an elderly person.

#28. Original:
Miss clinical experience with elderly to catch up on studies or housework.
Revised:
Miss laboratory experience with elderly to catch up on studies or housework.
Revisions Cont.

#29. Original:
Use sterile dressing technique when changing dressings on open wounds in elderly people.

Revised:
Use sterile techniques when caring for elderly people.

#30. Original:
Spend time in the nurses' station when direct nursing care is needed.

Revised:
Avoid contact with clients who have mental problems or incontinence.

#40. Original:
Initiate a conference with nursing staff of institution to plan nursing care for an elderly person.

Revised:
Initiate a conference with staff of institution to plan a program for an elderly person.

#42. Original:
Advocate changes needed to improve care of elderly persons even if job is at stake.

Revised:
Advocate changes needed to improve care of elderly even if it means loosing your job.

#44. Original:
Continuing the same response format, when you graduate from college as a nurse, how likely are you to:

Revised:
When you graduate from high school, how likely are you to:
BEHAVIORAL INTENTIONS IN RELATION TO THE ELDERLY

INSTRUCTIONS: Beside each of the following behavioral acts a geriatric aide might perform while interacting with the elderly, indicate how likely you believe you are to perform the act while interacting with elderly clients in the future by circling your answer. I will read each statement and give you time to circle your answer. Place a circle around (VL) if you are Very Likely to perform, around (L) if you are Likely to perform, around (U) if you are Undecided, around (UL) if you are Unlikely to perform, and around (VUL) if you are Very Unlikely to perform such an act or behavior toward the elderly in the future. Answer all statements. Do not leave any statement blank.

EXAMPLE:
Shove an elderly person if he/she moves too slowly.

1. Listen as an elderly person talks about the past without interrupting. VL L U UL VUL
2. Put an item valued by an elderly person within his/her reach. VL L U UL VUL
3. Dress an elderly person in his/her personal clothing. VL L U UL VUL
4. Listen as an elderly person expresses views about dying and death. VL L U UL VUL
5. Rearrange an elderly person's possessions without his/her knowledge.  

6. Ignore elderly people who call for "help" if busy with other activities.  

7. Tell an elderly person he/she is too old to be thinking about sex.  

8. Assist an elderly person to make a telephone call.  

9. Tell an elderly person that telephone calls to relatives are not permitted.  

10. Assist in the treatment to decrease the size or heal a decubitus ulcer (bed sore) of an elderly patient.  

11. Give elderly people foods they are not permitted to have.  

12. Avoid feeding an elderly person unable to feed him/herself.  

13. Change the position of an elderly person to rotate pressure points.  

14. Provide an elderly person who has visual impairment with talking books, radio, braille device, etc. for sensory stimulation.  

15. Pull away from the touch of an elderly person.
16. Provide an elderly person with a clock, calendar, newspaper or weather thermometer.

17. Take a coffee break with an elderly person.

18. Position an elderly person where she/he may look out the window.

19. Avoid talking with very physically dependent elderly people.


21. Document any problems with clients in writing to present to agency supervisor or administrator.

22. Understand the rights of elderly patients according to the American Hospital Association "Patients' Bill of Rights", 1972 and observe these rights as you work with the elderly.

23. If possible, with supervisors permission and assistance review the case history (personal records) of an elderly person to learn about her/his individual needs (physical, mental, social, and emotional).

24. Participate in a conference with nursing and/or recreational staff of institution to plan services for an elderly person.

25. Compliment a member of the agency staff (co-worker) on care given to an elderly person.
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<td>26.</td>
<td>Tell a member of the agency staff (co-worker) how he/she might improve care given to an elderly person.</td>
<td>VL</td>
<td>L</td>
<td>U</td>
</tr>
<tr>
<td>27.</td>
<td>Visit an elderly person in an institution during &quot;off duty&quot; time.</td>
<td>VL</td>
<td>L</td>
<td>U</td>
</tr>
<tr>
<td>28.</td>
<td>Miss laboratory experience with elderly people to catch up on studies or housework.</td>
<td>VL</td>
<td>L</td>
<td>U</td>
</tr>
<tr>
<td>29.</td>
<td>Use sterile techniques when caring for elderly people.</td>
<td>VL</td>
<td>L</td>
<td>U</td>
</tr>
<tr>
<td>30.</td>
<td>Avoid contact with clients who have mental problems or incontinence.</td>
<td>VL</td>
<td>L</td>
<td>U</td>
</tr>
<tr>
<td>31.</td>
<td>Actively assist an elderly person to commit suicide if she/he desires to do so.</td>
<td>VL</td>
<td>L</td>
<td>U</td>
</tr>
<tr>
<td>32.</td>
<td>Join an organization whose purpose is to promote the well-being of old persons.</td>
<td>VL</td>
<td>L</td>
<td>U</td>
</tr>
<tr>
<td>33.</td>
<td>Write a legislator to express support for legislation which would benefit the elderly.</td>
<td>VL</td>
<td>L</td>
<td>U</td>
</tr>
<tr>
<td>34.</td>
<td>Donate money in support of an organization or cause seeking to improve the well-being of the elderly.</td>
<td>VL</td>
<td>L</td>
<td>U</td>
</tr>
<tr>
<td>35.</td>
<td>If the decision is yours to make, let an elderly family member live in your home.</td>
<td>VL</td>
<td>L</td>
<td>U</td>
</tr>
<tr>
<td>36.</td>
<td>Increase frequency and length of breaks (away from elderly people) as time worked in a geriatric institution increases.</td>
<td>VL</td>
<td>L</td>
<td>U</td>
</tr>
</tbody>
</table>
37. Let incontinent people wait 30 minutes before changing to dry clothing as a behavior modification technique.

38. Don't intervene to prevent an older person's committing suicide if she/he desires to do so.

39. If free to do so, marry an elderly person in poor health.

40. Initiate a conference with staff of institution to plan a program for an elderly person.

41. Visit an elderly person in an institution during "off duty" time.

42. Advocate changes needed to improve care of elderly persons even if it means losing your job.

43. Show impatience with an elderly person crossing the street slowly in front of your car.

When you graduate from high school, how likely are you to:

44. Work with patients in the age range of elderly (65-75 years)?

45. Take courses in geriatrics or gerontology?
Scoring:

The negative items are numbers: 5, 6, 7, 9, 11, 12, 15, 19, 28, 30, 31, 36, 37, 38, 39, and 43.

The positive items are numbers: 1, 2, 3, 4, 8, 10, 13, 14, 16, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 29, 32, 33, 34, 35, 40, 41, 42, 44, and 45.

If an item is negative toward the elderly;
\[ VL = 1 \]
\[ L = 2 \]
\[ U = 3 \]
\[ UL = 4 \]
\[ VUL = 5 \]

If an item is positive toward the elderly;
\[ VL = 5 \]
\[ L = 4 \]
\[ U = 3 \]
\[ UL = 2 \]
\[ VUL = 1 \]

Interpretation:

The students receiving the higher scores have more favorable behavioral intentions toward the elderly.

The students receiving the lower scores have more unfavorable behavioral intentions toward the elderly.
APPENDIX E

LETTERS TO PARENTS
STUDENTS' CONSENT FORM
September 22, 1980

Dear Parent:

Several vocational classes at Queen City-Taft have been selected to take part in some important research about attitudes toward the elderly for The Ohio State University. The results of the research will be used to make our vocational programs better serve the needs of our students and the community.

The Ohio State University requires that each parent sign a permission form before a student can participate in the study.

If you have any questions, please feel free to call the Geriatrics department at 381-6521.

Please sign the attached form for your child and return it immediately.

Sincerely,

Emily T. Spicer
Principal

ETS/pj
October 9, 1980

Dear Parent:

Several English classes at Queen City-Taft have been selected to take part in some important research about attitudes toward the elderly for The Ohio State University. The results of the research will be used to make our vocational programs better serve the needs of our students and the community.

The Ohio State University requires that each parent sign a permission form before a student can participate in the study.

If you have any questions, please feel free to call the Geriatrics department at 381-6521.

Please sign the attached form for your child and return it immediately.

Sincerely,

Emily T. Spicer
Principal
CONSENT FOR PARTICIPATION IN
SOCIAL AND BEHAVIORAL RESEARCH

I consent to participating in (or my child's participation in) a study
entitled ________________________________________________________
A Study Of The Effect Of Related Instruction And Laboratory Instruction
In Gerontology Upon High School Vocational Students

(Investigator/Project Director or his/her authorized representative)
explained the purpose of the study and procedures to be followed. Possible
benefits of the study have been described as have alternative procedures, if
such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional in-
formation regarding the study and that any questions I have raised have been
answered to my full satisfaction. Further, I understand that I am (my child
is) free to withdraw consent at any time and to discontinue participation in
the study without prejudice to me (my child). The information obtained from
me (my child) will remain confidential and anonymous unless I specifically
agree otherwise.

Finally, I acknowledge that I have read and fully understand the consent
form. I have signed it freely and voluntarily and understand a copy is avail-
able upon request.

Date: __________________________ Signed: __________________________
(Participant)

___________________________ __________________________
(Investigator/Project Director or (Person Authorized to Consent
Authorized Representative) for Participant - If Required)

PA-027 (2/79) — To be used only in connection with social and behavioral re-
search for which an OSU Human Subject Review Committee has determined
that the research poses no risk to participants.
APPENDIX F
FORMS FOR APPROVAL OF STUDY
RESEARCH APPLICATION FORM
CINCINNATI PUBLIC SCHOOLS
230 East Ninth Street
Cincinnati, Ohio 45202

Date Submitted: September 22, 1980
Code Number: __________

Name of Applicant: Kathryn (Pat) Doerman
Position: Graduate student
Home Address: 6127 Werk Road, Cincinnati, Ohio 45211
Member of Cincinnati Public Schools staff: Yes X No

Institution: The Ohio State University
Degree Sought: Ph. D., Voc. Ed.
Grant in Aid from: Vocational Education Personnel Development Act
Advisor, Project Director or Chairman: Dr. Dewey Adams
The National Center for Vocational Education Telephone: 614-486-3655

RESPOND TO ITEMS DIRECTLY, DO NOT REFER TO ATTACHMENTS

Project Title: Attitudes Toward The Aged: A Study Of The Effect Of Related Instruction And Laboratory Instruction In Gerontology Upon High School Vocational Students

Brief Summary of Purposes of Project:
The purpose of the study is to see if students' attitudes become more positive toward the aged from their gerontology class work. Positive attitudes toward the aged are necessary for successful employment in the field of gerontology.

Prospective Benefit to Cincinnati Schools:
1. The study can be used to demonstrate program accountability to the community and city, state, and federal government.
2. The study can be used for program evaluation.

Other Reasons for Choosing this Area of Study:
1. The field of gerontology is rapidly growing. Quality programs need to be developed. This program could offer a good example and become a benefit to society (the elderly, employers, employees, and institutions).
2. Under the direction of Vera Ramsetty, I developed and implemented the gerontology program at Queen City Vocational Center (1978-80). I am interested in its outcome.

OVER
Hypotheses to be Tested:
There will be no difference in attitudes toward the aged between gerontology and child development students.

Instruments to be Used (attach four copies of each):
OP Scale (Old People); Nathan Kogan Ph.D., 1961

Procedures (include statistical treatment):

A randomized control-group Pretest-Posttest design will be used. Analysis of variance will be the statistical method used for analyzing the data.

School(s): List type of school(s) and/or name(s), if appropriate.
Queen City Vocational Center — Taft High School

Number of Persons Involved: 4 Teachers 60 Pupils (Specify)
Estimated Time Required by Each Teacher 1 hour Pupils 1 hour
Starting Date September 24, 1980 Expected completion date June, 1981

Assurances:
I hereby agree to conduct this project using the procedures and instruments described above and in accordance with the Cincinnati Public Schools' policies regarding research. Progress and final reports will be supplied as specified in the policy.

Applicant's Signature

Send to: Chairman, Program Research
Program Evaluation Branch
Cincinnati Public Schools
230 East Ninth Street
Cincinnati, Ohio 45202
**PLEASE TYPE**

REVIEW OF RESEARCH, DEVELOPMENT, OR
RELATED ACTIVITIES INVOLVING HUMAN SUBJECTS

PROTOCOL NO. __________________________

SUMMARY SHEET

(USE CONTINUATION PAGES AS NECESSARY)

PRINCIPAL INVESTIGATOR(S):  
Dr. Dewey Adams  
Typed Name  
Signature

Patricia Alloy Neerman  
Typed Name  
Signature

Vocational Technical Education

(Department & College)

20 W. Woodruff, 160 Ramseyer, 422-5037 or 486-3655

(Faculty Member’s Campus Address and Phone Number)

WHEN SUBMITTING A PROPOSAL TO THE BEHAVIORAL AND SOCIAL SCIENCES HUMAN SUBJECTS REVIEW COMMITTEE, WE WOULD APPRECIATE YOUR SUPPLYING THE FOLLOWING INFORMATION IN SUMARY FORM. HAVING THESE DETAILS PRIOR TO READING AND REVIEWING THE PROTOCOL CAN EXPEDITE THE PROCESS. PLEASE BE AS SPECIFIC AS POSSIBLE SUCH THAT THE READER CAN HAVE A RATHER COMPLETE AND ACCurate IDEA OF EXACTLY WHAT YOUR SUBJECTS WILL EXPERIENCE WHEN THEY PARTICIPATE IN YOUR RESEARCH, AS WELL AS KNOW THE PROTECTIONS THAT HAVE BEEN INCLUDED TO SAFEGUARD THE SUBJECT AGAINST ADVERSE CONSEQUENCES (E.G., ARE THEY FREE TO NOT PARTICIPATE IF THEY CHOOSE, DO THEY OR THEIR PARENTS KNOW EXACTLY WHAT THEY ARE GETTING INTO BEFORE THEY ARE COMMITTED TO PARTICIPATE, WILL BOTH THEIR PARTICIPATION AND ANY COLLECTED DATA BE COMPLETELY CONFIDENTIAL).

1) IN A SENTENCE OR TWO, BRIEFLY DESCRIBE WHY THE PROPOSED PROJECT IS OF INTEREST. THE INTENT OF THIS QUESTION IS TO GIVE THE REVIEWER A BRIEF IDEA OF THE BACKGROUND AND PURPOSE OF THE RESEARCH.

The purpose of the study is to see if students' attitudes become more positive toward older adults from their gerontology class work. Positive attitudes toward older adults are necessary for successful employment in the field of gerontology. The results will be useful in developing better gerontology programs.

2) BRIEFLY DESCRIBE EACH OF THE DIFFERENT CONDITIONS OR MANIPULATIONS TO BE INCLUDED WITHIN THE STUDY.

Three groups of students (Gerontology, Child Care & English with two different levels - juniors & seniors in high school) will be investigated for their attitudes and knowledge about older adults. The Gerontology classes will study aging for 1½ hours daily. The Gerontology juniors will interact daily (3 hours) with older adults in a senior citizen center laboratory in the vocational center. The Gerontology seniors will have on the job training (3 hours) daily at different institutions which house older adults. The Child Care and English students will be used as the control groups. The English students were added because they were not from the vocational center but the high school across the street.

3) WHAT IS THE NATURE OF THE MEASURES OR OBSERVATIONS THAT WILL BE TAKEN IN THE STUDY?

All three sets of groups will be pretested and posttested on Kogan's Attitudes Toward Old People Scale and Palmore's Facts on Aging. In addition, the Gerontology groups will be administered Robb's Behavioral Intentions In Relation To The Elderly at posttest time.

4) IF ANY QUESTIONNAIRES, TESTS, OR OTHER INSTRUMENTS ARE TO BE USED, PLEASE PROVIDE A BRIEF DESCRIPTION AND EITHER INCLUDE A COPY OR INDICATE APPROXIMATELY WHEN A COPY WILL BE SUBMITTED TO THE COMMITTEE FOR REVIEW.

Form HS-008A (9/80)
5) Will the subjects encounter the possibility of either psychological, social, physical or legal risk?  
   □ yes  □ no  If so, please describe.

6) Will any stress be involved in the study?  □ yes  □ no  If so, please describe.

7) Will the subjects be deceived or misled in any way?  □ yes  □ no  If so, please describe and include a statement regarding the nature of the debriefing.

8) Will there be any probing for information which an individual might consider to be personal or sensitive?  □ yes  □ no  If so, please describe.

9) Will the subjects be presented with materials which they might consider to be offensive, threatening or degrading?  □ yes  □ no  If so, please describe.

   be most helpful in planning better programs not only for them and their school but for other schools and programs.

10) Approximately how much time will be demanded of each subject?  
    The study will require about 1½ hours time from 6 teachers and approximately 90 students.

11) Who will be the subjects in this study? How will the subjects for this study be solicited or contacted?  
    The Queen City Vocational Center will provide intact junior and senior classes in Gerontology and Child Care. Taft High School will provide a junior and senior class in English.

12) What steps will be taken to insure that the subject’s participation is voluntary?  What, if any, inducements will be offered to the subjects for their participation?  
    What steps will be taken to insure that the subject’s participation is voluntary?  What, if any, inducements will be offered to the subjects for their participation?
13) It is important that a subject be informed regarding the general nature of what he will experience when he participates in a study, including particularly a description of anything he might consider to be either unpleasant or a risk. Please provide a statement regarding the nature of the information which will be provided to the subject prior to his volunteering to participate.

See letter attached to sample of human subject form.

14) What steps have been taken to ensure that the subjects give their consent prior to participating? Will a written consent form be used? ☑ yes ☐ no. If so, please include it. If the subjects are minors, will their parents' consent be obtained? ☑ yes ☐ no. If so, please include the form and if not, please indicate why not.

15) Will any aspect of the data be made a part of any permanent record that can be identified with the subject? ☑ yes ☐ no

16) Will whether or not a subject participated in a specific experiment or study be made a part of any permanent record available to a supervisor, teacher or employer? ☑ yes ☐ no

17) What steps will be taken to insure the confidentiality of the data?

Each student will be assigned a number. All scores and data will be recorded and reported in relation to the student number.

18) If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subject or society?

No risks.

19) Will any data from files or archival data be used? ☑ yes ☐ no

1) Achievement test scores
2) Free lunch list
APPENDIX G

DIRECTIONS AND DEFINITIONS USED DURING TESTING
Directions and Definitions Used During Testing

A. Before testing:
   1. All books and papers should be removed from tables or desks.
   2. Space students apart and make sure they are comfortable.
   3. Provide students with a pencil with an eraser.

B. Directions before administering the General Information Form, OP Scale (A or B) "My Attitudes Toward the Aged", and Facts on Aging:

   "You will be asked to answer two questionnaires today. I will read each statement and give you time to mark your answers. I will define some words and those words are the only words I can define or tell you about. Raise your hand if I am reading too fast. I will also repeat statements if you want me to. After we finish the questionnaire, I will give you time to look over your answers."

C. PASS OUT General Information form which is stapled to Form A or B of My Attitudes Toward the Aged.

D. General Information - (used in pretest and posttest)

   "Before we start the first questionnaire, we must fill out the General Information sheet." (See Appendix, p. 218)

Added comments:

BIRTH DATE  - "Give me the month, date and year."
SEX  - "female or male"
DATE  - "September __, 1980 or May __, 1981"
RACE  - "Black, White, Chinese, Indian, etc."

Definitions

#1. Activities - Doing things together like shopping, going somewhere, crafts, housework, or helping person with bath.

#3. Aged - People over 60 or 65. They are often called elderly, old, older adults, senior citizens or elderly.

#4. Have you ever helped elderly people with activities? (other than your grandparents)
E. My Attitudes Toward the Aged - Form A used as pretest. Form B used as Posttest. (See Appendix, pgs. 219-223)

EXAMPLE: I like candy. If you really like candy, circle strongly agree SA. If you like candy, it's OK; circle agree A. If you don't know, circle undecided U. If you don't like candy, circle disagree D. If you really don't like candy circle strongly disagree SD.

Definitions - Form A (Appendix, pgs. 219-220)
#1. Residential units - Where one lives; apartments, homes etc.
#2. Most - The greatest number
#4. Set in their ways - Always do things in the same way. They did it that way when they were young and they do it that way now.
#5. Dependent - Need someone's help.
#8. Wisdom - Knowledge - knowing things
#10. Politics - Government
#11. Ill at ease - Uncomfortable
#12. Trustworthy - You can put your faith in them.
#13. "Good old days" - Days that have passed that were good days.
#14. Advice - To tell you what they think.
#16. Irritating - Faults that annoy or upset you.
#17. Residential neighborhood - The area in which a person lives.
#25. Reassurance - Being told or shown that you are loved.

Definitions - Form B (Appendix, pgs. 221-222)
#1. Residential units - Same as above.
#2. Most - Same as above.
#4. Adjustments - Make new changes.
#5. Support - Pay or care for them.
Definitions Cont.

#16. **Seldom** - Not often

#17. **Socially isolated** - Off by themselves, alone

#19. **15%** - 15 out of 100

#20. **Medical practitioners** - Doctors, health workers, etc.

  **Low priority** - Pay little attention.

#21. **Poverty level** - Little money, poor people

#22. **Volunteer** - Free

#24. **Irritated** - Upset

#25. **Socioeconomic status** - Your class and the amount of money you make.

**H.** Collect the second questionnaire. Collect the pencils. Thank the respondents and their co-operating teachers. This completes either the pretesting or posttesting procedures except in the case of Gerontology I and II.

These two classes receive a third questionnaire at the posttesting sessions, "Behavioral Intentions in Relation to the Elderly. This instrument was administered in a separate session. Three questionnaires would be too much (attention span wise) to administer during one setting.

**I. Behavioral Intentions in Relation to the Elderly (See Appendix, pgs. 232-237)**

Use same testing procedures as listed in Step A.

**Definitions:**

**Behavioral Intentions** - How you think you would act in the future if a certain situation would happen (title).

**Behavioral acts** - Tasks, jobs, duties, activities

**Interacting** - Working, being with

#5. **Possessions** - Clothing, belongings etc.

#6. **Ignore** - Pay little attention.

#11. **Permitted** - Allowed
#13. **Pressure points** - Where elbow, hip, shoulder touches the mattress.

#14. **Visual impairment** - Bad eye sight

**Sensory stimulation** - Help senses to continue working.

#19. **Physically dependent** - Body part missing (arm, leg); Need help getting around and doing things.

#20. **Clients** - Patients' or senior center members

#22. "**Patients Bill of Rights**" - A patients' rights to privacy; closed door while bathing, etc.

#24. **Institution** - Day care center, nursing home, senior citizen center, or recreational center

#25. **Compliment** - Say something nice.

#29. **Sterile techniques** - Being clean about work; washing hands between patients to reduce the spreading of germs.

#30. **Incontinence** - Can't hold urine.

#32. **Promote** - Help

#33. **Legislator** - Congressman

#36. **Frequency** - Amount or number of times

#37. **Behavior modification** - A way to change a person's actions or behavior.

#38. **Intervene** - Step in and try to stop.

#40. **Initiate** - You start an idea.

#42. **Advocate** - Say something; Speak out

#44. **Patients or clients**

#45. **Take a course in geriatrics or gerontology** - *(Beyond the work that you have already completed in high school.)*

J. Complete testing procedures in the same manner as stipulated in step H.


Chappel, Ginger. The Effect of Ongoing Contact with an Old Person on Young Childrens Attitudes Toward the Elderly. The American University, 1977.


Click, Eulalia Tate and Judith A. Powell. Preschool Children's Perceptions of the Aged, 1976. ED 149 849


Ernst, Theodore and Ruth Ernst. Some Attitudes About Aging and the Aged Among Participants in the Title III Network. Lincoln, Nebraska: School of Social Work, University of Nebraska, 1971.


ED 106 735


Hicks, Dale A. The Effects of Course Work and Field Experience on College Students' Attitudes Toward the Elderly. Bowling Green State University, 1977.


Jantz, Richard and Others. Children's Attitude Toward the Elderly. College Park, Maryland: Maryland University and Center on Aging, July, 1976. ED 142 860


Olmsted, Martha Louise Kinsey. *Influence of a Unit in Gerontology on the Attitudes, Knowledge and Perceptions of High School Students on the Aging Process, the Aged and Their Own Aging.* The University of Michigan, 1976.


Patients' Bill of Rights (Nursing Home). Ohio Revised Code: H. B. 600; Approved by Governor, October, 1978.


Thorson, James A. Variations in Attitudes Toward Aging as a Function of Educational Level. April, 1974a. ED 110 845

Thorson, James A. Variation in Attitudes Toward the Aged Held by Selected Groups in the Southern United States. June, 1975b. ED 113 541


Whitley, Estoya and Others. From Time to Time: A Record of Young Children's Relationships with the Aged. Research Monograph No. 17; March, 1976. ED 128 088
