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INFLUENCE OF A UNIT OF INSTRUCTION IN GERONTOLOGY ON THE ATTITUDES, KNOWLEDGE, AND PERCEPTIONS OF HIGH SCHOOL STUDENTS OF THE AGING PROCESS, THE AGED AND THEIR OWN AGING

by

Martha Louise Kinsey Olmsted

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Education)
in The University of Michigan
1976

Doctoral Committee:

Professor Howard Y. McClusky, Chairman
Professor Robert A. Bowman
Professor Malcolm Lowther
Associate Professor Milan Marich

DEDICATION

This dissertation is dedicated to my parents Rev. and Mrs. William Frederick Kinsey who inspired my interest in gerontology and encouraged me in every way, and would have delighted in sharing in its completion.

ACKNOWLEDGEMENTS

It is with a great deal of gratitude that I wish to acknowledge the help and assistance given me during the time required to complete this dissertation. Since the second semester of the doctoral program, I have been funded by the Administration of Aging, The United States Department of Health, Education and Welfare through the Institute of Gerontology, University of Michigan-Wayne State University. I was also fortunate to have been awarded a Dissertation Research Grant which made it possible for me to undertake this study.

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CHAPTER I

INTRODUCTION

> What you would have in the life of a nation
> you must first put in its schools.*
>
> Von Humbolt

How can education for aging enrich the life of the nation? It can contribute information about the aging process, an appreciation of the humanity of older people, and a sense of the entire life cycle as a means of understanding the human condition as an unfolding process of developmental change (Butler, 1975). As an all pervasive part of the curriculum (Jacobs, undated), education for aging can offer guidelines for enabling the oncoming generations to profit from the correlates of coping styles and attributes of life satisfaction that accompany successful aging at all stages of the life span (Vinson, 1974).

Background of the Research

If older people now and in the future are to lead fulfilled lives, there is an urgent need to develop positive

---

*Engraved on a wall in front of Lou Henry Hoover School, 6302 South Alta Avenue, Whittier, California.

attitudes in the young about the aging process, the needs and problems of the elderly as well as the potential of life long development. Education for aging should ideally start in kindergarten or before and continue throughout life. It is a natural complement to programs that have recently been given center stage in the schools such as alternative education in response to individual needs, multi-cultural education, increased concern with the importance of a positive self concept, ecology, career education, decision-making, values clarification, futurity as well as community education. By high school, a unit on aging is appropriate for many disciplines.

According to H. Lee Jacobs (undated, p. 86), education for aging in the United States to date has been "poorly conceived, fragmentary, and uncoordinated, with emphasis primarily on assorted needs presumed unique to the second half of life." He foresaw lack of administrative accommodation and formal training for teachers as the two major barriers in implementing such education.

Education for Aging as an Intervention Strategy

Aging is considered a modern social problem because of the larger number of people that are now living into the later years with little preparation made for the fulfillment of their physical, psychological, and social needs. It is believed that something can be done to improve this situation. As shown in Figure 1, social action programs

have three levels of intervention: primary, secondary, and tertiary.

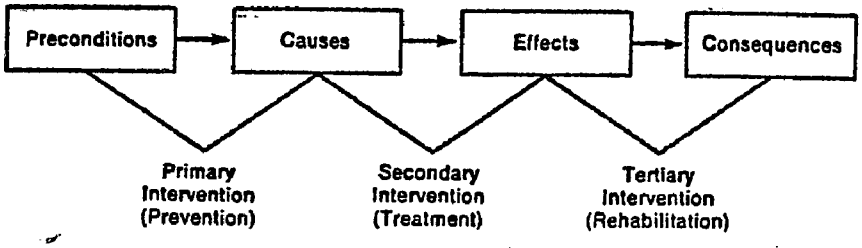


Fig. 1. Levels of Intervention

Source: Suchman, 1968, p. 173.

Many intervention strategies are applied at the third level, in an effort to rehabilitate the older person who has coping difficulties to reduce the consequences of recent great loss, or to ameliorate the effects of societal labeling into a discounted status. Secondary intervention can be important to those near or living in the later years, but it is in the realm of primary intervention that the greatest long-range change can be accomplished. It is here that education for aging K-12 should be considered. While all strategies are needed, those aimed at the primary level have the potential double advantage of affecting the life of those in the later years by sensitizing the young to the needs of the old, and improving intergenerational interaction, but even more importantly of influencing the individual student's adjustment to the aging process.

Statement of the Problem

The purpose of this research was to evaluate the influence of a unit of gerontology on the knowledge, attitudes, and perceptions of high school students of the aging process, the aged, and the students' own aging. More specifically, the instruction unit attempted to (1) impart accurate information about the aging process and sensitize the students to the needs of those who are presently elderly, and (2) help the students realize that by design or default, they are patterning their own old age.

Design of the Research

The standard research design of pre and post-testing with an experimental and control group was employed. Utilizing the life-span development model of aging, the writer, who has a strong academic background in gerontology, taught the basic demographic, biological, and social information of gerontology as a unit of aging. Five classes in Human Relationships at a large high school located in a mid-western city served as the experimental group. Five classes in Psychology in the same school constituted the control group.

Instruments to collect demographic data, test for cognitive gain, attitude change, and perceptions of age were administered to all groups. The instructional unit was evaluated by the experimental group only.

The data were treated by the use of descriptive

statistics employing analysis of variance, covariance, pair-wise t-tests, student t-statistics, and chi square. The accepted level of significance was set at .05.

Research Questions

Analysis of the data centered around the following questions:

1. Was there a difference between the experimental and control groups in the pre and post-test scores of knowledge?
2. Was there a difference between the experimental and control groups in the pre and post-test scores of attitude as measured by
   a. The Ball State Aging and the Aged Questionnaire?
   b. The Opinions About People Questionnaire?
3. Was there a difference between the experimental and control groups in the pre and post-test scores in the Perceptions of Age Questionnaire?
4. What are the relationships of other variables such as age; sex; grade; area of living; age, education and occupation of parents; living with an older person; having living grandparents; etc. of the experimental and control groups to knowledge and attitude scores?

Organization of the Dissertation

This dissertation consists of five chapters: Chapter I presents an introduction to the study. Chapter II contains a review of relevant literature. Chapter III deals in detail with procedures, instructional outline of the unit, and hypotheses. Chapter IV is devoted to an analysis of results. Chapter V concludes a summary of the investigation

with an interpretive discussion of the implications of the results for understanding and working in the field of education for aging.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The review of the literature has been divided into two major areas: (1) attitudes toward the elderly, and (2) education for aging. There has been no attempt to distinguish between attitudes toward the aged and aging, since research fails to distinguish which of these two dimensions is being measured. Education for aging has several divisions, but it could have many more because of the multi-disciplinary nature of the gerontological field.

Attitudes Toward the Elderly

Even though it has been generally assumed that negative views adversely affect the elderly's feelings of usefulness, and emotional security, "there is almost no systematic attention to possible effects of negative views of older people." The dynamics of the self-fulfilling prophecy with its self-hatred, the possibility that the views one holds of the elderly will affect one's treatment of the elderly and limit the horizons of experience in old age all have been assumed and expected, but "clearly this is

a further area for careful conceptualization and research. Just what are the consequences of differing attitudes toward older people?" (McTavish, 1971, p. 100).

The measurement of attitudes toward older people was initiated less than twenty-five years ago by Tuckman and Lorge (1952). Through experience in the field and interviews, two scales composed of statements representing misconceptions and stereotypes of the elderly were developed, one for blue-collar workers (fifty-one statements) and the other for general use (137 statements). The instruments were used with many groups including non-professional workers, college students and their parents, community and institutionalized elderly (Tuckman and Lorge, 1952, 1953, and 1956), as well as with high school students (Lorge, Tuckman, 1954; Lorge, Tuckman and Abrams, 1954). Generally, the subjects viewed old age as a time of life characterized by economic insecurity, loneliness, resistance to change, poor health, and failing mental and physical powers. When it was used for pre and post-testing to see if a class on aging would change attitudes, the results were not significant. This was the instrument used the first year at the Ball State Education for Aging program (Mann, 1971) where no significant change of attitude occurred. Other researchers (Axelrod and Eisdorfer, 1961; Perril, 1963) also made use of it, but the latter team had problems with the scale and revised it by reducing the number of test items. The modified instrument was used by Bekker and Taylor (1966),

Lane (1964), and Rosencranz and McNevin (1969). One of the difficulties with the Tuckman and Lorge scale was that its use of a simple "yes" and "no" answer allowed no opportunity for the expression of a gradation of feelings.

Other instruments have employed a Likert-type scale (Kogan, 1961), semantic differential device (Kogan and Wallach, 1961), or a sentence completion procedure. The last method was used by Golde and Kogan (1959) in developing matched sets of sentence stems in the common stereotypic areas comparing "most people" to "most old people." The results were usually in the hypothesized direction of more negative answers about older people and seeing them as qualitatively different from people in general.

The difference in attitudes toward the aging and the aged in a younger and older sample was tested by Kogan and Shelton (1962). Using a modification of the Golde-Kogan instrument, they found that the attitudes of older and younger subjects regarding older people were less far apart than attitudes about religious or ethnic group differences. Older and younger people tend to be more similar in attitudes than are members of different racial or religious groups (Birren, 1964a, p. 247). One interesting difference in the responses of the two age groups was to the question: "One of the greatest fears of many old people is . . . ." The younger subjects mentioned death, or dying, as the greatest fear, while the older individuals stressed lack of money and financial insecurity. This instrument was used by

Karl Feltman for his dissertation, "The Development and Evaluation of a Unit of Gerontology for Secondary School Students" (1974).

Dr. Feltman found that a unit on aging helped students in the experimental group have more positive attitudes than those in the control group on seven of the twenty-one items of the Kogan-Shelton instrument. Those who lived with a person over sixty for six months or longer, visited their grandparents frequently, or considered themselves old after seventy had more positive views of aging and the aged than those who did not indicate these characteristics. Information gain as measured by the Ball State Pre- and Post-Knowledge Inventory was significant.

Age changes in values and attitudes were tested by factor analysis on a semantic differential by Kogan and Wallach (1961). "Baby" got the most favorable rating, and "death" the least favorable. Young people and older adults matched for education registered considerable agreement. They found that those who reject older people tend also to reject other minority groups. Nurtural personalities tended to have favorable attitudes toward the elderly. This study raises two interesting points. (1) Because the educational level is increasing, cross-sectional comparisons between younger and older samples matches people exposed to different educational experience, and increased education is the one variable that tends to correlate with more positive attitudes (Thorson's studies, 1974 and 1975 using the

Kogan scale). (2) Since those having negative feelings toward the elderly also tend to accept other minority group stereotypes, perhaps emphasis in the schools recently in multi-cultural education may pay dividends to the field of aging.

Two hundred third graders were asked to write paragraphs about older people (Hickey, Hickey, and Kalish, 1968). The results were mixed. Some older people were seen as kind and nice; some mean, lonely, or inactive. A twenty-item questionnaire was given to 78 third graders, 83 junior high, 102 high school, and 72 college students, to test for evaluation of ages 25, 45, 65, and 85 on five characteristics. Of the four hypotheses these three were upheld: (1) children and people in general perceive age differences between adult age groups; (2) the differences are greater as the child gets older; and (3) the older the adult, the less pleasant the image. The fourth hypothesis, that the older the child, the less pleasant image he will have of the older adult was not confirmed.

In recognizing stages of the life cycle, the age of the student is a critical variable. Britton and Britton (1969) found pre-school children had difficulties in distinguishing among the ages of adulthood as represented by drawings of various age groups. The older the child, the easier the task of recognition; the younger children did better with younger ages. Thomas and Yamamoto (1975) in a sample of school students in the sixth, eighth, tenth, and

twelfth grades found that observations of young people are complicated. They asked pupils to estimate the ages of three newspaper photographs of a young man about thirty, a middle-aged man about fifty, and an old man about seventy years of age. Using the Hickey, Hickey, and Kalish technique, they also asked them to write a story, and rate the various aged men on a semantic differential scale. They found that the subjects estimated age accurately. They did not find the predominantly negative attitudes reported in the literature, and felt the negative picture of old age in past investigations "may be more an artifact of research method than an accurate overall picture of the phenomenon."

The attitudes of young people toward old age was explored by Kastenbaum and Durkee (1964b) as they felt that such attitudes were "likely to influence their interactions with persons who are elderly, and . . . the individual's own adjustment as he joins the ranks of the aged." Kastenbaum and Durkee asked six samples of young people to choose the three most "Important Years (IY) of a person's life and also match six versions of the future to a character sketch and estimate the age of the character in the "Age Appropriate Attitudes Technique" (AAAT). Results showed early onset of the tendency to blank out the later years of life. They found young adults do not give much consideration to the later years of life. The outlook for the remote future was vague and negative. They also found adolescents to be very "now" oriented. The span of time

between the first and third mentioned "Important Years" increased with age and social adjustment. The researchers felt that the "lack of contemplation of one's own later years would seem to diminish the capacity for empathic identification with persons who are already advanced in years" and run "the risk of ramming into 'old age' as though it were an uncharted reef" when they reach the later years themselves. In the description of the future, older people were seen by the young to be oriented in the past. However, when Cameron (1972a) interviewed 3,838 adults as to what occupied their thinking, the elderly showed a slight tendency to think more frequently about the present.

In commenting about the state of attitude research in gerontology, McTavish (1971) felt that

> The field is some distance from systematic documentation . . . much more research is needed -- research using larger and more carefully drawn samples.

Since the time of his comment, the most extensive attitude survey to date of aging is the one conducted by Louis Harris and Associates for the National Council on the Aging (1975) entitled The Myth and Reality of Aging in America. The purpose of the survey was two-fold: (1) to examine the public's attitudes toward older Americans and the experience of aging; and (2) to document older Americans' views and expectations of themselves and their personal experiences of old age. Four-thousand-two-hundred-and-fifty-four interviews were done of a representative cross-section of the

American public eighteen years and over. Another sample representative of the public sixty-five and over was surveyed in order to provide data from an adequate number of older people. An additional cross-section of people 55-64 years of age and a special panel of older Blacks were also drawn for a detailed look at their conditions and attitudes. The latter groups were sampled beyond their percentage of the population and weighted back into their representative proportions for the purposes of analysis.

Many of the questions, as will be indicated in Chapter IV, parallel questions used in the present research. The picture that emerged from the study was a much more negative view of some aspects of aging by those 18-24 years of age than by those sixty-five and older. Economic insecurity, poor health, loneliness, and fear of crime were considered much greater problems of the elderly by those 18-24 years old than the elderly themselves reported. There was a particularly strong showing among the elderly to prefer to stay in the mainstream of society and against mandatory retirement. All segments of the population recognized the need to support elderly members of the community in dignity with raises in income automatic with the cost of living, and resorting to general taxation to support such programs, if necessary.

Much of the research of the past has dealt with small samples, using different instruments so that the results have not been comparable. The Harris survey using

a national sample provides the first comprehensive inventory of public attitudes toward and problems of the older population now available. It undoubtedly will be a source of information in the aging field for many years to come. In relation to the present research, it has limited usefulness, however, because the youngest members of the Harris sample were eighteen years old.

The results of research on the acceptance of a negative stereotype by the elderly themselves have been mixed. Calhoun and Gottesman (undated); Kastenbaum and Durkee (1964a); Kogan and Wallach (1961); Kogan (1962); and Tuckman and Lorge (1954) have all reported findings of negative views of aging as strong or stronger among the elderly. Collete-Pratt (1976) found them less negative, and Youmans (1975) found attitudes depended upon the setting (rural/urban). The Harris poll with its extensive survey of the population with an in-depth study of the over-65 age group gives for the first time some definitive answers. The results show the image of older people being least favorable in the young, most favorable in the 40-64 age group, and declining among those over-65, increasingly so as age goes up. Even the many successfully aged tended to think that their personal experience is an exception.

Some of the more recent research studies in relation to attitudes toward the elderly that have been conducted hold promise of getting to the heart of age-related discrimination. Their methodology is more indirect and subtle than

responses to stereotypic sentences. Within the literature, a negative stereotype of aging has been central and agreement or disagreement with a misconception, prejudice, or stereotype has been the evidence on which a positive or negative attitude in aging has been based.

In a study of person perception and its relationship to communication interaction (Rubin and Brown, 1975), college-age students were asked in Experiment I to rate seven age groups, ranging in age from infant to elderly adult, on their ability to perform a number of specific cognitive tasks. Intellectual ability was seen as increasing with age until old age, with the ability of the elderly being equated with that of the adolescent. In Experiment II those college students who were found to view the elderly as less intellectually competent than other, younger adults were asked to communicate rules for a game to various age groups. The messages were scored for the mean number of words per utterances, sentences, and game rules cited. Only the first measure was found to be a significant indicator of differential communication. The results demonstrated that those that had perceived elderly adults as less cognitively able altered their behavior in accordance with their stereotyped perceptions.

In relation to professional attitudes, studies have shown that the elderly are the least touched (physically) of all patients by nurses and there is the least interest on the part of nurses in interacting with them (Gillis,

1973), "yet the very old who have lost 'significant others' are the ones who need touching" (Burnside, 1975b). The elderly were found to be the least desired psychiatric patients (Altrocchi and Eisdorfer, 1962). Attitudes toward aging can be a pervasive influence in a person's professional life; for example, a study showed a physician's attitudes toward senesence can not only influence his attitudes toward his patients and all he does in his practice, including his attitude toward his own aging, but interfere with his ability to be a good model of aging (Goldfarb, 1963).

"By and large, most of the studies in this area" (attitudes toward aging and the aged) "have utilized either a cross-sectional design or a descriptive survey design" (Bennett and Eckman, 1973). Brubaker and Powers (1975) propose an alternative model using cognitive dissonance theory.

Attitude measurement has suffered from imprecise instrumentation and limited perspective. Some of the prospects for the future will hopefully lead to more accurate and meaningful measurement of an important aspect of gerontology. It would seem that there is a great need for education in the schools to help change attitudes of the public toward aging.

Attitudes in Literature

Attitudes toward the elderly as seen in children's

literature are not as simple to analyze nor as predominantly negative as some researchers had anticipated when undertaking their inquiries (Seltzer and Atchley, 1971). Using content analysis, frequency counts, and a semantic differential, Seltzer and Atchley analyzed books from four time periods between 1870 and 1960 expecting to find support for the hypotheses that (1) attitudes toward older people or older things would become increasingly negative; (2) there would be a decrease in mentions of older people or older things in relation to the young; and (3) recent children's literature would reveal an increased variability in the descriptions of older people or older things. The findings did not support a generally negative picture about older people and things. There were fewer and less strong negative patterns than had been expected.

A review of the best adolescent literature, the winners of the John Newberry Award, for number and type of older person portrayed, was conducted by Peterson and Karnes (1976). Their findings showed that about two-thirds of the books included older characters, but rarely did they play a major role. A consistently positive view was found, but without any in-depth exposure to real problems. A well-balanced picture of old people and aging was lacking. Characters were portrayed as either very rich or very poor with little diversity, including ethnic, and seemed in general to be outside the mainstream. Settings in other countries showed older people to be admired and respected.

School books in Russia contained stories of how young children help their elders (McKain, 1967). Trade unions encourage respect for old age in the home, on the street, and in the family. On the other hand, a comparative study of the U.S. with five other countries (Arnhoff, Leon, and Lorge, 1964) found U.S. youth viewed aging less negatively than their foreign counterparts, although all confirmed a negative stereotype to some degree.

In a review of fiction in leading American magazines between 1890 and 1955 (Martel, 1968, p. 57), it was found that

> The social changes in life organization fall hardest on the aged, who suffer a virtual "symbolic abandonment" in the stories . . . relegated to less prominent roles and excluded from membership in the adult . . . in-group.

For example, in the fiction published in 1955 not a single character over age sixty is described as having a close reciprocal attachment with a middle-aged or young adult. From 1890, when life tasks involved a gradual unfolding over the course of the adult life-span, age changed its meaning from the connotations of "experience," "wisdom," and "seasoning" to those of "past the prime," partly "out of it," or not being "with it" by 1955.

Achenbaum (1974, 1976) found a similar change of portrayal of old people in history. At the time of the founding of the nation many of the leaders, according to the historical reports, enjoyed a fine old age, functioning

in important roles, serving as models and guardians of virtue, and enjoying great respect. The coming of technology with its dynamics of reversing the generational statuses led to a declining importance of the aged in historical writing.

Maxwell and Silverman (1970) developed a thesis that societies can be ranked according to the degree of esteem and participation accorded the elderly by the amount of useful information of that society controlled by the aged. This might help explain the reduced position of the elderly in modern times.

Even humor (Palmore, 1971) where the aged are mentioned reflects a negative view of aging in reference to physical abilities, appearance, age concealment, and mental abilities.

Education for Aging

The education section of the 1961 White House Conference on Aging, in its policy statement, said,

> Education for aging is related to every aspect of aging and is a part of the lifelong learning process. Education for everyone about aging will influence community attitudes and actions with respect to aging problems.

The feeling of the delegates was that

> . . . initial stimulation of educational programs for, about and by the aging, should be through institutions that have public responsibility for education, that in combination have nation-wide coverage and have the confidence of all groups.

> These institutions are public schools, institutions for higher learning and libraries (White House Conference on Aging, 1961, p. 200).

Again in 1971, the White House Conference on Aging policy states,

> . . . appropriate materials and methods about all aspects of aging must be developed and introduced in the curricula at all levels of education from pre-school through higher education (Education Section, Recommendation XVII, p. 8).

Education on and for aging in the elementary and secondary schools has been a neglected area of educational concern. As pointed out by Dr. H. Lee Jacobs, an Associate Professor Emeritus and Consultant on aging at The University of Iowa, and a prime mover in this area, the subject has been conspicuous by its absence (Jacobs, undated).

Dr. Jacobs introduced the first draft of a unit of study, "Youth Looks at Aging," at a summer workshop of the North Dakota Vocational Homemaking Teachers Conference in 1962. In the introduction of the unit he wrote that he had chosen the title, "Youth Looks at Aging" rather than "Youth Looks at Old Age" since all ages, including youth are involved in the aging process, a concept that he considers the most important insight to emerge in the educational world in this generation. Starting with home economists, teachers of social studies and psychology as well as church groups have used the unit, which has been revised and published by the Institute of Gerontology at The University of Iowa. It addresses itself to eighteen major questions which

youth have asked concerning important aspects of aging. It is designed to be a teacher's guide for a three-to-four-week study. It has been estimated that five hundred high schools in various parts of the country have used it, with the most intensive use in the five high schools in Des Moines. At a symposium on aging at Purdue University in 1968, Dr. Jacobs pointed out that the two major hurdles impeding the progress of incorporating material on aging in the public schools were lack of formal training for teachers and administrative accommodation.

Education for Aging for Teachers

The first major attempt to provide a model for teacher education on aging was the three-year pilot project launched at Ball State University, Muncie, Indiana, in 1971. The only project of its type, it was supported in part by SRS grant No. 94-P-25198/5 from the Social and Rehabilitation Service, Administration on Aging. As a three-year, in-service training program designed to incorporate knowledge about the aging process and the aged into the disciplines presently offered at the various instructional levels of the public school system, the program consisted of a four-week summer workshop followed by a year-long practicum, which included three workshops spaced throughout the year that provided opportunities to share experiences and consult with other teachers in the program. Another feature of the program was a visit by the Director to each of the

participating teacher's schools. This in-service training was designed to reach one hundred and five qualified participants, thirty-five each year, from elementary and secondary schools of Indiana. There were also representatives of parochial schools. The first year (1972), following a year of planning, five teachers were recruited from each of the following categories to ensure a balance of subject matter and diversity of experience: elementary level, librarians and/or English, social studies (including psychology), biology, health education, home economics, and vocational areas. Only one person from a given school district was selected. The second year (1973) teams of teachers from the above categories were selected from five school systems in the state to see if more involvement in a school district would provide greater support for the innovative program.

The third year (1974), because the funding was being phased out and only partial scholarships (as compared to stipends covering all student expenses in 1972 and 1973) could be offered, an Advanced Workshop was held for two weeks to which all participants of the former two summer workshops were invited. During the second two weeks there was a teachers' workshop for those without previous experience in aging education. One of the major goals of the program was to develop curriculum materials that could not only be used by the participating teachers, but could also be packaged and utilized by teachers working elsewhere and

not able to take part in the workshop sessions.

The Ball State University program involved a small number of teachers, but as a pilot program it could be the first step in an immense undertaking of teacher training in gerontology that could be done nationwide by offering graduate courses in schools of education and in-service training in school districts. When the materials from Ball State University are complete, they can be helpful to teachers everywhere in making the developmental life cycle concept of growth from conception to death an all-pervasive part of the school agenda.

The writer spent two weeks during the final year (1974) of the project studying the Ball State "Teacher Education Program on Aging." A half hour interview with each of the thirteen teachers attending the first session (the advanced workshop) was tape recorded. These teachers had had from one to two years experience working gerontological concepts into their curricula, and in almost all cases had involved elderly people in their plans. All were very enthusiastic about their experiences and spoke of projects in which they had been involved.

They were asked to prioritize eight possible reasons for aging education. Table 1 shows that those teachers who had had the experience of working with students placed the "helping in achievement of identity or a positive self concept" first and tended to place coping with change second. Whereas the teachers who were just

TABLE 1

PRIORITIZING REASONS FOR EDUCATION ON AGING IN SCHOOLS

	Advanced Workshop Members								New Workshop Members							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1. Helping in upgrading life choices	1	3	3	0	0	1	4	0	2	3	1	1	2	2	1	0
2. Imparting accurate information about the aging process	0	3	1	4	3	2	0	0	1	1	2	3	3	0	2	0
3. Sensitizing to needs of those presently elderly	1	0	3	2	2	1	3	0	5	1	4	1	2	0	0	0
4. Helping in achievement of identity and positive self concept	10	1	1	0	0	0	0	0	2	4	1	3	1	1	1	0
5. Helping students cope with the dynamics of change in general and in relation to the life cycle	1	6	3	1	1	0	0	0	2	2	0	2	0	3	3	0
6. Providing opportunities for the elderly and young to enjoy a mutually rewarding relationship	0	0	2	5	3	2	0	0	1	1	4	2	0	4	1	0
7. Acceptance of death as a part of the life cycle	0	0	0	0	3	4	4	0	0	1	2	1	4	2	3	0
8. Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

beginning the study of gerontology stressed "sensitizing to the needs of those presently elderly" and scattered on the second choice with positive self concept getting the greatest number of tallies (four).

Another approach to prepare teachers for dealing with education on aging is "A Unit on Aging for a High School Curriculum" assembled by Marcia Cameron. It brings together the resources of the Institute of Gerontology, University of Michigan-Wayne State University, in four major areas and in addition includes references, lecture topics, special projects, class activities, questions for discussion and homework assignments for the teacher.

The Field of Educational Gerontology

Howard McClusky divides the field of Educational Gerontology into four areas: two for those not yet aged and two for Persons in the Later Years (PLYS). For those not yet aged the two categories are: (1) education about the aged and aging (which would include the training of professionals); and (2) education about how to live in childhood, youth, early and middle adulthood so that life in the later years will be a period of fulfillment and significance. For the Persons in the Later Years (PLYS) the two categories are: (3) education related to coping with aging-related adjustment; and (4) education for self fulfillment (McClusky, undated).

David Peterson (1976) writing in the first issue of

the Journal of Educational Gerontology, conceptualizes the field in three categories: (1) education for older people to help them cope with aging; (2) public education about aging to improve general attitudes toward older people; and (3) education of professionals and practitioners for work in the field. Clearly, the scope of the present research encompasses the first two categories of the first paradigm and number two of the second.

Education for Aging by Simulation

One of the most innovative concepts in education for aging of those that are young is the simulation of old age. Dr. Pastalan at The University of Michigan is in the process of developing an empathic model that will make it possible for students to "experience" old age. The visual changes have been reproduced in a series of slides showing scenes as observed by the twenty-year-old eye and the same scene as seen by the normally aged seventy-year-old eye. A video tape that simulates both visual and hearing loss, particularly as it affects family relationships, is available for use. Both were used in this investigation for the unit on aging. Eventually Dr. Pastalan hopes to have glasses and other devices that can be used by individuals to simulate all of the age-related sensory losses.

A similar approach has been used by others (Kastenbaum, 1971; Hickey, 1975). Articles about University of Utah students in the Los Angeles Times and University of

Michigan students in the Ann Arbor News report the simulation of some of the chronic conditions of the elderly. Such an assignment shows students some of the problems that the elderly face and sensitizes them to the need for a supportive environment for the old.

"Grandparents as Educators"*

Utilizing the talents and experience of the older generation has proved to be a most valuable source for the classroom experience. Probably the oldest and most developed program of this kind is located in the Winnetka School District in Illinois. It started in 1959 in one building and now is being used in over thirty schools. It was originally devised as a means of helping elementary students who were not fulfilling their potential. Every year when teachers were asked to identify the underachievers that would benefit from the program, more than fifty percent of the children who had been designated previously were not named again (Freund, 1965, p. 353), as they no longer needed the individualized attention. Boys tended to have more learning problems and men were particularly sought out to help them. The director of the program, in citing some of the advantages of the program to the students, school, community and older adults, mentioned the knowledgeable older adult providing a positive image of aging, and

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*Cohen (1975).

> . . . probably the most striking of all is the children's extended experience in observing an adult's persistence in pursuing information--week after week as they search for answers together. Perhaps attitudes toward learning are more caught than taught (357).

The Winnetka Board of Education resolved in June of 1963:

> When a man or woman having reached the conclusion of a vocation, pauses to lift up those less wise and less experienced, he is plowing back his goodness into the world.

One of the male volunteers in the program (Bede, 1969) in a speech mentioned how the program had made him feel a sense of recognition, acceptance, appreciation, the feeling of being important, needed, wanted. It gave him the joy of "sharing one's competence."

As the program spread to surrounding school districts, a volunteer manual was written (Burgoon, 1969) and used by these communities in setting up similar programs. After starting with the Project for Academic Motivation for the underachiever, it has been expanded with equal success to help the gifted child.

Almost every issue of Aging, a magazine published by the Administration on Aging, has an article about programs involving older people in the schools. The January 1976 issue showed the emblem that is the symbol of the Foster Grandparent Program. Some of the "grandparents" receive a small salary for their participation. For others, as the Winnetka project and RSVP, the service is voluntary. One retired school administrator recommended

using the elderly in part-time jobs in the schools to help change the image of aging. He felt it would even aid the teachers to understand the developmental process of aging (Hakanson, 1976).

In Michigan a most successful program in giving the very young the benefit of the experience, knowledge, and skills accumulated in a lifetime is the Teaching-Learning Communities Project, financed under an ESEA Title III grant through the Michigan State Department of Education. Art serves as the bridge that unites some fifty older men and women of Ann Arbor who serve as "grandpersons" to students in fifteen schools (Brahce, 1975). Lifetime skills of knitting, weaving, and lace-making, are shared. Sometimes the two generations learn and work together. One of the unusual features of the program is that many of the volunteers come from nursing homes and have major sensory or mobility limitations. The emphasis is put on what they have to share; not only are the old still able to contribute, but the young are learning a great lesson in "body transcendence versus body preoccupation" (Peck, 1968).

The Interim Report of the project (Doyle, 1975) showed enthusiastic support from students, teachers, participating school principals as well as the volunteers themselves. The report of the project director Carol Tice also shows the success of the program in meeting its goals in creating new learning experiences within a symbiotic relationship of helpfulness fulfilling needs.

Margaret Mead has been a leader in stressing the importance of redesigning our social environments to allow for the daily contact of the old with the young which is of benefit to both age groups. She believes that if we are going to restore a sense of community, a knowledge of the past and a sense of the future is essential (Mead, 1972, 1976). Many professionals in the gerontology field (Butler, 1975; Havighurst, 1973; Neugarten, 1974; Peterson, 1973) feel that one of the most damaging aspects of being old in America today is that our society has not yet defined a set of expectations that are appropriate for the use of leisure time with the clarity that it has defined the behaviors and attitudes expected of work roles. Having the opportunity to work with children in the schools begins to define a model of public service for the elderly.

The old and the young have been seen as generation gap allies (Kalish, 1969) because they both suffer from age-segregation, are non-productive members of society, have little influence upon the decision-making apparatus, have relatively unstructured time, are less educated and suspicious of those who are, and tend to be poor. There are many ways the elderly can still be relevant to the community: by providing a link with the past, helping the young come to recognize the implications of the life span, and in some cases, offering a window to another culture. They can serve as models that have experienced great technologi-

cal and historical changes in their lives. They can help youth realize it is important to support people in dignity, even if their time is brief. They can envisage what it is like to be older. Such intergenerational experiences may be the first contact with the physical deterioration of all of life, and by developing the perspective necessary to deal with problems earlier in the life span, may help in formulating a life philosophy.

Education for Physical Fitness and Health Practices

Many factors affect longevity and the quality of life in the later years, only some of which are under the control of the individual. One that is, is health practices. In the Human Population Laboratory in Alameda County, California, 260 volunteers were given "ridit" ratings which represented where they stood on a scale of health practices including hours of sleep, regularity of meals, physical activity, weight, smoking, and drinking (Belloc and Breslow, 1972). In an experiment in which physical health was the dependent and health habits the independent variables, it was found that good practices were associated with positive health relationships and that these activities were cumulative, independent of age, sex, or economic status. In a five-and-a-half year follow-up on health status (Belloc, 1973), it was found that mortality was more strongly associated with poor health practices than physical status or income level. Within the older age

groups, there were strong mortality decreases with good health practices.

Dr. Frederick Swartz, chairman of the American Medical Association Committee on Aging, writing in the December issue (1972) of Geriatrics, debunked popular theories on aging. Many of the so-called infirmities of old age are a lack of conditioning and the result of nutritional imbalance. Retarding the aging process, he felt, can be accomplished through parents and teachers selling some degree of self discipline to the coming generation.

Dr. deVries (undated) believes that the physiological changes which accompany the aging process may not be the result of aging alone. According to him, ideally, physical fitness is a condition which should be achieved in youth, pursued in middle age, and never relinquished insofar as that is humanly possible. Dr. deVries advocates having the schools play a major role in ensuring that those who graduate from high school are "physically educated" so that they can take care of their own health and body maintenance problems. Butler (1975); deVries (undated); and MacLean (1974) see instruction for the achievement of physical fitness as a major responsibility of the school in education for aging. Thus, on the school agenda should be education for survival, which includes knowledge of what constitutes appropriate body weight and life-span expectations, knowledge for cardiorespiratory and muscular fitness, essentials of good nutrition, food preparation, knowledge of self in estimating

physical fitness level, as well as skills which will make the lifelong pursuit of physical fitness a pleasant and self-motivating experience.

For emotional security in later maturity, there is a need to develop a philosophy of leisure for all ages (Havighurst, 1973; MacLean, 1973, 1974; J. Peterson, 1973).

Even though training for physical fitness should be part of the life-style from an early age, Dr. deVries conducted experiments with older men and women illustrating the point that it is never too late to improve physical fitness (deVries, 1970, 1971a, b, 1974, undated; Diamond, 1973; Hamilton, 1969). In the first experiment, conducted at the Laguna Hills retirement community under the sponsorship of the Administration on Aging, 112 older Caucasian males, aged 52-87 with a mean age of 69.5, volunteered for participation in an exercise training regimen. (The researcher's father was the 87-year-old "guinea pig.") Calisthenics, jogging and stretching exercises or aquatics were part of one-hour workouts three times a week. The most significant finding was related to increased oxygen transport capacity, improving brain function. Physical work capacity, systolic and diastolic blood pressure all showed improvement. The participants reported that they felt better, enjoyed their lives more and some found exercise the key to overcoming migraine headaches.

In a study of attitudinal predictors of devaluation of old age (Collette-Pratt, 1976), negative attitudes

toward poor health were found to be the most consistent predictors of the down-grading of the aged. Negative attitudes toward death affected the young and middle-aged, but not the elderly.

For the education of aging in health and physical fitness, there is a difficult dilemma to resolve. Good health is a prized value and one that should be cultivated. Before 1900 in the U.S. and in many traditional societies only three to four percent acheived old age. Death is inevitable but has been linked with old age only recently. How can education for aging advocate the importance of health and health practices and yet instill nurtural attitudes toward death and dependency. Perhaps it can happen only with the development of a personal life philosophy that accepts the new variables of life, "the dichotomy of growth and expansion versus anxiety and threat in motivation" (Kuhlen, 1964). Physical efficiency cannot be taken as the only measure for the building up or breaking down of our lives (Frenkel-Brunswik, 1968). Physical powers used as the major value in the definition of self is bound to lead to disenchantment and disillusionment. The greater reliance on wisdom-based or mental-based values of self-image in middle age can still allow for as much physical activity as possible. In old age, one of the new and crucial facts is the certain prospect of personal death, requiring a readjustment from ego preoccupation to ego transcendence (Peck, 1968). This subject is more fully

covered in "Life Cycle Study" at the conclusion of this chapter.

Models for Education on Aging

Many disciplines offer models for curriculum development in aging; multi-cultural, career, and health education are a few examples. In response to a community need for greater sensitivity to multi-cultural education, a model involving knowledge, philosophy, and methodology was adopted by The University of Michigan School of Education. The Master Agreement of the local Teachers' Association instated a mandatory requirement that all student teachers give evidence of substantive understanding of the multi-ethnic or minority experience. To accomplish the goals of the knowledge component, three University courses relevant to cultural concepts were required for all students who planned to become certified. All teacher preparatory methods courses were involved in teaching multi-cultural methodology; the philosophy permeated all approaches. Workshops and lectures were part of educating those teachers who were already certified and also operated as an outreach to the community (Baker, 1973, 1976a, and 1976b).

Career education as it is currently being conceptualized is life planning of skills (Marland, 1972). Education, potential, fulfillment as an individual, and meaningful use of leisure are part of the matrix of "Elements and Outcomes of Career Education" (Shofstall, 1974). Using a

32-cell matrix (eight Career Education elements times four developmental grade levels), 450 community representatives through twelve workshops developed a guide for the Arizona Department of Education that is used throughout the State by all school levels and community groups. Such a matrix could be designed for Aging Education, with certain basic concepts introduced at the primary level and elaborated upon and expanded through the intermediate, junior, and high school levels. The rainbow of colors used makes the matrix very appealing and an excellent poster. A similar concept was carried out in Oregon (Rasmussen, 1971), Mississippi, and Kentucky (Goldhammer and Taylor, 1972), and Michigan (Career Education: Workshop Evaluation, 1974).

One of the central themes in current Career Education is the developmental life-span perspective with life satisfaction a major goal (Attwood, 1974, 1975a, b; Gordon, 1973). The meaning of leisure is introduced early in the curriculum as well as public service roles (Hoyt, 1972). This excerpt from a National Vocational Association Newsletter summarizes this new emphasis:

> In order to be whole persons, men and women naturally must engage in activities they consider to be significant. The need to make judgments about using time and assuming roles recurs throughout life. A person formulates a career by continuously evaluating both what he wants to do with his life and the actions that will enable him to achieve his personal goals. Career development occurs as educational and vocational pursuits interact with other life pursuits. It continues throughout life.

Another possible model in education for aging is that suggested in The Health Education Guide: A Design for Teaching Kindergarten through Grade Twelve, authored by Barrett (1971). It is comprised of eighteen teaching units including the aging process, alcohol, drugs, human ecology, sex education and smoking. In the aging section the Introduction for the teacher was written by John B. Martin, who was then United States Commissioner on Aging and the units on the "Aging Process" (for K-3, 4-6, 7-9, and 10-12) were done by Clark Tibbitts and Wilma Donahue. Graphs and charts from the U.S. Administration on Aging were included that would make suitable transparencies for overhead projectors. Suggested pupil activities help students see themselves in roles and envisage how they will change through the life cycle. It is geared to the fact that they will be part of a generation with better health, education, and appreciation of leisure in an aging population. Sources for materials and films are listed. Other sections have an element of life-span consequences. The guide is a revision of a highly acclaimed one developed in 1965. The section on aging is new.

A good model for "aging" in the early years to young adulthood is that developed by Tanner (1973).

The Community School concept with its philosophy of involving the people affected in the identification and solution of problems (Minzey, 1972) provides an excellent model in which the older adult might experience fulfillment

in the later years. Compared to the traditional school K-12 that meets six to seven hours a day nine months a year five days a week, the community school includes all ages in its programming twelve months a year, twelve to eighteen hours a day, seven days a week to provide a comprehensive educational program for the entire community (Decker, 1975).

Death and Dying Education

Upon the advice of a thanatologist, and because of the limited number of days devoted to the unit, death and dying were not made a formal part of the instruction of the present research; the subject was not avoided, however, if it came up in discussion. From teaching the subject, he felt that its controversial nature in a death-denying society might create difficulties of acceptance of the unit. Aging education, itself, in the life-cycle perspective is in itself innovative (Jacobs, undated). In any extended study, however, it should be covered as a natural part of the life cycle. The acceptance of death by older people (Collette-Pratt, 1976) so beautifully expressed by Erikson, "healthy children will not fear life if their elders have integrity not to fear death" (1963, p. 269) could be a means of helping erase the stigma of death. The realization that life is finite can give the sense of urgency that pervades the present to put it in perspective (Kubler-Ross, 1975, p. 167). There is some evidence that people who fear death face the situation and help reduce

its terrors by supporting the elderly (Salter and Salter, 1976, p. 235).

When Psychology Today published a questionnaire on death, 30,000 completed ones were returned, which established a new record of responses, which they believed revealed an urgency to talk about death. So forbidden a topic has death become one third of the respondents could not recall from childhood a single instance of discussion of death within the family circle; in more than one-third of the families it was mentioned with discomfort; and in only thirty percent was death talked about openly (Schneidman, 1971, p. 44).

There are many excellent books recently published on the subject (Davis, 1973; Kavanaugh, 1974; Kubler-Ross, 1969, 1975). Children and Dying (Cook, 1974) is an invaluable resource on planning a unit for the elementary grades. Discussing Death: A Guide to Death Education (Mills, et al., 1976) is a teaching model for grades K-12 and includes a bibliography and suggested visual aids for each school level. There are many useful handouts and magazine articles, as well as children's literature (Baldrica, 1974b) dealing with the problem.

Education for Aging and the Arts

The arts in relation to education for aging hold two areas of interest: (1) the aging experience of the older artist as represented by his last works, and (2) the

education of the individual in the arts. The study of the great artist in old age can be the expression of the "mysterious depths of creativity" that can lead to the "path to the inner self" (Gantner, 1965). The number of artists in the visual arts, literature and music that have made notable contributions in old age is limited (Ayre, 1966; Lehman, 1953) but their works can illuminate the potential role of the arts in relation to some of the losses of old age. Many who retained creative powers into old age developed their art as a defense in a kind of transcendental pessimism. Some of the great works have been expressions of rage at growing impotence, as in the case of Yeats (Donoghue, 1971), but more often this disintegration of the body revealed the soul (Clark, 1972) and its urge for union with the cosmic.

At The University of Michigan, during the winter term of 1976, University Course 448 "Late Style in Art, Literature and Music" was an excellent example of how the study of creativity in the later years can help in the understanding of the full dimensions of humanity and the meaning of old age. The course as designed by Dr. Marvin Eisenberg, in fulfillment of his Collegiate Professorship to relate the history of art to other disciplines, brought together experts from all three areas. The speakers independently came to the conclusion that the works of the later years compared with earlier forms is characterized by:

(1) altered priorities

(2) a higher vantage point where the artist puts himself on the outside (similar to the difference between the figure and ground)

(3) themes of earlier works or "at the edge of" earlier works become central (a form of life review)

(4) intensified spirituality--intense emotionality

(5) desire to transcend the physical--search for transcendence-spiritual essence of man central

(6) conscious focusing of forces

(7) desire to merge with nature through feelings

(8) the theme that development comes from losses and small deaths with new growth emerging

(9) reduction of complexity of structures; language becomes more brittle in written works (each word must carry its own weight)

(10) diminished importance of technique

(11) details become less important--timeless and ageless qualities more important

The second area of contribution of the arts in relation to aging involves the education of individuals. Training in music, writing, drawing, painting, and artisanship can do much to prepare people for leisure through the entire course of life and later retirement. The arts "draw upon the imagination, which now tends to atrophy with time and disuse" (Butler, 1975). Writing can be a means of maintaining interest in the world, flexibility in facing daily reality, and continued active work (Sohngen, 1975). Borges, at age 76 (Ann Arbor News, 1976), transcended both age and blindness to "continue to find his freedom" in writing. The

arts can help in body transcendence so well described by Helen Keller:

> It was evident that space meant nothing to spirit. The fact that my little soul could reach out over continents and seas to Greece, despite a blind, deaf, and stumbling body, sent another exulting emotion rushing over me. I had broken through my limitations. . . . Deafness and blindness, then, were of no real account. They were to be relegated to the outer circle of my life. (Brooks, 1956)

Despite a body that a half-hour's conversation wearied, Florida Scott-Maxwell found old age an intensely moving experience (1968) which she was able to analyze in her diary.

One of the goals of education should be to help people develop their senses to their fullest capacity (Arnheim, 1972; Petersen, 1972). The fact that so many musicians retain remarkable hearing abilities into the nineties raises the interesting speculation: what effect does original training and later maintenance have on the use of the senses and perhaps on age-related losses?

The use of the arts in the life review process was graphically discussed by O'Connor (1975) in relation to the paintings of a 96-year-old man; "he returned through them to the timeless environment of what Erikson called the psychosocial moratorium, where, free from constraint, he found his center in the world, his identity and expression even of extinction." To be absorbed in the creative process is to exist in a timeless world of meditation, of

dream, of unconsciousness, of childhood.

Education in the arts and their techniques, giving access to the creative process, should be a major part of education from the earliest ages, and given a priority befitting the expression.

Life Cycle Study

Even though the scientific study of the life cycle is new, ancient philosophers and writers have long presented the stages of life as a major theme. Early Jewish civil and religious law as well as Confucian Analects saw the age of eighty as a culmination, possessing special qualities of strength and insight. Plato's view of the adult years centered on the obligation of the most educated to devote themselves to public service. The Bible looked at the achievement of old age, for the most part, as a great blessing and it was considered a reward for following the Lord's commandments (Psalms, 21:4; Proverbs, 3:1-2; 4:10; 16:31). This passage shows how old age, if accompanied by wisdom, is considered the culmination of life (Proverbs 3:13-18).

> Happy is the man who finds wisdom; for the gain from it is better than gain from silver and its profit better than gold. She is more precious than jewels, and nothing you desire can compare with her. Long life is in her right hand; in her left hand are riches and honor.

It is interesting to note that surrounding the passages that have to do with old age are verses that include other

times of the life cycle which would indicate an enfoldment of all ages in the community. But the other side, the fear of rejection, is also included: "Do not cast me off in the time of old age; forsake me not when my strength is spent" (Psalms, 71:9).

The true spiritual father of the life-cycle theory in modern adult developmental psychology is Carl Gustav Jung (Bradbury, et al., 1975, p. 12). He began as a disciple of Sigmund Freud, but broke away, for he felt it was ridiculous to believe that growth was finished and maturity reached by the end of adolescence. Development, to him, continued as long as life itself. He saw the life cycle in two stages: (1) before forty when an individual is coming to terms with the outer world, his ego, and the part of his personality that deals with external reality, and (2) after forty when development called "individuation," which is a process of inner growth, takes place (Jung, 1933). He felt that people should integrate the necessary suffering into their lives -- "to accept and bear it as part of their wholeness" (Jaffe, 1974).

The first systematic formal research of the life cycle was done by a team of Austrian psychologists headed by Charlotte Buhler in the twenties and thirties. By analyzing four hundred diverse biographies and autobiographies, they were able to classify five life span phases: (1) 0-15 (childhood); (2) 16-24 (expansion of dimensions); (3) 25-44 (culmination); (4) 45-64 (crisis of life meaning);

and (5) 65+. The fifth stage was characterized by four types of persons: two types were people who were satisfied with their lives and two types were persons who were dissatisfied. Of the former group, life satisfaction could take the form of continuing the activities of former years or of being content to sit back and relax. Those dissatisfied with their lives either had reached an unhappy point of resignation or were overwhelmed with feelings of frustration, guilt, and regret. Besides being the forerunner of Erikson's ego integrity versus despair, the two groups of successful aging foreshadow the activity theory (Lemon, Bengston, and Peterson, 1972) and the "disengagement" theory (Cumming and Henry, 1961).

Erik Erikson emerges as the giant in the field, and his insights have served as the genesis of more detailed studies of the later years. He saw each stage of life as presenting a crisis or a turning point between two distinctive elements, one positive and one negative, with a new virtue or vital strength emerging under favorable conditions. Half of his stages deal with childhood: trust versus mistrust; autonomy versus doubt; initiative versus guilt; and industry versus inferiority. Successful resolution of these personal encounters is largely dependent upon the significant figures in a child's life and leads to the virtues of hope, will, purpose, and competence (Erikson, 1976). The fifth stage encompassing adolescence presents the choice of identity versus identity (or role) confusion.

The virtue of being able to sustain loyalties, fidelity, is the reward for success. "The ethical strength" accumulated by the sixth stage should ideally make "love" the virtue in the conflict between intimacy and isolation, and prepare the person for the crisis of the seventh stage generativity versus self-absorption (or stagnation).

The final two stages are those that have greatest relevancy for the study of aging, but cannot be appreciated apart from the dynamic interaction of the sequence of earlier stages. Generativity involves a concern for future generations. A "belief in the species" which makes each child a welcome trust of the community (Erikson, 1963, p. 267). For successful resolution of the final stage of life, ego integrity versus despair and/or disgust with the emergent virtue of wisdom, a detached yet active concern with life bounded by death (Erikson, 1968) is needed. This detached vantage point is well expressed by Paul Tournier (1972, pp. 194-5).

> During the most active period of his life a man must deal with pressing tasks. The meaning of old age seems to me to lie in liberation from these immediate interests, and the opportunity of enlarging the interest of the heart and mind; I think that one may . . . call it . . . a passage from interested interest to disinterested interest.

One of Erikson's major contributions was the sense of identity that can come to fruition in Old Age. "Only in him who in some way has taken care of things and people and has adapted himself to the triumphs and disappointments

adherent to being . . . may gradually ripen the fruit of these seven stages." The "acceptance of one's one and only life cycle . . . as something that had to be and that by necessity, permitted of no substitutions, helps the individual become part of the ongoing cycle of generations with all of its intricacies and relationships to the maintenance of the social structure."

After Erikson published his work, others began to flesh out the outline, but never differing from his basic theories. Daniel Levinson at Yale became interested in the study of middle-aged men (35-45). He soon discovered as Erikson, that to understand this period, it was necessary to view the full life span. He sees the life cycle as a sequence of five major eras, each lasting about twenty years, with transitional periods of three to four years. His special interest is in "exploring how individuals and societies can create living conditions that foster development in adulthood" (Bradbury, 1975, p. 17).

Roger Gould at UCLA in his study of 524 middle-class men and women ranging in age from 16-60, found that each decade produced changes in individuals' values with the direction of change being toward greater tolerance of oneself (Gould, 1972, 1975). "A person does not possess the full range of his uniqueness after merely passing through adolescence -- the process of formation continues through stages of life that we are just beginning to recognize."

Peck (1968) felt that the psychological learnings and adjustments of the latter half of life needed further definition than Erikson's global eighth stage. Accomplishment in middle age requires an ability to reinvest emotions in other people and other pursuits. Particularly important is the valuing of wisdom as opposed to valuing physical powers.

In a study Bercheid and Walster (1972) found that the more attractive the woman had been in college, the less satisfied, the less happy, and the less well-adjusted she was twenty-five years later. They attributed it to a reliance on charms which had faded with the passing years. For women it is especially important (Sontag, 1972) that they anticipate a shift from physical to other attributes as part of life planning from an early age.

In old age Peck felt ego differentiation versus work-role, body transcendence versus body preoccupation, and ego transcendence versus ego preoccupation were the challenges. As part of human development, the recognition that physical decline is going to occur is essential, but mental and social powers can make it possible for the individual "to live so generously and unselfishly that the prospect of personal death -- the night of the ego . . . feels less important than the secure knowledge that one has built for a broader, longer future than any one ego ever could encompass" through children, contributions to the culture or through friendships. The inability to make this

type of value shift makes a person an excellent prospect for geriatric psychiatry (Clark, 1967).

Kohlberg, who has studied moral development cross-nationally and culturally devined six moral stages. Movement to the higher stages is developmental in the sense that some sustained responsibility for the welfare of others is a necessary prerequisite. He has been developing a metaphorical notion of a Stage 7 which involves contemplative experience of a nonegoistic variety in old age.

> It is when we begin to see our lives as finite from some more infinite perspective that we feel despair. The resolution of the despair which we call Stage 7 represents a continuation of the process of taking a more cosmic perspective. . . . It represents a shift from figure to ground. In despair we are the self seen from the distance of the cosmic or infinite. In the state of mind we . . . term Stage 7, we identify ourselves with the cosmic or infinite perspective, itself. (Kohlberg, 1973a, p. 501)

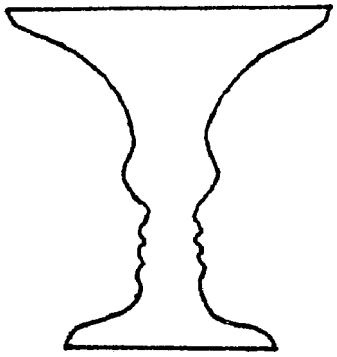


Fig. 2. Figure and Ground

Kohlberg has written widely in the field of education and feels that human development should be the goal of education (1971, 1972, 1973b).

McClusky (undated) takes a functional approach to the needs of Persons in the Later Years (PLYS) feeling that coping, expressive, contributive, influence and transcendence needs of older people can be achieved if they are successful in maximizing their "margin." Keeping a favorable balance of "power" over "load" requires a reinvestment of psychological "capital" in growth and development. Education throughout the life cycle can play a primary role in this challence. This concept is similar to Maslow's hierarchy of needs (1968, 1971), but much better operationalized to the needs of older adults.

Gutmann (1969) used a coping style to outline the life-span personality changes from active, to passive, to magical mastery; Reisman (1955) expanded his typology of the autonomous, the adjusted, and the anomic to the aging individual.

Bernice Neugarten has been involved in many studies at all ages of the life cycle. Her interesting observation shows her interest in the psychology of the life cycle:
If you think of life as a circus tent, some of the child psychologists remained seated too close to the entrance and missed much of the action going on in the main ring. Gerontologists will miss a view of the whole show if they remain seated too close to the exit. She has been interested in the developmental view of the adult personality (1962, 1973), the need to eliminate stereotypes (1971), age constraints (1965), and most recently in the rise of

new role models in what she terms the "young-old" (1970, 1974).

Much of Havighurst's research has paralleled that of Neugarten's in personality patterns (1968a) and social roles (1973), but he has been particularly concerned with the educational aspects in relation to developmental tasks (1952), continuing education (1976), including the necessity of creating a love of learning in children that will continue throughout life, and education for flexible life styles (1969), as well as the design of supportive environments (1968b).

Changes in motivation have been studied by Buhler in her later years (Buhler and Massaria, 1968), a student of hers, Frenkel-Brunswik (1968), and Kuhlen (1959, 1962, and Kuhlen and Johnson, 1966).

According to Butler, the two major developmental tasks of the final phase of life are life review and preparation for death.

> The life review, a looking-back process that one sets in motion by anticipating death, can be a major step in personality development. Memory serves our sense of identity: it provides continuity, wisdom, and serenity. (Butler, 1971, p. 51)

He feels that the creative person is in constant self-appraisal with a strong desire to reintegrate his experience on some higher order.

> Our society regularly misuses, or refuses to use, the experience, skills, knowledge, and judgment

> of the aged. Were we to establish a national archival program to preserve on tape the lives of our creative persons, we would also enhance our understanding of memory and old age as well as creative life. (Butler, 1975, p. 89)

Archival memories of the local elderly were tapped by the young people in Georgia under the direction of an imaginative teacher and the Foxfire Books were the result (Wigginton, 1972, 1973). Participation by the young in the life review process might give the aged an audience for an important life event, and give the young a formula for living.

A book such as Gramp (Jury and Jury, 1976) illustrates the frailty of the human condition at the end of life, and how a loving family can offer the support, acceptance, and understanding that dying in dignity requires. As pointed out by Carol Hollenshead (1976) "We stare and stare at these pictures for the intriguing circle of life that they represent." She suggests that the message of this book makes us reevaluate the meanings of self-sufficiency, independency, and power symbols. "Rather than rockets blazing our triumphant paths to the moon, perhaps we are more like flowers in a garden -- we grow, we blossom, we wither and we die. And there is a season for all things, a time for growth and a time for death. Each has its rightful moment in the pattern we call 'life!'"

Dr. Kubler-Ross has made a study of the dying person and calls death the final stage of growth.

> Death is the key to the door of life. It is through accepting the finiteness of our individual existences that we are enabled to find the strength and courage to reject those extrinsic roles and expectations and to devote each day of our lives to growing as fully as we are able.

Education for aging could help "human beings understand their place in the universe," and help them "grow to assume that place." Growth can take place up until death and beyond (Daniel, 1975).

All-Pervasive Nature of Gerontology

Because of the multi-disciplinary nature of gerontology (Beattie, 1974), and the desirability of using aging education in an all-pervasive approach (Jacobs, undated), many subjects not already mentioned lend themselves to having aging concepts included, and the resources are plentiful. A few of them are included here.

Psychology classes should stress the development of and the continuity of the personality over the life-span (Allport, 1961; Anderson, 1957; Birren, 1964b; Bortner, 1967; Cumming and Henry, 1961; Hsu, 1961; Lowe, 1972; Maddox, 1966; Neugarten, 1962, 1973; Pressey, 1957, 1963, 1974; Pressey and Kuhlen, 1957; Pressey and Pressey, 1967; Reichard, Livson and Peterson, 1962; Williams and Wirths, 1965). There are good texts on the psychology of aging (Birren, 1964a, b, 1968; Bromley, 1966).

Anthropology provides an opportunity to look at cultural differences in viewing the aging process (Clark,

1967; Kyucharyants, 1974; Leaf, 1973a, b; Medvedev, 1974; Shanas, 1968; Simmons, 1945) giving support to the utility theory of aging that hypothesizes that having useful roles and status in the society prolongs longevity (Hamlin, 1967).

The biology of aging is covered at the level for a high school unit by Jacobs (1972a) and in detail suitable for a chemistry or biology class by Sobol (1966) and Woodruff and Birren (1975).

The political alienation of the elderly (Miller, Brown, and Raine, 1973), and their growing strength as a pressure group (Kleyman, 1974; Kuhn, 1973) should be included in policital science and social studies classes.

Philosophy courses would benefit from the insights of Philibert (1972, 1973).

Much of the aging literature would make interesting additions to sociology classes. For example, should the aged be classified as a minority (Streib, 1965) or as a subculture? (Rose, 1965) Roles and the elderly are covered in Graney (1975), Gumbrium (1976), Havighurst (1973), and Neugarten (1974) and age cohort analysis by Riley and Waring (1976). The grandparent role is delineated by Cohen (1975), Kahana (1970), Kalish (1967) and Robertson (1970, 1976) while family structure interests Sussman (1968). Other Sociological topics are: age-appropriate behavior (Cameron 1972b, Drevenstedt 1976, Fry 1976; Kastenbaum 1972, Neugarten 1965, Riley and Waring 1976, and Sabatini 1975; the generation gap (Cameron 1971, 1972a, 1972b, Friedenberg 1969,

Fengler 1972, and Kalish 1967, 1969); the socialization of women (Kline 1975 and Sontag 1972); and sexuality (Burnside 1975a, 1975b, Masters and Johnson 1966, and J. Peterson 1975).

The body of information in aging is growing and there is no lack of material that could be used as it is, or preferably worked into audio-visual materials suitable for students of various ages.

Summary

Chapter Two has been divided into two parts, one devoted to research in attitudes on aging and the other to education in aging. The first part reviewed the literature related to attitudes, attitude change, and attitudes revealed in literature. The lack of standardization of instruments has contributed to mixed and inconclusive results. In general, at least some acceptance of negative stereotypes was prevalent indicating a need for gerontological instruction in the schools as a means of eliminating misconceptions of the older population.

The second section outlined past programs in aging education and proposed content areas and formats that can be used for aging education as an all-pervasive part of the school curriculum.

Chapter Three will deal with methods of data collection, plan of the unit, and hypotheses.

CHAPTER III

PROCEDURES AND METHODS OF DATA COLLECTION

The conduct of the investigation called for the application of a standard research design for the purpose of data collection. More specifically, it involved a comparison of the performance of experimental and control groups as measured, in the case of the experimental group, by tests administered before (pre) and after (post) exposure to a unit of instruction in gerontology, and in the case of the control groups as measured by the administration of the same tests before (pre) and after (post) the same period of time used by the experimental groups but during which no instruction for the control group took place.

In the terminology of experimental procedure, the instructional unit in gerontology was the independent variable while the measure of information (cognition), attitudes toward and perceptions of aging, and unit evaluation constituted the dependent variables.

The subjects of the investigation were students in grades 10-12 in a large high school located in a midwestern city. Five classes in Human Relationships served as the experimental group and five classes in Psychology constituted the control group.

In general, the members of the classes in Psychology tended to be participants in the high school's college preparatory program, while the members of the classes in Human Relationships were more representative of the student body of the high school as a whole, even including members from the group of the Educable Mentally Impaired.

One of the requirements for conducting research in the public schools of the city in which this investigation was located, involved securing the approval from the appropriate administrative committees of the research project and the methods and instruments that would be used in its implementation.

Another stipulation for conducting research in the project school was that participation by the students is voluntary. Families must be notified of their student's involvement in the research, and in so doing give the family an opportunity to notify the student's teacher to excuse their son or daughter from participation, if they so desired. As a consequence letters explaining the project were mailed to the parents (See Appendix A). The response to this overture was satisfactory.

As indicated in the review of literature in Chapter II, the investigation of the impact of gerontological instruction on the learning variables of elementary, secondary and post secondary students has been extremely limited. Moreover, such investigations as have been undertaken, have often been confined to the measurement of a single dimen-

sion, usually that of attitude, and often with a negative result.

This fact led the researcher to adopt a more versatile approach to the study design. More specifically it suggested the measurement of as many variables as possible, that may be regarded as legitimately relevant for the purposes of the research project without at the same time imposing unduly on the participating students' span of interest and discrimination. These considerations, therefore, account for the range of dependent variables contained in the following descriptions of the instruments used in the investigation.

Instruments Used

Student Demographic Inventory. This form was adapted from the one developed by Karl Feltman for his dissertation, "The Development and Evaluation of a Unit on Gerontology for Secondary School Students" (1974). This provides information on significant variables such as age; grade; sex; parents' ages, occupation, and education; contact with older people; number of, distribution of, and contact with grandparents; and previous experience in gerontology.

Measures of Dependent Variables

Cognitive (Information) Test. This test was administered to both the control and experimental groups on a

pre and post-basis. Because of the short duration of the unit, ten multiple choice and fifteen true and false questions were used. The questions were general and basic to the study of gerontology and were particularly stressed in the unit. The tests were hand scored with a "1" given for a correct answer and a "2" for no or an incorrect answer. A total score was also computed and was part of the coding.

Tests of Attitude

1. Aging and the Aged. This was a questionnaire developed by the Ball State Education on Aging Program. It was adapted from the one used for the teachers in the program to be used by them in testing attitudes of high school students and was validated for use with this age group. Originally 120 stereotypic statements were presented to two groups: one composed of professionals in the aging field and assumed to have positive attitudes toward the elderly and the other a group reputed to have negative attitudes. The forty statements that showed the most consistent difference between the two groups were used to make up the questionnaire. Twelve questions were dropped by the Ball State statistician for failure to meet part/whole correlation tests. These same questions were also not included in the total favorability score by the researcher. An additional item (number 10) also was not scored because of ambiguity in favorable direction. The questionnaires were hand scored with the direction of favorability made consistent

before coding. A "5" was the most favorable rank an item could receive so that for the 27 items that were coded, 135 was the highest possible sum of favorability scores. The numbering on the item analysis of the Ball State questionnaire in Table 11 shows which questions were deleted.

2. Opinions About People. This is an attitude scale developed by the Ontario Department of Social and Family Services, Office on Aging, in cooperation with the Ontario Welfare Council. Thirty-two statements were rated by the students on a 1-9 scale from strongly agree to strongly disagree. The rank accorded an item was combined with the weight assigned to give a weighted score in seven attitudes. Two weeks before the test was to be given, the writer heard that Dr. Tom Hickey at Pennsylvania State University had been encountering some difficulties in using this instrument. In a telephone conversation, he indicated that he had had problems with the weighting and was doing his own factoring. Even though it has many shortcomings, he knew of no instrument that was any better and he had used it widely himself (Hickey, 1975).

The questionnaires were hand scored with the total for each attitude coded. Not all items were utilized in the attitudes. Some items were used in more than one attitude. The attitudes were scored according to directions in the manual, page 22. The weighting and the fact that some items were used in more than one attitude, and that they were needed to get a comparable attitude total, made a

skipped item a problem. Because the type of scoring did not require a rating analysis of each item, the usual method of using the group mean for a missed item could not be used. If only one question were omitted, the rating given on the other test was used. For example, if a student missed question 23 on the post-test, his pre-test number on the scale was used, and a record kept, so that the attitude could be calculated. The test was not used if more than one item was missed. Fortunately most students completed all items. The questionnaire, including the scoring and the Chart of attitude scales are contained in Appendix B.

Perceptions of Age

Perceptions of Age. This is a questionnaire that was adapted from "A Unit on Aging for a High School Curriculum" (Cameron, undated). It was used to provide an opportunity for the students to express in their own words, how the aging process, life cycle, and prospects of the later years appear to them. Before being used for this study, the instrument was given to and discussed with a class in Career Development (which was an elective at an alternative high school in the same city for grades 10-12) to see if the language and concepts were easily understood. It was then administered to both groups in the research study on a pre and post basis to see if there had been changes in the student's interest in and ability to explicitly envisage themselves in the later years.

Evaluation of Unit

Student Evaluation of the Unit. This was accomplished by the use of three instruments. The first was composed of twelve questions involving the students' indicating on a three dimension scale "very much so," "somewhat," and "not at all," how they felt about the unit. The second was to rank in order the effectiveness of the various methods of conveying information on aging. The third was to evaluate the individual media resources used during the unit in the cognitive and affective domain and whether or not they would recommend its use for students their age. A copy of these instruments is presented in Appendix B.

Method

Once the experimental population was found, it was necessary to design the instructional unit with the assistance of the two teachers involved. The principal of the cooperating school was consulted and shown copies of all of the instruments that would be used. He and all the teachers could not have been more cooperative (See letter in Appendix A). It was decided that the researcher should teach all sessions in order to maintain uniformity among the five participating classes in the experimental group. The fact that the researcher had a provisional certificate from the State of Michigan in social studies for grades 7-12, removed all possibility of criticism on grounds of

lack of credentials. It was decided that only the testing portion of the unit would fall within the student's prerogative of refusal to participate, as the unit represented only an expansion of a subject that was already part of the course.

Chart 1 shows the order of events in the unit. The control and then the experimental groups were given the pre-tests. All of the instruments with the exception of the Student Evaluation of the Unit were given to both groups at both the pre and post-testing periods. With the exception of the Student Demographic Inventory, all of these tests were placed in random order in separate folders for each student, to eliminate order as a variable affecting the results. The demographic material could be completed during either the pre or post-test period. In practice, having done the tests once, the post-testing went more quickly. Most of the demographic material was completed at the second testing period.

Each student's folder and every instrument was identified by a three part number. The first part represented hour of class; the second one was a "1" for the control group and "2" for the experimental group; the third was the student identifying number assigned by the teacher. Students' anonymity was preserved at all times.

When the pre-testing was completed, the unit of gerontology was taught to the experimental group only; its content and progression are shown in Chart 1 and outlined

Chart 1

Unit of Gerontology
Daily Plan

Monday	Tuesday	Wednesday	Thursday	Friday
		Pretesting Control Group	Pretesting Experimental Group	Demography of Aging Film: Weekend Lecture Handouts
Roles of the Older Adult Two older people from government-sponsored programs	The Family & Technology Film: What Price Progress? Study questions	Stereotypes of Aging Filmstrip: Perspectives on Aging: Myths and Realities Discussion	Economics of Aging Films: To Market, Mrs. "P" Lecture Handouts	Biology of Aging Filmstrip: Perspectives on Aging: Physical Changes and Their Implications Discussion
Sensory Loss & Environmental Design Slides Video-tape	Older Person and the Family Film: Peege Staff member Milieu Therapy Project Lecture Discussion	Agism--Political Potential Elderly Video-tape: Maggie Kuhn Discussion	Intellectual Potential of Elderly Older Woman in class-Poet, world-traveler, conservationist	Life-long Development Film: Cold Spring Idea Lecture Discussion
Post-Testing Experimental Group	Post-Testing Control Group			

under the plan of the unit. There was no effort made to keep the experimental and control groups from coming in contact with each other.

With the conclusion of the unit on aging, the same tests were administered again. For the Perceptions of Age--Questionnaire, the students of both groups were able to refer to what they had written in the pre-test and decide whether intervening time and/or the unit, where applicable, made them feel differently about any of the questions. In retrospect, it might have been better procedure to have had them do all tests independently; but the purpose was, at least for the experimental group, for them to evaluate whether the intervention of a unit on aging had altered any of their perceptions of aging, particularly in being able to explicitly envisage themselves in the later years. The Student Evaluation of the Unit was given to the experimental group only.

Plan of the Unit

The unit of gerontology was taught to five classes in Human Relationships at a large high school in a mid-western city. Both because of the nature of the subject matter, and the type of class, the plan of the unit was concept-oriented. Since most researchers have been concerned with the early internalization of negative stereotypes, it was assumed that most of the students had some preconceived generalizations of aging and the aged. The

format was aimed at imparting major facts in the field of Gerontology in a way that would carry a potential of new learning and new conceptualization of the developmental process.

It was also decided that media would be the major bearer of the information. This was done to (1) standardize the classes as much as possible in the input they would receive, and (2) be able to test what media is most effective in the field for senior high school students.

The major theme was one of lifelong development; the concept that there is a continuity to the life span that begins in early life, continues through middle age and culminates in the late years (McClusky, undated, p. 349). Based on the model presented in this article "that the last of life at its best should be a guide for education at all the earlier stages of the life leading thereto," every day a circle was drawn on the blackboard representing the life cycle; and every day the question was asked, "What can the later years in relation to the subject of the day teach us about how life should be lived during the earlier years? For example, "What can we learn from the biological changes with aging that will guide us in the earlier years?"

Another concept that was stressed was changing social roles with aging and the need to develop, maintain and improve social skills throughout life. For a class in human relationships, family roles and their evolution, as well as other personal interactions were emphasized in the unit.

The unit, including testing, required thirteen class periods for the experimental group. Two class periods, one for the pre-test and one for the post-test, were used for the control group. A brief description of the content follows and is also included in Chart 1.

The Independent Variable -- Outline of Instructional Unit

First Day

Topic: Introduction and Demography of Aging and Modernization

Goal: To be able to define what is an aging population (Question 18 in the Cognitive Test) and describe some of the implications, particularly as they affect human relationships. The student should be able to answer correctly questions relating to the following:

1. Sex ratio of the later years (Question 1)
2. Number of men in labor force compared to 1900 (Question 14)
3. Marital status of older men and women (Question 16)
4. Percent of population 65 and older (Question 5)
5. Rate of growth of population of 65+ in relation to rest of population (Question 2)
6. Life expectancy at 65 today compared with 1900 (Question 15)

Media: Film Weekend (a brief description is in Appendix D)

Handouts: Cowgill's model of "Aging and Modernization" (Cowgill, 1974) (In Appendix C)
New Facts About Older Americans (U.S. Department of Health, Education and Welfare, 1973)

Lecture

Concepts and Issues: How the vectors set in motion by health technology, economic technology, urbanization, and education lead to a lower status for the aged (Question 7 in Cognitive Test).

The work ethic and the cult of youth as American values but not necessary elements in modernization.

Life expectancy at birth has been extended greatly, but at 65 years less than 2 years -- more people living into the later years is a result of reduced infant mortality and fewer deaths from infection and communicable diseases (Questions 15 and 17).

Concepts in Film: abandonment and infantalizing of many elderly -- the need of the elderly to share human experiences, particularly in the life review process.

Second Day

Topic: Older People in class as representatives of programs providing fulfilling roles for elderly

Goal: To demonstrate the ability of older people to fill meaningful roles in society, if those roles are available, and the benefit of such service to the older person and to society.

Guests: Female -- Foster grandmother in Action program in a head start setting; she receives a small income for her services. She has been providing care for her mentally retarded son, the last of six children, and is in the process of finding a new situation for him, anticipating the time when she no longer can care for him. She is a widow with the chronic condition of diabetes for which she administers her own shots. Even though she takes a provided bus to her job, she drives her own car, and is very active at 76. She is deeply religious with an optimistic philosophy of life that involves service to others.

Male -- Volunteer in Title III Teaching-Learning Community (described in Review of Literature). He has been retired for five years and is 67 years old; he is married to a woman who is still working so that he travels widely by himself, having made a trip around the world the year before. He has executive responsibilities with the T-LC as well as working with the children. He ushers at University concerts and plays when

in town and is planning a cable TV talk show for Seniors for which he will be the moderator. He is enjoying his "retirement" and has an outgoing, captivating personality. He drives his own car, often long distances. He has the chronic condition of arthritis that bothers him a great deal, but he has learned to live with it.

Handouts: Partnership for Older Americans (U.S. Department of Health, Education and Welfare, undated)

Concepts and Issues: The majority of the elderly have at least one chronic condition, but they suffer from no interference with their mobility (Questions 13 and 25 in the Cognitive Test).

The way older people deal with problems is dependent upon past coping capacities, and philosophy of life.

The fulfillment and rewards to the older person in having meaningful volunteer and part-time roles.

The value to society of having models of successful aging.

The importance of transportation to the elderly in being able to fill meaningful roles (Question 21 on the Cognitive Test).

Third Day

Topic: The Changing Family and Values in a Technological Society

Goal: To put aging in the macro social-psychological setting "to grasp the interplay of man and society, of biography and history, of self and world." (Mills, 1959, p. 4)

Handout: Study Questions to be completed by students to show comprehension of the topic and goal (in Appendix C).

Concepts and Issues: How human relationships, particularly the family and intergenerational ones, have been affected by technology.

The cohort differences in values as a result of being socialized at different times.

The alienation that can be caused in the young

by over-choice and rootlessness of mobility patterns.

The psychological cost of age-segregation to all members of society, but particularly the young.

Fourth Day

Topic: Myths and Realities -- Aging and the Aged

Goal: To explore some of the stereotypes that are related to the aging process and older people in relation to facts.

Media: Filmstrip, Perspectives on Aging: Myths and Realities (Concept Media)

Discussion

Concepts and Issues: The fact stereotypes of the aged are trying to describe the most diverse and individualistic age segment of the life span (McClusky, undated).

The self-fulfilling nature of labeling the elderly in terms of their self esteem.

Fifth Day

Topic: Economics of Aging -- oriented to human relationships

Goal: To be able to briefly describe the present financing of the Social Security system and to understand the demands an aging population puts upon it; to realize basic societal decisions regarding the allocation of resources will have to be made as to level of support for the older members of society and the options open -- for example, revising mandatory retirement age, increasing contributions from present sources, utilizing general taxation.

Media: Trigger films (developed by the Institute of Gerontology -- University of Michigan-Wayne State University -- for the 1971 White House Conference on Aging.)

"To Market" (brief descriptions are in
"Mrs. 'P'" Appendix D)

Lecture

Handouts:

1. A Brief Description of Medicare, January 1973
2. Consumer Guide for Older People, January 1975
3. Estimating Your Social Security Retirement Check, June 1974
4. Pocket Guide to Supplemental Security Income, December 1973
5. Your Social Security, August 1974
6. Your Medicare Handbook, January 1975

All are publications of the U.S. Department of Health, Education and Welfare, Social Security Administration, with the exception of #2 which was published by the Administration on Aging with the Food and Drug Administration and the President's Committee on Consumer Interests.

Concepts and Issues: Many segments of the population, widows, some members of minority groups, those with a history of unemployment or in work not covered by Social Security representing about 25 percent of the 65+ population live on incomes below the poverty line (Question 9 in the Cognitive Test).

Blacks because of accumulated consequences of discrimination have a lower life expectancy (Question 11 of the Cognitive Test).

The growing number of older people in the population calls for a rethinking of the present financial base of equal contributions from employer and employee and the allocation of societal resources (Question 10 of the Cognitive Test).

Adequate income is an important essential but attitudes and feelings of esteem and purpose are more critical elements of life satisfaction in the later years (Question 14 of the Cognitive Test).

Inflation presents serious problems for the elderly; proper nutrition is made difficult by economic factors including availability of transportation.

Discrimination against the elderly in employment; emphasis placed by society on physical attributes that may not be central to accomplishing job.

Sixth Day

Topic: Biological Aging

Goal: To understand the physiological changes that accompany the aging process.

Media: Perspectives on Aging: Physiological Changes and Their Implications (Concept Media)

Discussion

Concepts and Issues: Physical changes do occur, but not at the same rate or chronological age for all people.

These changes are not synonymous with illness; "High level wellness" (Jacobs, undated b) can be achieved at all ages.

There is much that individuals can do by way of nutrition, health care, exercise and purposeful activity to influence the rate and nature of the biological changes, but in the present state of science cannot prevent the aging process.

Seventh Day

Topic: Age Related Sensory Losses and Environmental Design

Goal: To sensitize the students to the sensory losses experienced in the normal aging process and to help them understand the implications in terms of their relations with older adults and to appreciate the importance of the design of the environment in relation to these losses.

Media: Empathic model slides showing normal daily scenes as seen by the twenty-year-old eye and the normally aged seventy-year-old eye.

Video-tape -- Simulated Sensory Loss

Both developed by Dr. Leon A. Pastalan -- Institute of Gerontology, University of Michigan-Wayne State University.

Concepts and Issues: Sensory loss can create physical and psychological barriers to the elderly in negotiating their environment.

Supportive environmental design can increase the physical and psychological security of the older adult and make it possible for him to remain a part of the community.

Sensitivity to the sensory losses can help in understanding the older adult and increase the possibilities of meaningful communication.

Sensory loss to the psychologically healthy older adult that causes a constriction of the life space and a forced internalization can actually be the catalyst in evolving a philosophy of transcendence over physical and material aspects of the human condition.

Eighth Day

Topic: The Older Person in the Family

Goal: To help students understand the role of life review in the life of the older person, to help them communicate with older members of their family, including those that reside in institutions.

Media: Film: "Peege" (a brief description is in Appendix D)

Staff member from Milieu Therapy Project, Institute of Gerontology, University of Michigan-Wayne State University, who spoke about programs at Ypsilanti State Hospital.

Concepts and Issues: An older person can be understood only in terms of his whole life; the reminiscence of the old represent a major means of their trying to assess the meaning of their lives and can be a resource for guidelines for living for the young.

Five percent of the population 65 and over live in institutions of any kind (Question 4 of the Cognitive Test), but this still makes a large number of older adults, particularly those in the last years of life who are the most physically and psychologically vulnerable.

Changes in the family structure and societal mobility patterns make it more likely for generations to live separately.

The growing number of older people coupled with the dynamics of a technological society have made the Nursing Home a reality for the care of the elderly, particularly in the later years of life.

New research reports that close kinship networks

are maintained (Question 22 of the Cognitive Test).

People never outgrow their need for warm human relationships; even seemingly senile older people respond to genuine interest and love.

Ninth Day

Topic: Agism in an Aging Population

Goal: To be able to understand what discrimination because of age means, to relate it to the later years and how it can affect human relationships; to begin to assess the political consequences of an aging population.

Media: Video Tape of Maggie Kuhn, head of the Gray Panthers delivering a speech in Milwaukee, Wisconsin.

Discussion

Concepts and Issues: The growing number of older people have needs that are not being met and they are beginning to get organized to become articulate spokesmen in their own behalf.

The importance of the involvement of older people in programs designed for them.

Rationale for the claim that the elderly should have upon community resources.

The political consequences of an aging population.

Tenth Day

Topic: Intellectual Potential of the Older Adult

Goal: Based on the new research findings that contradict the Thorndike curve, to realize that learning can be a life-long pursuit and process with many aspects of intelligence increasing with development (Question 8 of the Cognitive Test).

Guest: An 86-year-old woman who during her life has traveled and/or lived all over the world. She and her husband, who had recently died after a long illness, were medical missionaries in China where their children were born and spent their

early lives. She is a poet, having just finished directing a dramatization of her poetry at her church; she read selections from her published book to the class. Conservation has been a life-long interest, inherited from her father; it took her to a conference and fascinating adventures in England, Scotland, and Wales as a young woman. Every summer she spends in the northern part of the state on her family's land, planting trees that she has or plans to leave to future generations.

Concepts and Issues: Intelligence can be maintained into advanced old age, and with the past experiences of a life rich with memories can take on the quality of wisdom.

Interests developed while young can be sources of life-long dedication and development.

Education for older adults is a major means of enabling them to achieve full meaningful lives and be a societal resource.

Final Day

Topic: Life-long Development

Goal: To demonstrate models of life-long development.

Media: Film: "Cold Spring Idea" (a brief description is in Appendix D)

Lecture: Erikson model of successive ego stages whose successful resolution leads to ego integrity and ego transcendence and acceptance of death.

Pictures of father's involvement at ages 87-89 in exercise program that proved not only can previously sedentary men benefit from exercise, but oxygen transport capacity to the brain can be improved with benefit to mental performance (Question 20 of the Cognitive Test).

Concepts and Issues: Successful aging involves the ability to readjust the focus of one's life and capability of reinvestment of psychological attachments, but it can be done within a framework of continuing growth toward ego integrity.

The later years can be the flowering of a lifetime of experience into wisdom.

> Even coping with the physical and sensory losses can be the "launching pad" for a deeper sense of worth and source of realization of ultimate values and personal freedom.
>
> The later years can be the best or one of the best times of a person's life dependent upon attitudes toward life, learning, coping, and to the process of aging itself.
>
> The assets and liabilities of the later years are developed in the earlier decades, beginning even before conception with change possible at every stage.
>
> The life cycle is not only a circle, it is a spiral, where for completion the end joins the beginnings of the next generation, and the cycle begins anew.

Discussion of Unit Plan

The confinements of time made it impossible to cover in depth all of the aspects of aging that would be valuable to a class in human relationships, and the course, of which this unit was a part, required the emphasis of some aspects of the field to the neglect of others. The book used for the course (Westlake, 1972) looks at human relationships from a life-cycle, developmental perspective, so that the students were familiar with this approach, which was most helpful. The unit presented as part of this investigation replaced the study of aging which was usually covered at the end of the course, as the final stage of the life-cycle.

The Cognitive Test questions were designed by the researcher to test whether certain basic facts and concepts had been learned, with the hope that knowledge would be

transformed into some change in attitudes.

Hypotheses

The influence of the Unit of Gerontology was operationalized to test the following hypotheses:

Research Hypothesis: Significant differences in student knowledge, attitudes, and perceptions of aging between the experimental and control groups favoring the experimental group will be the result of the introduction of a unit of Gerontology at the secondary level.

Null Hypotheses: The hypotheses of no significant difference, to the .05 level of confidence, for the study are the following:

Hypothesis 1: There will be no difference between the experimental and control groups in the pre and post-test scores of knowledge as measured by the Cognitive Test.

Hypothesis 2: There will be no difference between the experimental and control groups in the pre and post-scores of attitude as measured by the Ball State Aging and Aged Questionnaire.

Hypothesis 3: There will be no difference between the experimental and control groups in the pre and post-test scores of attitude as measured by Opinions About People.

Hypothesis 3.1: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 1, "Realistic Toughness Toward Aging."

Hypothesis 3.2: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 2, "Denial of Effects of Aging."

Hypothesis 3.3: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 3, "Anxiety About Aging."

Hypothesis 3.4: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 4, "Social Distance to the Old."

Hypothesis 3.5: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 5, "Family Responsibility Toward Aged Parents."

Hypothesis 3.6: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 6, "Public Responsibility Versus Unconcern."

Hypothesis 3.7: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 7, "Unfavourable* Stereotype Versus Acceptance."

Hypothesis 4: There will be no difference between the experimental and control groups in the pre and post-test scores on the Perceptions of Age Questionnaire.

Summary

Chapter Three has presented methods of data collection, plan of the unit of instruction, and hypotheses.

The research design employed by the investigation involved the use of experimental and control groups who responded to a series of tests (dependent variable) administered on a pre and post basis. An instructional Unit of Gerontology constituted the independent variable in the case of the experimental group, and no unit of instruction was available to the control group. The subjects of the investigation were students in a large midwestern high school.

Chapter Three has also outlined the unit of instruction, namely the independent variable, in substantial detail, as well as the instruments employed to measure the

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*Spelling used in Opinions About People (Form A) Guidelines and Manual (1974).

acquisition of information, status of attitudes toward and perceptions of aging, and method of unit evaluation as the dependent variables.

Chapter Four will be devoted to a presentation of the results of the investigation.

CHAPTER IV

FINDINGS

Introduction

The major purpose of this study was to obtain as varied and in-depth reading of high school students as possible, of the influence of a unit of instruction in Gerontology on the attitudes, knowledge, and perceptions of the aging process, the aged, and their own aging.

Demographic Characteristics of the Sample

The demographic variables for the students were collected using the Student Demographic Inventory designed by Karl Feltman for his dissertation on developing and evaluating a unit of gerontology for students at the secondary level. The characteristics of the experimental and control groups are shown in Table 2.

The major way in which the groups differed was in their age and grade make-up. A chi-square was performed to test for significant differences beyond probability. The chi-square statistic was 75.5 and the significance .0000. As can readily be observed, the majority of the experimental group were sixteen and under, while the control group were seventeen and older. This difference

TABLE 2

DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

Category	Classification	Both Groups		Control Group		Experimental Group	
		%	#	%	#	%	#
Age	15	14.4	21	0	0	24.7	21
	16	24.7	36	0	0	42.4	36
	17	30.1	44	42.6	26	21.2	18
	18	29.5	43	57.4	35	9.4	8
	19	.7	1	0	0	1.2	1
Missing			1				1
Sex	Male	37.0	54	41.0	25	34.1	29
	Female	62.3	91	59.0	36	64.7	55
Ethnic Bkgd.	Caucasion	88.6	101	95.8	46	83.3	55
	Black	6.1	7	0	0	10.6	7
	Spanish-Speaking	2.6	3	0	0	4.5	3
	Arabic	.9	1	0	0	1.5	1
	Other	1.8	2	4.2	2		
Missing			32		13		19
Religion	Protestant	47.5	57	33.3	17	58.0	40
	Catholic	17.5	21	15.7	8	18.8	13
	Jewish	1.7	2	2.0	1	1.4	1
	None	27.5	33	37.3	19	20.3	14
	Non-Western	.8	1	0	0	1.4	1
	Other	5.0	6	11.8	6	0	0
Missing			26		10		16

TABLE 2 (Continued)

Category	Classification	Both Groups		Control Group		Experimental Group	
		%	#	%	#	%	#
Area of Birth	Northeast	6.4	9	6.9	4	6.0	5
	Midwest	85.8	121	87.9	51	84.3	70
	South	2.1	3	3.4	2	1.2	1
	Border States	1.4	2	1.7	1	1.2	1
	West	.7	1	0	0	1.2	1
	Foreign Country	3.5	5	0	0	6.5	5
Missing			5		3		2
Grade	10	30.8	41	0	0	53.9	41
	11	15.8	21	5.3	3	23.7	18
	12	53.4	71	94.7	54	27.4	17
Missing			13		4		9
Career Ambition	Housewife/semi-skilled	6.7	6	9.1	3	5.4	3
	Skilled	10.1	9	15.1	5	7.2	4
	Managerial	10.1	9	15.1	5	7.2	4
	Professional	73.0	65	60.6	20	80.4	45
Missing			57		28		29
Residence	City	89.1	122	87.9	51	89.9	71
	Rural	9.5	13	8.6	5	10.1	8
	Other	1.5	2	3.4	2		
Missing			9		3		6

TABLE 2 (Continued)

Category	Classification	Both Groups		Control Group		Experimental Group	
		%	#	%	#	%	#
Area Lived Most of Life	City	72.7	101	63.3	38	79.7	63
	Suburban	18.7	26	30.0	18	10.1	8
	Rural	8.6	12	6.7	4	10.1	8
Missing			7		1		6
Length of Residence	0-5 years	16.8	24	8.1	5	22.8	19
	6-10 years	23.7	34	21.3	13	25.2	21
	Over 10 years	59.8	86	70.5	43	51.8	43
Missing			2				2
Lived with person 60+	Yes	23.3	34	24.6	15	22.4	19
	No	76.0	111	75.4	46	76.5	65
Missing			1				1
Living Grand-parents	Yes	87.0	127	90.2	55	84.7	72
	No	13.0	19	9.8	6	15.3	13
No. Grand-parents	1	27.6	35	23.6	13	30.6	22
	2	26.0	33	29.1	16	23.6	17
	3	28.3	36	29.1	16	27.8	20
	4	18.1	23	18.2	10	18.1	13
Missing			19		6		13

TABLE 2 (Continued)

Category	Classification	Both Groups		Control Group		Experimental Group	
		%	#	%	#	%	#
Relation-ship of Grand-parents	Maternal Grandfather	50.0	63	46.3	25	52.8	38
	Maternal Grandmother	75.6	96	76.4	42	75.0	54
	Paternal Grandfather	42.1	53	46.3	25	38.9	28
	Paternal Grandmother	67.7	86	70.9	39	65.3	46
Visit Grand-parents	Weekly	11.9	15	7.3	4	15.5	11
	Bi-Weekly	11.1	14	14.5	8	8.5	6
	Monthly	20.6	26	23.6	13	18.3	13
	Yearly	37.3	47	36.4	20	38.0	27
	Seldom	18.3	23	16.4	9	19.7	14
	Other	.8	1	1.8	1		
Missing			20		6		14
Parents Living	Father	97.3	142	100.0	61	95.3	81
	Mother	97.9	143	100.0	61	96.5	82
Missing			7				7
Father's Age	-39	14.1	19	5.1	3	21.33	16
	40-45	26.0	35	32.3	19	21.33	16
	46-50	34.2	46	33.89	20	34.67	26
	51-55	15.7	21	20.4	12	12.0	9
	56-72	18.8	13	8.5	5	10.67	8
Missing			12		2		10

TABLE 2 (Continued)

Category	Classification	Both Groups		Control Group		Experimental Group	
		%	#	%	#	%	#
Father's Education	Grades 1-8	.8	1	0	0	1.6	1
	High School	25.2	30	12.3	7	37.1	23
	Junior or Com. Col.	3.4	4	3.5	2	3.2	2
	Some College	11.8	14	15.8	9	8.1	5
	Bachelor's Degree	36.1	43	38.6	22	33.9	21
	Graduate School	22.7	27	29.8	17	16.1	10
Missing			27		4		23
Father's Occupation	Semi-Skilled	8.4	10	1.8	1	14.1	9
	Skilled	18.5	22	16.4	9	20.3	13
	Management	24.4	29	29.1	16	20.3	13
	Professional	48.7	58	52.7	29	45.3	29
Missing			27		6		21
Mother's Age	-39	23.88	32	6.8	4	37.33	28
	40-45	32.09	43	42.4	25	24.0	18
	46-50	31.34	42	30.5	18	32.0	24
	51-55	9.7	13	17.0	10	4.0	3
	56-61	29.99	4	3.4	2	2.7	2
Missing			12		2		10
Mother's Education	Grades 1-8	3.4	4	0	0	6.2	4
	High School	40.3	48	31.5	17	47.7	31
	Jr. or Com. Col.	4.2	5	3.7	2	4.6	3
	Some College	16.8	20	14.8	8	18.5	12
	Bachelor's Degree	31.9	38	46.3	25	20.0	13
	Graduate Degree	3.4	4	3.7	2	3.1	2
Missing			27		7		20

TABLE 2 (Continued)

Category	Classification	Both Groups		Control Group		Experimental Group	
		%	#	%	#	%	#
Mother's Vocation	Housewife	7.0	7	5	2	8.3	5
	Semi-Skilled	18.0	18	12.5	5	21.7	13
	Skilled	31.0	31	35.0	14	28.3	17
	Management	7.0	7	10.0	4	5.0	3
	Professional	37.0	37	37.5	15	36.7	22
Missing			46		21		25
Age You'll Consider Yourself Old	18-40	15.5	17	15.3	7	15.9	10
	41-50	14.7	16	8.7	4	19.1	12
	51-60	19.2	21	23.9	11	15.9	10
	61-70	33.8	37	37.0	17	31.8	20
	Over 70	16.5	18	15.3	7	17.5	11
	Never		3		2		1
Missing			34		13		21
Previous Training or Experience in Aging	Yes	30.8	45	34.4	21	28.2	24
	No	69.2	101	65.6	40	71.8	61
	Lecture	11.1*	5	14.3*	3	8.3*	2
	Volunteer	42.2	19	28.6	6	54.2	13
	Scouts	28.9	13	19.0	4	37.5	9
	Senior Center	20.0	9	33.3	7	8.3	2
	Other	40.0**	18	33.3**	7	45.8**	11

*These percentages are for those with previous experience in aging.

**This exceeds 100% because some of those who had previous experience in the aging field had more than one experience.

is reflected also in grade level; the experimental group was composed of slightly more than half tenth graders, with the rest of the group divided roughly in equal parts between the two upper grades. The control group was composed largely of seniors with a small eleventh grade contingent. As will be seen, this added maturity and years in school were reflected in the pre-test superiority of the control group on almost every measure. Table 3, A Summary of Analysis of Covariance of the Post Cognitive Test Controlling for Grade, shows that even if the tenth grade is removed from the computations, the experimental group maintains its edge, in fact increases it slightly. Therefore, it is not the difference in the composition of the groups, in regard to age and grade, but the unit on aging that made the gain scores for the experimental group greater than those of the control group.

The females in both groups out numbered the males. being more in the majority in the experimental segment. One-way analysis of variance tests were done on the following measures: Cognitive Test, pre, post, and gain scores; Ball State Aging and the Aged Questionnaire, pre, post and gain score in relation to sex, and none of them were found to be significant. Thus, contrary to other research (Lane, 1964 and Feltman, 1974) no difference in attitude or knowledge was found that could be attributed to sex difference. All of the classes were preponderantly

TABLE 3

SUMMARY OF ANALYSIS OF COVARIANCE OF THE POST COGNITIVE TEST CONTROLLING FOR GRADE

	DF	Sum of Squares	Mean Square	F-Stat.	Sig.
Equality of Adjusted Means	4	1368.1	342.03	39.467	.0000
Covariates	1	196.89	196.89	22.719	.0000
Error	127	1100.6	8.6663		
Equal Slopes	4	42.960	10.740	1.2490	.2939
Error	123	1057.7	8.5989		

	Post-Means	Adjusted Post-Means
Control Group--11th grade	12.67	11.64
Control Group--12th grade	12.43	12.35
Experimental Group--10th grade	19.24	19.32
Experimental Group--11th grade	17.72	17.96
Experimental Group--12th grade	18.18	18.17

	Average Post-Means	Average Adjusted Post-Means	F-Stat.	Sig.
Control Group (11th & 12th Grades)	12.55	11.10	35.827	.0000
Experimental Group (11th & 12th Grades)	17.95	18.10		

Caucasion. Most of those indicating a religion were Protestant. Catholics were the next most numerous group. It is interesting to note, however, that a much larger proportion of the students in the control group said they had no religion.

The students of both groups have their roots in the midwest, although several were born in other places in the United States, and a few in other countries. Many students as yet, at this age, do not have a clear career ambition, or are not willing to divulge it on a questionnaire. Of those who did indicate a choice, they see themselves as professionally oriented. They have been born and raised in an urban or suburban setting, with many of them having lived in the community all of their lives or at least ten years or more.

Almost all of the students in these groups have living grandparents. In the second class to be tested the question of great-grandparents came up. A number of the students mentioned having them, but since the item was not included on the inventory form, there was no way of ascertaining the true number. Grandmothers are more frequent survivors than grandfathers, with the mother's mother being the one with the highest percentage for both groups. As will be seen, a few of the parents were in the senior citizen age group. The experimental group had more than twice the amount of weekly contact with

grandparents (15.5% to 7.3%) but when the bi-weekly and monthly visits (the more frequent contacts) are considered, the control group had 45.4% of its members involved as compared with 42.3% of the experimental group, so that the groups are not too divergent in their contact with their older family members. 52.8% of the control group and 57.7% of the experimental group reported yearly or infrequent visits as the rule. Over 75% of both the control and experimental groups have not had the experiences of living six months or longer with someone sixty years or older. Thus, less than a quarter (Feltman, 1974 found 10.7%) of both groups have had daily or prolonged contact with an elderly person. The relations with older people, at least what can be ascertained by the collected data, have not been extensive and is roughly equivalent for the two groups.

Almost all of the students have living parents. All of the family discontinuities by death of a parent are in the experimental group. The age of both parents tends to be older in the control group. The age range for fathers of control group members, was 35 to 63 with a mean of 47.98 and a standard deviation of 5.45. The range of ages for fathers in the experimental group was 32 to 72 with a mean of 44.34 and a standard deviation of 12.69. A chi-square was performed for fathers' age and it was 12.1 at the .0168 significance level.

Even though the age of mothers was slightly lower for both groups, the pattern of older parents in the control group was maintained. With a span of ages from 36 to 61, the mean was 46.41 and the standard deviation 5.35 for the control group. For the experimental group, the range of years was 32 to 59, with a mean of 41.10 and a standard deviation of 10.01. The chi-square for mothers' age was 24.43 with a .0001 significance level. Tests for significance using an analysis of covariance on attitude measures found none in relation to age of parents.

The education of the parents of both groups was higher than is true of the nation at large, and undoubtedly reflects the nature of the university community in which the investigation took place. However, more of the parents of the experimental group completed their education with high school and fewer did graduate work so that a chi-square statistic was 13.6 at the .034 significance level. The education of mothers in the experimental group also tended to be less, but did not prove to be statistically significantly so. Because of research (Thorson 1974, 1975 a, b) showing education as the major variable correlating with more positive attitudes toward the aged, analysis of covariance was computed using total attitude pre-scores and attitude gain scores as the covariates but with no significant results. The

additional education and maturity of the students themselves must have accounted for the higher attitude scores, rather than the higher educational level that they were exposed to at home.

Because of being on the demographic inventory, the question of "when will you consider yourself old?" appeared only once, rather than on a pre-post basis. So though it is interesting to note the wide range of answers, no comparison is possible between the two testing times. As explained under procedures, the students were at liberty to complete this form with either the pre or post-test. The span of ages chosen for the control group was 18 to 125, with 62.20 being the mean age with a standard deviation of 19.72. Experimental group members could envisage old age beginning between the ages of 19 and 100 with 59.49 being the mean age and a standard deviation of 15.82. The age chosen is interesting; both groups tended to view 61 and over as the time of senesence, with more of the experimental group choosing the 40's as their second choice, and the control group the 50's. Analyses of variance were run for all of the measures Cognitive pre, Cognitive gain, Attitude pre, Attitude post, and Attitude gain. Two of them, attitude gain score and attitude post-test scores proved to be significant. As shown in Table 4, the results of Analysis of Variance on attitude gain score

TABLE 4

ONE-WAY ANALYSIS OF VARIANCE OF BALL STATE AGING AND THE AGED ATTITUDE GAIN SCORE (STRATIFIED ACCORDING TO "AGE WHEN YOU WILL CONSIDER YOURSELF OLD")

Anova Summary Table

Source	DF	Sum of Squares	Mean Square	F-Stat.	Sig.
Between	4	667.21	166.80	4.04	.0048
Within	84	3467.0	1.27		
Total	88	4134.2			

Strata Means

Age Consider Oneself Old	N	Mean	Variance	Stand. Dev.
18-40	14	7.14	42.74	6.54
41-50	14	3.86	27.52	5.25
51-60	18	-.89	41.40	6.43
61-70	27	.93	42.46	6.52
70+	16	4.56	49.73	7.05
Grand	89	2.65	46.73	6.85
Missing	67			

TABLE 5

ONE-WAY ANALYSIS OF VARIANCE OF BALL STATE AGING AND THE AGED POST-TEST (STRATIFIED ACCORDING TO "AGE WHEN YOU WILL CONSIDER YOURSELF OLD")

Anova Summary Table

Source	DF	Sum of Squares	Mean Square	F-Stat.	Sig.
Between	4	1250.6	312.65	2.9815	.0231
Within	92	9647.2	104.86		
Total	96	10898.			

Strata Means

Age Consider Oneself Old	N	Mean	Variance	Stand. Dev.
18-40	15	91.20	101.03	10.05
41-50	15	93.53	125.98	11.22
51-60	19	92.58	89.15	9.44
61-70	32	93.91	125.44	11.20
70+	16	102.38	65.05	8.07
Grand	97	94.57	113.52	10.66
Missing	49			

and "age when you will consider yourself old" tended to be somewhat inconsistent. The greatest gain, 7.14 was made by those considering themselves old between 18-40, the youngest span. The next gain was 4.56 and made by those choosing 70 years and older. The third gain increase, 3.86, went to the next youngest possible choice, and the next highest gain again returned to the next oldest choice. This criss-crossing pattern is perplexing. When the total post attitude scores are observed in Table 5, a more consistent trend emerges of the higher scores correlating with students considering themselves old at older ages.

About a third of the control and a quarter of the experimental group had had any previous experience in the aging field. Serving as a volunteer was the most frequent activity mentioned by those with such experience or training. No statistical computations were made to test for correlation with any of the measures, as the self-selection of those that had previous training or experience in aging would have confounded the results.

Analyses of covariance were run on the attitude measures to test for significance on all of the applicable variables, and none was found.

Results of Cognitive (Information) Test

Hypothesis 1: There will be no difference between the experimental and control groups in the pre and post-test scores of knowledge as measured by the Cognitive Test.

A twenty-five item test (ten Multiple Choice and fifteen True and False) was designed by the writer to test for knowledge of some of the major concepts stressed in the Unit of Gerontology. The full wording of the questions is contained in Appendix B, Instruments. The tests were hand scored with a "1" coded for a correct answer and a "2" coded for no or an incorrect answer. A total score was also computed and was a part of the coding. A perfect score would have been "25". The same test, was given to both the control and the experimental groups on a pre and post-test basis.

To measure Cognitive Test gain a pair-wise t-test was used. The results are shown in Table 6; the control group shows a slight loss of -.49180, while the experimental group shows a gain of 6.1647; the t-statistic is 12.791. The significance level accepted for the research (.05) was met, in fact it might be noted that cognitive test gain significance level was .0000.

Because the control group had done slightly better than the experimental group on the pre-test

TABLE 6

T-TEST OF COGNITIVE TEST GAINS (POST-TEST TOTAL/PRE-TEST TOTAL)

	Control Group (n = 61)	Experimental Group (n = 85)	T-Statistic	DF	Significance
Mean	- .49180	6.1647	12.791	144	.0000
Variance	4.7208	13.115			

TABLE 7

SUMMARY OF ANALYSIS OF COVARIANCE OF UNIT ON GERONTOLOGY POST COGNITIVE TESTS CONTROLLING FOR PRE-TEST DIFFERENCES

Group	N	Pre-Test Mean	Post-Test Mean	Adjusted Post-Test Mean	F Stat.	Signif.
Control	61	12.95	12.46	12.29	170.43	.0000
Experimental	85	12.37	18.53	18.65		

(12.95 compared to 12.37) and because the classes were intact and the groups varied in certain selected variables as previously reported, an analysis of covariance was also used to give an additional measure that would take into account the pre-test differences. The summary of Analysis of Covariance is reported in Table 7 (a more complete covariance table is contained in Appendix E). The post-test mean for the control group was 12.46, and controlling for the pre-test differences, the adjusted mean was 12.29, while the post-test mean for the experimental group was 18.53, which was brought up to 18.65 when the initial variation is considered. The F-statistic can be seen to be 170.43, and the significance again exceeds the selected level. The null hypothesis is rejected.

Even though an item analysis was not included in the hypotheses, it is interesting to study the results in Table 8. The greatest pre-knowledge was shown for Question 11 regarding the life expectancy of Blacks compared to Whites. This may reflect the recent attention given to multi-cultural subjects in the schools. With such a high percentage getting it right in the pre-test, there could not have been much gain for either group in the post-test. The control group had one less person scoring a correct answer in the post-test.

It should be pointed out that the students brought to the pre-test a substantial knowledge of

TABLE 8

ITEM ANALYSIS: COGNITIVE TEST

	Ques. No.	Question Topic*	Both Groups				Control Group				Experimental Group			
			Pre		Post		Pre		Post		Pre		Post	
			%	#	%	#	%	#	%	#	%	#	%	#
Multiple Choice	1	Ratio of women to men	52.7	77	71.2	104	68.9	42	59.0	36	41.2	35	80.0	68
	2	Rate of population increase of 65+	6.2	9	34.9	51	13.1	8	6.6	4	21.2	18	55.3	47
	3	Young excel 65+ in speed	75.3	110	85.6	125	77.0	47	75.4	46	74.1	63	92.9	79
	4	% of 65+ living in institutions	14.4	21	50.7	24	8.2	5	13.1	8	18.8	16	77.6	66
	5	% 65+ in total U.S. population	22.6	33	41.1	60	21.3	13	18.0	11	23.5	20	57.6	49
	6	Causes of downgraded elder status	69.9	102	68.5	100	70.5	43	63.9	39	69.4	59	71.8	61
	7	Reasons for aging of population	14.4	21	23.3	34	4.9	3	4.9	3	21.2	18	36.5	31
	8	Intelligence research in relation to aging	28.8	42	58.2	85	39.3	24	32.8	20	21.2	18	76.5	65
	9	% 65+ below poverty line	33.6	49	49.3	72	36.1	22	31.1	19	31.8	27	62.4	53
	10	Sources of support for social security	21.2	31	25.3	37	29.5	18	13.1	8	15.3	13	34.1	29
True and False	11	Life expectancy of Blacks compared to whites	90.4	132	93.2	136	98.4	60	96.7	59	84.7	72	90.6	77
	12	Widows as largest impoverished group of older people	53.4	78	76.0	111	55.7	34	62.3	38	51.8	44	85.9	73
	13	Sustained mobility with chronic health condition	24.0	35	52.7	77	9.8	6	9.8	6	34.1	29	83.5	71
	14	% in working force compared with 1900	53.4	78	69.9	102	57.4	35	60.7	37	50.6	43	76.5	65
	15	Life expectancy at 65 compared with 1900	24.7	36	45.2	66	19.7	12	21.3	13	28.2	24	62.4	53
	16	Marital status of elderly	56.2	82	75.3	110	59.0	36	60.7	37	54.1	46	85.9	73
	17	Disagreement with Thorndike's curve of intelligence	71.2	104	69.2	101	63.9	39	52.5	32	76.5	65	81.2	69

TABLE 8 (Continued)

	Ques. No.	Question Topic*	Both Groups				Control Group				Experimental Group			
			Pre		Post		Pre		Post		Pre		Post	
			%	#	%	#	%	#	%	#	%	#	%	#
True and False	18	Definition of aging population	76.0	111	88.4	129	80.3	49	86.9	53	72.9	62	89.4	76
	19	Loss of eye lens transparency with age	81.5	119	87.7	128	80.3	49	80.3	49	82.4	70	92.9	79
	20	Exercise as aid to oxygen transport in elderly	84.2	123	88.4	129	85.2	52	86.9	53	83.5	71	89.4	76
	21	Transportation as need of elderly	85.6	125	89.7	131	95.1	58	91.8	56	78.8	67	88.2	75
	22	Knowledge of research findings on kinship networks	30.1	44	35.6	52	24.6	15	21.3	13	34.1	29	45.9	39
	23	Life style after 65 determined by earlier life	83.6	122	89.0	130	78.7	48	85.2	52	87.1	74	91.8	78
	24	Financial status as chief determinant of retirement adjustment	50.0	73	58.9	86	55.7	34	42.6	26	45.9	39	70.6	60
	25	Over 80% of elderly have at least one chronic health condition	56.8	83	78.8	115	62.3	38	67.2	41	52.9	45	87.1	74

*Full wording is included with the Instruments in Appendix B .

the basic facts in aging. The range of scores for the control group in the pre-test was 8 to 18 (mean 12.95). For the experimental group the range was 4 to 17 (mean 12.37). The range of scores for the control group on the post-test was 6 to 17 (mean 12.46) and for the experimental group 9 to 24 (mean 18.53). Although the general knowledge of the field acquired prior to the pre-test was substantial, nevertheless, the instructional unit increased the knowledge of the experimental group more than six points.

The control group did less well on thirteen questions, 1, 2, 3, 5, 6, 8, 9, 10, 11, 16, 21, 22 and 24; stayed the same on three, 7, 13 and 19; and improved in nine, 4, 12, 14, 15, 16, 18, 20, 23 and 25. The consistently low number getting Question 7 correct is baffling and must have been related to something studied in relation to their course. The point of the question was that the aging of the population was the result of more people surviving into the later years rather than improved medical care for those 65 and over.

The most dramatic increase was in relation to Question 4, the percent of those 65 and older who were institutionalized. The experimental group changed from sixteen getting it correct in the pre-test to 66 in the post-test, an increase of fifty students, and a 58.8% gain. The next greatest change in the experimental group

was the knowledge that declining ability to learn was based on cross-sectional studies, a 55.3% gain representing 47 students. Both groups showed small gains in recognition of the importance of patterns of activity established early in life, (Question 23) with the vast majority agreeing with the statement even in the pre-test. There was widespread recognition of physical loss with age and the value of exercise. The number of students having a correct answer increased between the pre-test and post-test for every question for the experimental group, with some increases being much greater than others. It seems apparent that it is possible to teach basic facts in the aging field with some knowledge retention. Whether the increased knowledge has any impact on attitudes will be explored in the next sections.

Results of Attitude Test-I

Ball State Aging and the Aged Questionnaire

Hypothesis 2: There will be no difference between the experimental and control groups in the pre and post-test scores of attitude as measured by the Ball State Aging and the Aged Questionnaire.

As previously explained, it was decided to use two measures of attitudes; one developed by the Ontario Welfare Council and widely used (Opinions About People, 1974, p. 3), and the other, the Aging and the Aged

Questionnaire developed by Ball State University for use the second year (1973), in its Teacher Education Program on Aging. It has been validated for use at the high school level.

The same format of analysis used with the results of the Cognitive Test was applied to the results of the Ball State test of attitudes: (1) t-tests were utilized to describe differences on total scores (2) analysis of covariance of the post-test scores controlling for pre-test differences were used to further test the hypothesis, and (3) an item analysis was done to note differences on individual questions. Because the questionnaire employed a five point scale of favorability from strongly agree to strongly disagree, a pair-wise t-statistical analysis was used to measure differences on items.

Paired T-Tests on Total Score Pre and Post-Test Differences

As explained in Chapter III under instruments, at the time of coding, the number coded for each question was corrected for favorability direction so that a "5" always represented the most favorable attitude on that question. Twelve questions were not scored by the statistician at Ball State because of the failure to meet part-whole correlation criteria, and an additional item, 10, was dropped by the researcher for the same

reason. The twenty-seven questions that were coded are shown in the item analysis for the control and experimental groups in Table 11. A perfect score would be "135".

The numbers of the groups are smaller than for the sample because missed items made it impossible to compute comparable attitude gain scores for some tests. The control group, as can be seen in Table 9, had a pre-test mean (total favorability score) of 93.14 and a post-test mean of 92.60, a slight loss, leaving a mean difference of .54. The t-statistic was .64 and the significance level did not meet the research standard (.05). The pre-test mean for the experimental group was 92.03, 1.11 points below the initial test scores for the control group. However, the post-test mean was 96.89, representing a gain of 4.86; the t-statistic -6.1461, and the significance level exceeded what had been set as the level of rejection.

An analysis of covariance was also done to look at post-test scores controlling for pre-test differences. The results of this analysis are in Table 10. The differences are even greater in the post-test means when the analysis controls for initial variations. As can be seen, the control group now has a score of 92.08 and the experimental group 97.26, a difference of 6.20 instead of 4.29, the discrepancy in the paired t-tests. The F-statistic is 21.370 with the significance again

TABLE 9

PAIRED T-TESTS OF BALL STATE ATTITUDES ON AGING ON PRE- AND POST-TEST DIFFERENCES (TOTAL SCORES)

Group	N	Test	Mean	Mean Difference	T-Stat.	DF	Signif.
Control	50	Pre-Test Post-Test	93.14 92.60	.54	.64	49	.5249
Experimental	71	Pre-Test Post-Test	92.03 96.89	-4.86	-6.1461	70	.0000

TABLE 10

SUMMARY OF ANALYSIS OF COVARIANCE OF BALL STATE ATTITUDES ON AGING TOTAL POST-TEST SCORES CONTROLLING FOR PRE-TEST DIFFERENCES

Group	N	Pre-Test Mean	Post-Test Mean	Adjusted Post-Test Mean	F Stat.	Signif.
Control	50	93.14	92.60	92.08		
Experimental	71	92.03	96.89	97.26	21.370	.0000

surpassing that required for rejection.

On the basis of both tests, the null hypothesis is rejected.

It is interesting to note how the students responded to each question. The item analysis was done by two methods. The full rating of each question is shown in Table 11.

Minimum and maximum refer to the span of ratings given to each question. All questions had at least one "5" (most favorable) score, but 9 questions had no one choose "1", (most negative score). These were questions 1, 3, 4, 6, 12, 16, 25, 28 and 29. The pre and post-test means for all used questions, as well as the standard deviations are shown.

Pair-wise t-statistics were done and can be seen for the control group in Table 12 and in Table 13 for the experimental group. Since only one question of the control group's tests registered a significant difference (Question 23--the elderly as gossip prone) and that moved in a negative direction, questions that were near significance (.05-.10) and those that showed suggested significance (.10-.20) were included in Table 12.

Thirteen questions of the experimental group showed a significant difference. It is interesting to note that three of them are the same ones that appear in the control group table. The difference on Question 23, that stereotypes older people as gossip prone, went in

TABLE 11

ITEM ANALYSIS OF BALL STATE PRE AND POST ATTITUDES ON AGING QUESTIONNAIRE
CONTROL GROUP

Question Topic*	Ques.	Pre-Test					Post-Test				
		No.	Min	Max	Mean	St. Dev.	No.	Min	Max	Mean	St. Dev.
Declining productivity	1	61	2	5	3.36	.98	61	2	5	3.48	.91
Careless about appearance	3	60	2	5	3.90	.82	61	2	5	4.02	.83
Sorry for selves	4	60	2	5	3.56	.85	61	2	5	3.52	.92
Share of community resources	5	60	1	5	3.75	.97	61	2	5	3.74	.75
Remarriage	6	61	2	5	3.64	.73	61	1	5	3.56	.83
Forgetfulness	7	61	1	5	2.59	1.02	61	1	5	2.70	.97
Financial obligation of children	11	61	1	5	3.43	1.04	61	1	5	3.36	.86
Creativity	12	61	2	5	3.89	.93	61	2	5	3.95	.83
Critical of youth	13	61	1	5	2.98	1.07	61	1	5	2.85	1.07
Retirement decisions	14	61	1	5	3.87	1.12	61	1	5	3.87	1.01
Personal hygiene	16	61	2	5	4.00	.77	61	1	5	3.92	.86
Irritable	17	61	1	5	3.46	.99	61	1	5	3.36	.91
Self pity	18	61	1	5	2.79	.88	58	1	5	2.67	.82
Flexibility	19	61	1	5	2.42	.81	61	1	4	2.52	.83
Gossip prone	23	61	1	5	3.34	.83	59	1	5	3.03	.91
Wisdom-experience	24	60	1	5	3.47	1.13	61	1	5	3.72	1.10
Skills obsolete	25	61	2	5	4.05	.69	60	1	5	4.00	.94
Mandatory driving rule	27	61	1	5	3.83	1.04	61	1	5	3.59	1.15
Pace of life	28	61	2	5	3.64	.95	61	2	5	3.67	.96
Age no barrier	29	60	2	5	4.48	.81	61	2	5	4.44	.92
Too much power	30	61	1	5	3.64	.95	60	1	5	3.65	.94
Make nuisances of selves	31	61	1	5	3.67	.98	61	2	5	3.61	.82
Nursing homes to die	34	61	1	5	3.56	1.12	61	1	5	3.34	1.09
Stubbornness	35	61	1	4	2.90	.93	61	1	4	3.02	.90
Retirement opportunities	36	61	1	5	3.34	1.11	61	1	5	3.26	1.05
Resent growing old	37	61	1	5	2.61	1.00	61	1	5	2.70	1.09
Should "act age"	38	61	1	5	3.08	1.12	61	1	5	3.23	1.10

*Full wording is included with the Instruments in Appendix B.

TABLE 11a (Continued)

EXPERIMENTAL GROUP

Question Topic*	Ques.	Pre-Test					Post-Test				
		No.	Min	Max	Mean	St. Dev.	No.	Min	Max	Mean	St. Dev.
Declining productivity	1	83	1	5	3.28	.86	84	1	5	3.54	1.03
Careless about appearance	3	85	1	5	3.76	.97	85	1	5	3.86	.93
Sorry for selves	4	84	1	5	3.69	1.01	85	1	5	3.71	1.02
Share of community resources	5	84	2	5	3.80	.90	85	2	5	4.05	.91
Remarriage	6	85	1	5	3.69	.83	85	1	5	3.75	.83
Forgetfulness	7	84	1	5	2.80	1.08	85	1	5	3.08	1.10
Financial obligation of children	11	85	1	5	3.42	.88	85	1	5	3.41	1.03
Creativity	12	83	2	5	3.82	.90	83	1	5	4.00	.88
Critical of youth	13	85	1	5	2.95	1.06	85	1	5	3.13	1.01
Retirement decisions	14	84	1	5	3.86	.95	85	2	5	4.12	.89
Personal hygiene	16	85	1	5	3.76	1.03	85	1	5	3.82	.99
Irritable	17	85	1	5	3.33	1.04	85	1	5	3.34	.95
Self pity	18	85	1	5	2.85	.92	85	1	5	3.08	.94
Flexibility	19	85	1	5	2.80	1.01	85	1	5	3.02	1.02
Gossip prone	23	85	1	5	2.95	.96	84	1	5	3.30	.99
Wisdom-experience	24	85	1	5	3.68	1.08	85	2	5	4.28	.77
Skills obsolete	25	84	1	5	3.65	.96	85	1	5	3.76	1.03
Mandatory driving rule	27	85	1	5	3.60	1.14	85	1	5	4.01	1.01
Pace of life	28	85	1	5	3.47	1.01	85	1	5	3.54	1.04
Age no barrier	29	85	2	5	4.40	.80	84	1	5	4.31	.92
Too much power	30	84	1	5	3.30	.90	85	1	5	3.54	.89
Make nuisances of selves	31	84	1	5	3.50	.95	85	2	5	3.60	.99
Nursing homes to die	34	85	1	5	3.70	1.10	82	1	5	3.65	1.14
Stubbornness	35	85	2	5	3.01	.99	85	1	5	3.13	1.06
Retirement opportunities	36	85	1	5	3.52	.98	84	1	5	3.77	.88
Resent growing old	37	84	2	5	2.72	.87	84	1	5	3.21	.96
Should "act age"	38	85	1	5	2.81	1.17	85	1	5	2.97	1.22

*Full wording is included with the Instruments in Appendix B.

TABLE 12

BALL STATE (PRE AND POST) ATTITUDES ON AGING QUESTIONNAIRE
PAIRWISE T-STATISTICS (PRE-TEST VS. POST-TEST)
CONTROL GROUP

Question Topic**	Question No.	Pre-Test Mean	Post-Test Mean	Mean Difference	Standard Deviation	T-Stat.	Signif.
Careless about appearance	3 60	3.90	4.03	-.13	.79	-1.31	.20*
Gossip prone	23 59	3.34	3.03	.31	.79	2.9	.00#
Wisdom-experience	24 60	3.47	3.70	-.23	1.06	-1.70	.09+
Mandatory driving rule	27 61	3.84	3.59	.25	1.09	1.76	.08+
Nursing home to die	34 61	3.56	3.34	.21	.82	2.03	.05+
Stubbornness	35 61	2.90	3.02	-.11	.64	-1.41	.16*
Should "act age"	38 61	3.08	3.23	-.15	.89	-1.29	.20*

*Included are pre- and post-test suggested significance (.10-.20).

+Near significance (.05-.10).

#Significance (< .05) differences.

**Full wording is included with the Instruments in Appendix B.

TABLE 13

BALL STATE (PRE AND POST) ATTITUDES ON AGING QUESTIONNAIRE
PAIRWISE T-STATISTICS (PRE-TEST VS. POST-TEST)
EXPERIMENTAL GROUP

Question Topic*	Question No.	Pre-Test Mean	Post-Test Mean	Mean Difference	Standard Deviation	T-Stat.	Signif.
Declining productivity	1	83	3.28	3.55	-.28	.94	-2.68	.01
Share of community resources	5	84	3.80	4.05	-.25	.86	-2.66	.01
Forgetfulness	7	84	2.80	3.08	-.29	.94	-2.79	.01
Creativity	12	81	3.80	4.01	-.21	.86	-2.19	.03
Retirement decision	14	84	3.86	4.13	-.27	1.00	-2.51	.01
Self pity	18	85	2.85	3.08	-.24	.91	-2.39	.02
Flexibility	19	85	2.80	3.02	-.22	1.03	-2.00	.05
Gossip prone	23	84	2.95	3.30	-.35	1.00	-3.16	.00
Wisdom-experience	24	85	3.69	4.28	-.60	.88	-6.32	.00
Mandatory driving rule	27	85	3.60	4.01	-.41	.99	-3.83	.00
Too much power	30	84	3.30	3.56	-.26	1.05	-2.28	.03
Retirement opportunities	36	84	3.51	3.77	-.26	.95	-2.54	.01
Resent growing old	37	83	2.73	3.22	-.48	1.14	-3.85	.00

*Full wording is included with the Instruments in Appendix B.

opposite directions for the two groups; the control group initially had a favorability score of 3.34 that changed to 3.03 in the post-test while the experimental group moved from 2.95 to 3.30. Both groups showed a more positive attitude to Questions 24 "wisdom comes with age and experience" in the post-test. The control group moved from 3.47 to 3.70 (a near significant difference) and the experimental group changed from 3.69 to 4.28, one of its highest rankings. On Question 27 that deals with whether there should be a mandatory age to stop driving, the groups diverged again, with the control group regressing from 3.84 to 3.59 while the experimental group initially responded with 3.60 and upgraded it later to 4.01. The highest mean for any question was recorded for the control group in the pre-test in answer to the statement "Age is no barrier to a happy life." Interestingly, both groups went down slightly in the post-test; the control group from 4.48 to 4.44, and the experimental group from 4.40 to 4.31, but scores on this question are the highest, showing a belief in the possibility of a meaningful old age. This result is supported by findings using the Perceptions of Age questionnaire to be reported later in this chapter.

Results of Attitude Test II

Opinions About People

This questionnaire, was the by-product of the

Canadian Conference on Aging in 1966, in which a recurring theme was the importance of attitudes in dealing with the problems of aging in Canadian society. The instrument is made up of thirty-two statements that respondents place on a nine-point Likert scale from strongly agree to strongly disagree. Extensive research and continuing refinement have produced the weighting of these statements into seven attitude dimensions. The instrument, the charts for weighting statements into attitude dimensions, the charts of attitude scales, as well as a brief summary of attitude interpretations are contained in Appendix B.

Hypothesis 3: There will be no difference between the experimental and control groups in the pre and post-test scores of attitude as measured by the Opinions About People questionnaire.

Hypothesis 3.1: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 1 "realistic toughness toward aging".

A t-test and analysis of covariance were run on all seven of the attitudes of Opinions About People. For Attitude 1 the scale included possible scores from 16 to 144 with 80 being considered by the manual to be the intermediary position (the point of uncertainty). In every attitude, the lower the score the more pronounced is that attitude being tested. For Attitude 1, scores

below 80 show some or much toughness in feeling toward the elderly; scores above 80 move in the direction of no or little cynicism toward older members of the society. As can be seen from studying Tables 14 and 15, on the pre-test, the control group had a mean of 93.92; the experimental group scored more than ten points less, 82.98. However, on the post-test the control group lost more than four points on the scale (4.18) and the experimental group gained more than six points and finished with a score of 89.13. The t-statistic was 4.108 and the significance level was greater than that prescribed for the research, .0001.

In the analysis of covariance, to control for this pre-test difference, the adjusted mean for the control group became 85.28 while the adjusted post-test mean for the experimental group was 92.33. The F-statistic was 8.55 and the significance .004. Thus the null hypothesis for Attitude 1 is rejected.

Hypothesis 3.2: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 2, "denial of effects on aging".

The scale for Attitude 2 has a possible range from 3 to 27 with 15 considered as the uncertain point. Scores below 15 indicate some or strong denial of aging; scores above 15 progressively show little or no denial of the effects of growing older. The pre-test mean was

TABLE 14

T-TEST OF OPINIONS ABOUT PEOPLE: POST-TEST ATTITUDES/PRE-TEST ATTITUDES

		Control Group (n = 61)	Experimental Group (n = 85)	T-Statistic	DF	Significance
Attitude 1: Realistic Toughness Toward Aging	Mean Variance	-4.18 222.82	6.1529 226.06	4.1080	144	.0001
Attitude 2: Denial of Effects of Aging	Mean Variance	-.7213 16.97	.2235 21.199	1.2771	144	.2036
Attitude 3: Anxiety About Aging	Mean Variance	-3.016 159.9	6.8824 203.44	4.3335	144	.0000
Attitude 4: Social Distance to Old	Mean Variance	-5.361 276.07	10.506 307.49	5.5108	144	.0000
Attitude 5: Family Responsibility	Mean Variance	.19672 503.03	.3177 380.84	.34682	144	.9724
Attitude 6: Public Responsibility	Mean Variance	-.3771 406.31	-1.1529 357.04	.2380	144	.8123
Attitude 7: Stereotype vs. Acceptance	Mean Variance	-2.2131 106.64	3.6235 101.50	3.4166	144	.0008

TABLE 15

SUMMARY OF ANALYSIS OF COVARIANCE ON OPINIONS ABOUT PEOPLE POST-TEST SCORES, CONTROLLING FOR PRE-TEST DIFFERENCES

Category	Group Con. n = 61 Exp. n = 85	Means Pre-Test Mean	Means Post-Test Mean	Means Adjusted Post-Test Mean	F-Statistic (Adjusted Means)	Signif.	Coefficient
Attitude 1: Realistic Toughness Toward Aging	Control Experimental	93.92 82.98	89.74 89.13	85.28 92.33	8.550	.0040	.70
Attitude 2: Denial of Effects of Aging	Control Experimental	17.62 14.95	16.90 15.18	15.91 15.89	.1150	.9730*	.64
Attitude 3: Anxiety About Aging	Control Experimental	71.33 66.61	68.31 73.49	66.18 75.03	16.539	.0001	.78
Attitude 4: Social Distance to Old	Control Experimental	129.31 112.82	123.95 123.33	117.04 128.29	16.530	.0001	.72
Attitude 5: Family Responsibility	Control Experimental	107.36 105.72	107.56 106.04	106.86 106.53	.1014	.9199*	.73
Attitude 6: Public Responsibility	Control Experimental	70.85 67.54	70.48 66.39	69.60 67.01	.8716	.3521*	.45
Attitude 7: Stereotype vs. Acceptance	Control Experimental	56.84 50.88	54.62 54.51	52.21 56.24	6.333	.0130	.70

*Null hypothesis accepted.

once again higher for the control group, 17.62 as compared to 14.95 for the treatment group. Again the control group lost some ground (-.7213) and the experimental group gained some (.2235), but not enough to make the result significant at the .05 level. The t-statistic was 1.2771.

In the analysis of covariance, the adjusted post-test mean was 15.91 for the control group and 15.89 for the experimental group. The F-statistic was .1150 with the significance .9730. The null hypothesis for Attitude 2 was accepted.

Hypothesis 3.3: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 3, "anxiety about aging".

The scale for Attitude 3 has a range from 13 to 117 with 65 considered to be the intermediate point. A score below 65 indicates some or much anxiety in relation to aging; a score above 65 reveals little to no anxiety about growing older. In the pre-test, the control group maintained its pattern of a higher score--71.33 compared to 66.61. In the post-test the control group again went down, this time 3.02 points on the scale while the experimental group gained 6.88 points to finish with a post-test mean of 73.49. The t-statistic was 4.3335 and the significance .0000, being far greater than required for the purposes of the research.

In adjusting for the initial discrepancy between the groups, the covariance measure established the adjusted post means at 66.18 and 75.03 for the control and experimental groups respectively. For the first time in the Opinions About People test, the experimental group made a better showing in both the post-means as well as the adjusted post means in scores, not just when differences are counted. The F-statistic was 16.539 with significance reaching .0001. The null hypothesis for Attitude 3 is rejected.

Hypothesis 3.4: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 4, "social distance to the old".

The scale for Attitude 4 has a potential range of 19 to 171 with 95 considered to be the point of uncertainty. Scores below 95 give evidence of some or great distance to the old; points on the scale above 95 point to little or no social distance to the elderly. The control group maintained its superiority in the pre-test by a wide margin, 129.31 to 112.82, but by virtue of the control group going down 5.361 and the experimental group going up 10.506 points on the scale, their greatest gain, the control group finished a scant 123.95 to 123.33 ahead. For the t-test the t-statistic was 5.5108 and the significance an impressive .0000. In working with groups of college students in Canada, Colgan (1976)

using the same instrument also reported the greatest gains in this attitude as the result of intervention of a Unit of Gerontology.

The analysis of covariance, controlling for the starting differences, magnifies the gain by showing an adjusted post-mean score of 117.04 for the control group and 128.29 for the experimental group. The null hypothesis for Attitude 4 is rejected.

Hypothesis 3.5: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 5, "family responsibility toward aged parents".

The scale for Attitude 5 ranges from 22 to 198--the lower the score, the stronger is the feeling that the care of the elderly is primarily the responsibility of the family, and a high score would indicate a feeling against family responsibility; 110 is the point of uncertainty. The two groups were closer together in the pre-test score on this attitude than any of the others in the Opinions About People, the control group having a 107.36 mean and the experimental 105.72. The change for both groups was slight and both away from family responsibility, .197 for the control group to 107.56; the change for the experimental group was .318 to 106.04. The t-statistic was .34682, and with a significance level of .9199, the result was not significant.

Analysis of covariance brought the post-test

means even closer together--106.86 compared to 106.53. The F-statistic was .1014 and the significance at .9199, is beyond the .05 level. Therefore, the null hypothesis for Attitude 5 is accepted.

Hypothesis 3.6: There will be no difference between the experimental and control groups in the pre and post-test scores on Attitude 6, "public responsibility versus unconcern".

The lower the score, the more favorable the attitude toward public responsibility. The possible scores range between 17 and 153, with 85 being the intermediary position. The control group pre-tested at 70.85, changing -.3771 to 70.48. The experimental group, starting a little lower at 67.54 also moved in the direction of public responsibility by 1.153 to 66.39. The t-statistic was .2380 and the significance (.8123), above the accepted level of .05.

Controlling for pre-test differences, the analysis of covariance widened the difference in the adjusted post-test means to 69.60 compared to 67.01 but not enough to make the results statistically significant. The F-statistic was .8716, and again with a significance of .3521 the level of acceptance was exceeded. The null hypothesis for Attitude 6 is accepted.

Hypothesis 3.7: There will be no difference between the experimental and control groups in the pre and post-test scores for Attitude 7, "unfavourable stereotype versus acceptance".

The range for Attitude 7 is between 9 and 81 with 45 being considered the uncertain point. A group score below 45 demonstrates some contempt to strong stereotyping of the elderly, whereas a score above 45 points to some acceptance to no stereotyping in relation to the older members of society. The pre-test scores follow the pattern of the control group being ahead, 56.84 to 50.88, but the post-test scores are closer than for any other attitude, 54.62 and 54.51. The t-test showed a difference of -2.213 for the control group and a gain of 3.624 for the experimental group. The t-statistic was 3.417 and at .0008, the difference was significant.

When the initial scores were taken into account, the narrow margin widened to 52.21 for the control group to 56.24 for the experimental group. The F-statistic was 6.333 and the significance level more than met the .05 requirement. The null hypothesis for Attitude 7 was rejected.

Group Profiles - Opinions About People

Even though only the differences in the control and experimental groups between the pre and post-tests were central to the hypotheses, it is interesting to note how the scores of each group place these secondary students in relation to the attitude dimension scales. A brief description of the attitude interpretations is

contained in Appendix B. The following explanation was done using the analysis suggested in the Guidelines and Manual that can be purchased for use with the Opinions About People:

For each attitude dimension:

(1) total scores were arranged from highest to lowest

(2) the number scoring above the intermediary position (the point of uncertainty) was totalled and percentages figured, as were

(3) the number and percentages scoring at the intermediary position

(4) the number and percentages scoring below the intermediary position (point of uncertainty)

(5) the highest and lowest scores for each dimension were recorded as "range of answers".

The results are shown in Table 16.

Attitude 1: REALISTIC TOUGHNESS (verging on cynicism) toward aging.

Even though both groups at all test times had a mean that exceeded the uncertain point, and in both the pre and post-test one student in the experimental group had the highest possible score, the means were only slightly above the intermediate position. Many students, 24 (28.24%), in the experimental group and 14 (22.95%) in the control group were below this point showing that there is some tendency to look down upon the older person as one who cannot look after himself and has not adequately prepared for his future.

TABLE 16

GROUP PROFILES: OPINIONS ABOUT PEOPLE

Attitude	Test	Manual Attitude Scores	Manual Uncertain Point	Control Group (n = 61)						
				Range of Answers	Above Uncertain Point		Below Uncertain Point		At Uncertain Point		Mean
					%	N	%	N	%	N	
1. Realistic Toughness Toward Aging	Pre-Test	16-144	80	38-129	75.41	46	21.31	13	3.28	2	93.92
	Post-Test			34-126	77.04	47	22.95	14	0	0	89.74
2. Denial of Effects of Aging	Pre-Test	3-27	15	7-26	65.57	40	19.67	12	14.75	9	17.62
	Post-Test			6-25	67.21	41	27.87	17	4.92	3	16.90
3. Anxiety About Aging	Pre-Test	13-117	65	29-117	44.26	27	55.74	34	0	0	71.33
	Post-Test			29-109	55.74	34	44.26	27	0	0	68.31
4. Social Distance to Aged	Pre-Test	19-171	95	62-167	88.53	54	8.20	5	3.28	2	129.31
	Post-Test			64-161	91.80	56	8.20	5	0	0	123.95
5. Family Responsibility	Pre-Test	22-198	110	26-179	44.26	27	52.46	32	3.28	2	107.36
	Post-Test			47-158	37.70	23	59.02	36	3.28	2	107.56
6. Public Responsibility	Pre-Test	17-153	85	33-133	18.03	11	78.69	48	3.28	2	70.85
	Post-Test			40-110	19.67	12	80.33	49	0	0	70.48
7. Unfavorable Stereotype vs. Acceptance	Pre-Test	9-81	45	28-81	81.97	50	16.39	10	1.64	1	56.84
	Post-Test			28-73	80.33	49	19.67	12	0	0	54.62

The Lower the score, the More so.

TABLE 16 (Continued)

Attitude	Test	Manual Attitude Scores	Manual Uncertain Point	Experimental Group (n = 85)						
				Range of Answers	Above Uncertain Point		Below Uncertain Point		At Uncertain Point		Mean
					%	N	%	N	%	N	
1. Realistic Toughness Toward Aging	Pre-Test	16-144	80	22-144	55.29	47	40.0	34	4.70	4	82.98
	Post-Test			33-144	70.59	60	28.24	24	1.18	1	89.13
2. Denial of Effects of Aging	Pre-Test	3-27	15	4-27	41.18	35	43.53	37	15.29	13	14.95
	Post-Test			3-27	50.59	43	41.18	35	8.24	7	15.18
3. Anxiety About Aging	Pre-Test	13-117	65	19-144	47.06	40	49.41	42	3.53	3	66.61
	Post-Test			21-116	64.71	55	31.76	27	3.53	3	73.49
4. Social Distance to Aged	Pre-Test	19-171	95	43-171	77.65	66	20.0	17	2.35	2	112.82
	Post-Test			41-171	83.53	71	16.47	14	0	0	123.33
5. Family Responsibility	Pre-Test	22-198	110	45-160	40.0	34	55.29	47	4.70	4	105.72
	Post-Test			37-176	42.36	36	54.12	46	3.53	3	106.04
6. Public Responsibility	Pre-Test	17-153	85	24-125	16.47	14	80.0	68	3.53	3	67.54
	Post-Test			19-136	15.29	13	84.71	72	0	0	66.39
7. Unfavorable Stereotype vs. Acceptance	Pre-Test	9-81	45	12-77	68.24	58	23.24	24	3.53	3	50.88
	Post-Test			11-79	78.82	67	20.0	17	1.18	1	54.51

Attitude 2: DENIAL of the effects of aging.

As can be clearly seen in Tables 16 and 17, the control group had higher mean scores at both test times. However, the range of answers for the two groups was very similar. Table 17 gives the additional information of the standard deviation of each group on the seven attitudes. The experimental group was below the uncertain point (15) on the pre-test, and only slightly above it on the post-test.

This instrument was designed to test for sensitivity of those who would be working professionally with the elderly. Either a strong denial of the effects of aging or too much acceptance leads to unrealistic expectations. Over 40% of the experimental and nearly 30% of the control group were below the intermediate point.

Attitude 3: ANXIETY about aging.

Apparently just taking the tests raised the anxiety level of the control group, whereas anxiety declined in the treatment group. A little more than a third of the experimental group in the post-test had scores at or below the mid-point, while more than 44% of the control group did. A low score here reveals that the person equates old age with problems and losses or the belief that most old people are institutionalized. Indeed results on Question 4 on the Cognitive Test

TABLE 17

ATTITUDE ANALYSIS OF OPINIONS ABOUT PEOPLE

	Manual Attitude Scales*	Manual Uncertain Point	Control Group				Experimental Group			
			Pre-Test		Post-Test		Pre-Test		Post-Test	
			Mean	Stand. Dev.	Mean	Stand. Dev.	Mean	Stand. Dev.	Mean	Stand. Dev.
Attitude 1: Realistic Toughness Toward Aging	16-144	80	93.92	18.88	89.74	17.11	82.98	20.04	89.13	20.93
Attitude 2: Denial of Effects of Aging	3-27	15	17.62	4.63	16.90	5.03	14.95	5.17	15.18	5.17
Attitude 3: Anxiety About Aging	13-117	65	71.33	20.53	68.31	20.71	66.61	20.21	73.49	20.13
Attitude 4: Social Distance to Old	19-171	95	129.31	23.37	123.95	19.57	112.82	26.57	123.33	26.70
Attitude 5: Family Responsibility	22-198	110	107.36	29.46	107.56	26.31	105.72	25.65	106.04	28.70
Attitude 6: Public Responsibility	17-153	85	70.85	21.02	70.48	16.46	67.54	17.43	66.39	19.87
Attitude 7: Stereotype vs. Acceptance	9-81	45	56.84	11.50	54.62	10.79	50.88	14.97	54.51	14.85

*The lower the score, the more so.

(the percentage of those 65 and over in institutions) showed massive gains only for the experimental group.

Attitude 4: SOCIAL DISTANCE to the old.

On this question both groups scored well above the ambivalent point. The substantial gain by the experimental group, and the slight decline of the control group between the two testing periods would indicate that the belief in being able to communicate with the elderly was greatly enhanced as a result of the unit.

Attitude 5: FAMILY RESPONSIBILITY toward aged parents.

This question and the next one would indicate that the high school students share with their parents some ambivalence as to who should have responsibility for the care of aged family members. There was very little change on the part of either group. The change that did appear was away from family duty. A little bit more than half of the students on this item were below the median, or more for family responsibility. It would seem that they are unclear in their thinking on this attitude. The support of the older members of the community is a pressing social problem requiring important societal decisions.

Attitude 6: PUBLIC RESPONSIBILITY for the rights and well-being of the aged VERSUS UNCONCERN for the aged as a group.

Almost eighty percent of both groups at both test times scored in the lower half of the scale, indicating a strong feeling in favor of public responsibility for the rights and well-being of the aged. There were some scores as high as 136, and less than 15% were strongly against public support.

Attitude 7: UNFAVOURABLE STEREOTYPE of the old (as inferior) VERSUS ACCEPTANCE of the old as equals.

The control group started out and maintained more than 80% of its members ranking above the median point. One member got the highest possible score on the pre-test. The experimental group made significant gains but did not quite equal the control group score. Those in the control group dropped almost 10% in those below the point of uncertainty. Even though some individual scores dropped as low as 11, showing a strong unfavorable stereotyped view of the old, the great majority would seem to accept the old as equals.

Results of Perceptions of Age Questionnaire

Hypothesis 4: There will be no difference between the experimental and control groups in the pre and post-test scores as measured by the Perceptions of Age Questionnaire.

Much of the past research has been imprecise in indicating how young people view older people and how they view the aging process, particularly themselves, in the

process of becoming an old person (Hickey, 1976). One of the purposes of this questionnaire was to give the students an opportunity to express in their own words how they expect their life to be as they move through the life cycle and into old age. The null hypothesis in congruence with the research hypothesis was concerned with a change favorable to the experimental group in the ability to explicitly picture themselves in elder roles as a result of being exposed to instruction in a unit of gerontology.

On those questions where there were correlated samples on the two tests (pre and post) on the same person, a pair-wise t-statistic was done to test for significance. Those questions (see Appendix B) that lent themselves to this analysis were Questions 6 through 13 that had to do with ages on the life cycle; Question 14, a five choice scale of "Do you think about your own aging?"; Question 23 "Do you expect to enjoy your old age?"; and Question 24, which like Question 14, was a five choice scale on "Do you usually notice older people?" No significant difference was found on any question.

Because of the nature of the other questions, being descriptive and detailed, they did not lend themselves to tests of statistical significance. A series of chi-squares was computed between the pre and post tests, but they proved to be without value in evaluating the students' responses. The researcher did a check of

every third questionnaire and had the project director evaluate some of them. Even with a desire to find differences in thinking of appropriate ages for certain events, or activities and roles in later years, the writer could not find any significant changes. Those students that had imaginative observations to make in the pre-test maintained their ability to conceptualize the future. Those that didn't have much to say in the pre-test were equally unimaginative in the post-test. Because of the directions given to them of being able to see what they had written in the pre-test, perhaps they were overly encouraged to record no change.

It would seem that those students taking part in the research had had from 15 to 19 years to develop perceptions of the aging process and their future and these perceptions were so well developed that they were not noticeably modified by instruction in a two week Unit of Gerontology.

Even though the Perceptions of Age Questionnaire revealed no significant differences within or between the two groups on the pre and post-testing, it generated a great deal of useful data for understanding the high school mentality regarding the aging process, the aged and their own aging.

How High School Students View the Aging Process

A great deal of time and effort was put into the coding of the first three questions of this questionnaire:

"What makes a person seem old?" "What makes a person seem young?" and "Think of two people you know who are 50 years old. One seems older than his/her years, one younger. What are the differences between the two?" The questions were open-ended, so that the students were free to answer in their own way. All of the other instruments gave them only the opportunity to evaluate or react to what was there. In trying to give pattern and order to their many responses, it soon became apparent that most of their ideas could be categorized into biological, psychological and social dimensions of aging (Birren, 1964a). Some attributes did not fit these three categories, mostly because they represented a combination or interaction of two or all attributes, so a fourth category was created. Answers to the first three questions all lent themselves to the same pattern of analysis, which had the advantage of being able to quantify responses to all three questions on the same four attributes, making comparisons possible. The summary of Questions 1-3 are presented in Tables 18 and 19.

The detailed tallying for the three questions are contained in Appendix F, Tables 44 to 55. The results for the control and the experimental groups are shown separately with their pre and post-test choices. One of the consistent results of the survey is that the difference between the groups or between the pre and post-tests are

TABLE 18

PERCEPTIONS OF AGE: QUESTIONS 1-3: SUMMARY OF RESPONSES, BOTH GROUPS

Attribute	Mention	Question 1: What Makes a Person Seem Old?				Question 2: What Makes a Person Seem Young?				Question 3: The Difference Between Two 50-Year-Olds			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
Physical Attributes	1	54.6	71	62.0	75	57.7	75	61.2	71	62.5	45	68.8	53
	2	30.0	39	29.8	36	32.3	42	31.9	37	29.2	21	26.0	20
	3	12.3	16	7.4	9	7.7	10	5.2	6	5.6	4	3.9	3
	4	3.1	4	0.8	1	2.3	3	1.7	2	2.8	2	1.3	1
	Total		130		121		130		116		72		77
Psychological Attributes	1	43.9	29	47.1	24	48.4	30	63.2	36	55.2	32	54.4	31
	2	27.3	18	39.2	20	33.9	21	26.3	15	29.3	17	28.1	16
	3	19.7	13	9.8	5	12.9	8	10.5	6	15.5	9	17.5	10
	4	9.0	6	4.0	2	4.8	3	--	--	--	--	--	--
	Total		66		51		62		57		58		57
Social Attributes	1	63.6	21	58.6	17	66.7	18	25.0	5	50.0	16	60.0	12
	2	27.3	9	24.1	7	29.6	8	65.0	13	43.8	14	30.0	6
	3	9.1	3	13.8	4	3.7	1	10.0	2	6.3	2	--	--
	4	--	--	3.4	1	--	--	--	--	--	--	10.0	2
	Total		33		29		27		20		32		20

TABLE 18 (Continued)

Attribute	Mention	Question 1: What Makes a Person Seem Old?				Question 2: What Makes a Person Seem Young?				Question 3: The Difference Between Two 50-Year-Olds			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
Other Attributes	1	40.5	18	47.6	20	38.5	15	54.1	20	53.3	8	70.0	7
	2	50.0	21	33.3	14	38.5	15	27.0	10	40.0	6	30.0	3
	3	9.5	4	19.0	8	20.5	8	16.2	6	6.7	1	--	--
	4	--	--	--	--	2.6	1	2.7	1	--	--	--	--
	Total		42		42		39		37		15		10
Total Attributes			272		243		258		230		177		164

TABLE 19

PERCENT OF TOTAL RESPONSES REPRESENTED BY PHYSICAL, PSYCHOLOGICAL, SOCIAL, AND OTHER ATTRIBUTES OF AGING

	Question 1: What Makes a Person Seem Old?		Question 2: What Makes a Person Seem Young:		Question 3: Difference Between Two 50-Year-Olds	
	Pre-Test Percent	Post-Test Percent	Pre-Test Percent	Post-Test Percent	Pre-Test Percent	Post-Test Percent
Physical Attributes	47.80	49.79	50.39	50.43	40.68	46.95
Psychological Attributes	24.35	20.99	24.03	24.78	32.77	34.76
Social Attributes	12.18	11.93	10.47	8.69	18.08	12.20
Other Attributes	15.50	17.28	15.12	16.09	8.47	6.09

dwarfed by the similar emphasis given to the various categories by all the students polled at this school level. For this reason, for the summary of responses, Tables 18 and 19, the two groups, control and experimental are considered together.

The picture that the high school students of this sample presents of the aging individual is a complex of physical, psychological, social, and other characteristics. The bodily concerns are most often mentioned, but the interplay of psychological, social, and other forces complete the picture of aging. The figures in Table 19 were derived by dividing a given category of attributes for a given question by the total attributes cited in that question. For example, to get the pre-test percent for physical attributes for Question 1 in Table 19, the total physical attributes (130) from Table 18, was divided by the total question attributes (272). Studying this table, it again becomes apparent that for both the pre and post-tests, these high school students consistently saw the aging process about half in physical terms; from a quarter to a third in psychological terms; dynamic other attributes claiming around fifteen percent for the first two questions, with less emphasis given in the differences between two 50 year olds (8.47% and 6.09%); and from 8.69% to 18.08% citing social characteristics.

Even though the codebook allowed five mentions for each of the questions, only four were included in the summary due to the paucity of fifth mentions. This type of quantifying data makes it possible to measure the results and see the overall view that this age group has of the aging process. But there is no doubt that something is lost, as in all translations in the process. For example, an inspired answer by a 17 year old male in the control group to Question 1 "Close mindedness to things that are different, no sense of adventure, lack of enthusiasm for life, extreme pity for themselves and their plight, self-centeredness" was coded

first mention (33) Attitudes toward change

second mention (43) Risk-taking-tendency to take risks

third mention (26) Being/acting "alive"

fourth mention (27) State of mind

fifth mention (30) Relationships with significant others

In this particular answer, there were no physical attributes (which were coded 01-19), there were two psychological attributes mentions (20-29), two social attributes mentions (30-39), and one other attribute mention (40-49, 90-97).

Questions 4 and 5, the best and worst things about being 70 years old were also aimed at discovering attitudes of those younger of the aged. The assets of

TABLE 20

PERCEPTIONS OF AGE--QUESTIONNAIRE (QUESTION 4)

What is the Best Thing About Being 70 Years Old?	Mention	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1. Able to slow pace	First	10.0	11	3.5	4	9.8	5	3.9	2	10.2	6	3.2	2
	Second	7.4*	2	14.5	2					25.0	2	40.0	2
Total			13		6		5		2		8		4
2. Having time to do what enjoy; freedom from responsibility	First	33.6	37	46.0	52	29.4	15	35.3	18	37.3	22	54.8	34
	Second	44.4	12	35.7	5	47.4	9	44.4	4	37.5	3	20.0	1
Total			49		57		24		22		25		35
3. Wisdom and/or experience	First	39.1	43	39.8	45	47.1	24	49.0	25	32.2	19	32.3	20
	Second	33.3	9	26.6	4	31.6	6	22.2	2	37.5	3	40.2	2
Total			52		49		30		27		22		22
4. Managing to still be alive	First	13.6	15	7.1	8	11.8	6	9.8	5	15.3	9	4.8	3
	Second												
Total			15		8		6		5		9		3
5. Travel; special activities	First	1.8	2							3.4	2		
	Second	7.4	2			10.5	2						
Total			4				2				2		

TABLE 20 (Continued)

What is the Best Thing About Being 70 Years Old?	Mention	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
6. Having grandchildren; relations with grandchildren	First	1.8	2	3.5	4	2.0	1	2.0	1	1.7	1	4.8	3
	Second	7.4	2	21.4	3	10.5	2	33.3	3				
Total			4		7		3		4				3
Missing	First		36		33		10		10		26		23
Missing	Second		119		132		42		52		77		80

*All second-mention percentages include only those making a second mention.

TABLE 21

PERCEPTIONS OF AGE--QUESTIONNAIRE (QUESTION 5)

What is the Worst Thing About Being 70 Years Old?	Mention	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1. Loneliness	First	2.6	3	7.4	8	1.8	1	2.0	1	3.3	2	12.1	7
	Second	11.2*	2							22.2	2		
Total			5		8		1		1		4		7
2. Lack of job opportunities	First			.9	1			2.0	1				
	Second												
Total			0		1		0		1		0		0
3. Poor health; physical limitations	First	31.5	35	25.9	28	36.4	20	34.0	17	24.6	15	19.0	11
	Second	50.0	9	46.2	6	55.6	5	33.3	2	44.4	4	57.1	4
Total			44		34		25		19		19		15
4. Not feeling needed	First			3.7	4	1.8	1	2.0	1			5.2	3
	Second					11.1	1			11.1	1		
Total					4		2		1		1		3
5. Loss of independence; dependency	First	3.4	4	.9	1	5.5	3	2.0	1	1.6	1	14.3	1
	Second	5.6	1	5.4	2	11.1	1	16.7	1				
Total			5		3		4		2		1		1

TABLE 21 (Continued)

What is the Worst Thing About Being 70 Years Old?	Mention	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
6. Impending knowledge of death; life almost over	First	33.6	39	35.2	38	36.4	20	32.0	16	31.1	19	37.9	22
	Second	5.6	1	7.7	1					11.1	1	14.3	1
Total			40		39		20		16		20		23
7. Fear of death	First	.9	1							1.6	1		
	Second												
Total			1		0		0		0		1		0
8. Loss of spouse, friends etc., through death	First	.9	1	2.8	3			2.0	1	1.6	1	3.4	2
	Second			23.1	3			33.3	2			14.3	1
Total			1		6				3		1		3
9. Loss of will to live	First	.9	1							1.6	1		
	Second												
Total			1		0		0		0		1		0
10. People considering one old/aged; other people's attitudes toward the aged	First	7.8	9	9.3	10	5.5	3	12.0	6	9.8	6	6.9	4
	Second	11.1	2	7.7	1	22.2	2	16.7	1				
Total			11		11		5		7		6		4

TABLE 21 (Continued)

What is the Worst Thing About Being 70 Years Old?	Mention	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
11. Not enough/nothing to do; boredom	First	5.2	6	5.6	6	5.5	3	4.0	2	4.9	3	6.9	4
	Second												
Total			6		6		3		2		3		4
12. Neglect by family, friends	First	1.7	2							3.3	2		
	Second												
Total			2		0		0		0		2		0
13. Physical appearance	First			3.7	4							6.9	4
	Second	5.6	1							11.1	1		
Total			1		4		0		0		1		4
14. Loss of ambition	First	.9	1	.9	1			2.0	1	1.6	1		
	Second												
Total			1		1		0		1		1		0
15. Not liking being old; wishing you weren't old	First	2.6	3	3.7	4	3.6	2	6.0	3	1.6	1	1.7	1
	Second												
Total			3		4		2		3		1		1

TABLE 21 (Continued)

What is the Worst Thing About Being 70 Years Old?	Mention	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
16. Nothing	First	2.6	3			1.8	1			3.3	2		
	Second												
Total			3		0		1				2		0
17. Other	First	1.7	2			1.8	1			1.6	1		
	Second												
Total			2		0		1		0		1		0
Missing	First		30		38		6		11		24		27
	Second		128		133		52		55		76		78

*Percent of those making a second mention.

old age mentioned by this sample were frequently the ones that also came out of the nationwide National Council of the Aging Survey (Harris, 1975). The youngest members of this national survey panel were 18. Having more free time, wisdom and experience, and relations with grandchildren are mentioned prominently in both. It is impossible to compare percentages because of the differences in wording and coding. It is interesting to note that both the control and experimental groups stressed "able to slow pace" less and "having time to do what enjoy; freedom from responsibility" more in the post-test.

More reasons were cited for "The worst thing about being 70 years old" than the "best" with again a similarity of categories with the Harris Survey, poor health, loneliness, boredom, fear of death, lack of job opportunities or a similar concept being prominently mentioned in both. The greater number of categories mentioned for "worst" than "best" perhaps shows some negativism toward aging in the present survey that was not true of the national one as their reasons for "best" outnumbered "worst", or it could be merely an operational difference.

How High School Students View the Life Cycle

The rest of the questions on the Perceptions of Age Questionnaire with the exception of Question 24, were

used to get some idea of how students of this age view the life cycle, and whether they can actually picture themselves as being old sometime in the future. Research (Kastenbaum, and Durkee, 1964b) has suggested that young people at this age give little explicit structuring to the "remote future"-- it is murky and generally viewed in negative terms.

In Questions 8 through 13, the students were invited to look ahead into their lives and think about what age they would marry, have their first child, have their children grown and gone from home, become a grandparent, retire from the work force, expect to die, prefer to die, and stop going to school. The most striking thing in observing their answers is the realistic picture they have of the rest of their lives and would seem to represent, if followed by all young people, a reversal of the trend to earlier marriage. As can be seen in Table 22, the range of years is from 18 to 35 in the pre-test. They envisage, with individual variations, that a little more than two years after marriage, the first child will be born. Five members of the experimental and three in the control group wrote that they did not want children. The others foresaw the next twenty odd years being dominated by having children at home. Several years after "losing" the last child, they can picture themselves as becoming grandparents, with

TABLE 22

PERCEPTIONS OF AGE: QUESTIONS 6-13: HOW OLD DO YOU THINK YOU WILL BE WHEN

Question Completion	Test	Both Groups					Control Group					Experimental Group				
		N	Range of Years Lowest	Range of Years Highest	Mean	Stand. Dev.	N	Range of Years Lowest	Range of Years Highest	Mean	Stand. Dev.	N	Range of Years Lowest	Range of Years Highest	Mean	Stand. Dev.
6. you marry?	Pre-Test	136	18	35	23.84	2.99	58	18	30	24.41	2.79	78	19	35	23.41	3.08
	Post-Test	128	18	65	24.23	4.76	53	18	65	25.38	6.36	75	19	35	23.43	2.97
7. you have your first child?	Pre-Test	129	17	35	26.58	3.53	55	22	35	27.73	3.11	74	17	35	25.73	3.60
	Post-Test	121	17	37	26.57	3.70	50	19	37	27.52	3.70	71	17	35	26.90	3.58
8. all your children are gone from home?	Pre-Test	129	37	70	49.05	5.17	56	40	60	50.04	3.75	73	37	70	48.29	5.96
	Post-Test	117	38	66	48.91	7.15	49	42	60	49.63	8.55	68	38	66	48.38	5.96
9. you become a grandparent?	Pre-Test	127	33	70	53.54	6.56	56	47	70	55.77	5.40	71	33	65	51.79	6.89
	Post-Test	115	35	96	54.21	9.77	48	44	75	55.02	10.75	67	35	96	53.63	9.05
10. you retire from the work force?	Pre-Test	118	22	80	61.59	10.96	46	22	80	60.13	14.34	72	24	77	62.53	8.08
	Post-Test	106	22	80	61.27	10.85	39	22	80	58.97	15.10	67	30	70	62.61	7.16
11. you expect to die?*	Pre-Test	121	40	115	81.37	10.85	55	65	115	81.35	10.21	66	40	102	81.39	11.44
	Post-Test	113	30	150	83.27	15.17	48	30	115	81.92	14.19	65	40	150	84.28	15.90
12. you'd prefer to die?*	Pre-Test	100	40	120	85.92	13.97	46	60	115	83.57	12.66	54	40	120	87.93	14.81
	Post-Test	87	40	164	87.60	19.61	40	40	150	85.75	17.91	47	40	154	89.17	21.02
13. you stop going to school?	Pre-Test	125	17	45	22.57	3.69	53	18	45	23.62	4.27	72	17	35	21.79	2.99
	Post-Test	125	17	45	22.94	7.17	51	18	45	22.98	3.86	74	17	30	21.96	3.09

*Wording not precisely the same as on questionnaire. Questionnaire as presented to students is in Appendix B.

retirement taking place in the next decade. They expect their lives to end in their eighties, which is above the present life expectancy, of 58.6 years of ages 15-20 (The World Almanac and Book of Facts, 1976). If they could choose their time of death, it would be at a later time. Table 23 gives the reason they would prefer to die at that age. The concept that death is the completion of life is apparent in the code that received the most tallies, "life satisfaction--lived fully." Health and the desire not to become dependent and "lived long enough" also received attention, but in varying degrees depending upon group and test time.

It seems clear that the high school student, or at least the ones in this sample, are locked into thinking of themselves as students only during the traditional years for schooling. The number of years a person of this age can picture himself in the role of student reflects the growing number that plan to go to college, particularly in fulfillment of their career ambition requirements. One lone student in each group could see himself as a life-long scholar (coded 97).

Age has almost universally been used as one of the bases for ascription of status and roles. Behavioral expectations often have an age-appropriate dimension. To determine the degree of consensus toward adult age norms, in relation to the Kansas City Studies of Adult

TABLE 23

PERCEPTIONS OF AGE: QUESTION 12a: WHY? (AT WHAT AGE WOULD YOU PREFER TO DIE)

Reasons Given	Control Group (n = 61)				Experimental Group (n = 85)			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
	Percent	Number	Percent	Number	Percent	Number	Percent	Number
1. Lived long enough	8.5	4	7.5	3	20.0	9	18.4	7
2. Health	29.8	14	25.0	10	11.1	5	15.8	6
3. Life satisfaction--lived fully	31.9	15	22.5	9	44.4	20	44.7	17
4. Don't want to be a "vegetable," dependent (go to a nursing home)	21.3	10	25.0	10	22.2	10	13.2	5
5. Desire for long life and/or many experiences	6.4	3	12.5	5	2.2	1	2.6	1
6. Losses due to old age (friends, relations, appearance)	2.1	1	5.0	2			5.3	2
7. Other			2.5	1				
Missing		14		21		40		47

Life, a representative sample of middle-class men and women aged forty to seventy were asked such questions: "What do you think is the best age for a man to marry?... to finish school?" etc. The consensus on norms that correspond to questions asked in the Perceptions of Age Questionnaire have been abstracted from the study and are shown in Table 24.

TABLE 24

CONSENSUS IN A MIDDLE-CLASS MIDDLE-AGED SAMPLE REGARDING VARIOUS AGE-RELATED CHARACTERISTICS

	Age Range Designated as Appropriate or Expected
Best age for a man to marry	20-25
Best age for a woman to marry	19-24
When most people should become grandparents	45-50
Best age to finish school and go to work	20-22
Most people should be ready to retire	60-65
An old man	65-75
An old woman	65-75

Abstracted from Neugarten, Moore, and Lowe, 1965.

These age spans correspond rather closely to the age means resulting from the present research sample, with grandparenthood coming slightly earlier in the middle-aged

sample and old age at a somewhat later time. In the high school population stratification by sex did not reveal any significant differences. The mean for the control group in answer to the question "At what age will you consider yourself old?" on the Demographic Inventory was 62.2 and the mean for the experimental group was 59.5. The former mean falls with the lower age limit for women but the latter mean is below the middle age choice for either sex. Taking into consideration that the youngest aged person questioned in the middle-aged sample was 40 and the oldest person in the high school sample was 19, the secondary level students show a remarkable ability to realistically project the future.

Two questions asked of the high school sample, age at birth of first child and expected time last child will leave home were not available in the Kansas City Study for comparison. However, Duvall, 1971, places them in the early twenties and late forties, respectively, reasonably close to the students' projecture. The realistic view that this secondary school sample has of the life cycle in both the experimental group, whose course work included a life cycle orientation, and the control group, seems to support the findings of judgmental accuracy in the age estimates of students (Thomas and Yamamato, 1975).

The responses to Question 14, "Do you think about

your own aging?"; Question 21, "What age would you most like to be?"; Question 22, "What do you feel are the most important years of a person's life?"; and Question 24, "Do you usually notice older people?" all support previous research (Harris, 1975; Kastenbaum and Durkee 1964b) that the late teens and years before thirty are considered the "best" years by most young people. The questions are worded differently and the Kastenbaum and Durkee research had the respondents mention three years to establish a span so that the results are not totally comparable.

When queried about whether they think about their own aging, there were no major shifts between the pre and post-tests for either group; they were both consistent in having "some" the most frequent response, with "not very much" and "quite a bit" the next most popular in that order. "None at all" received more tallies than "a great deal" in the pre-test--the latter disappeared entirely for both groups in the post-test.

Preoccupation with the age they are or will be soon, as previous research has shown (Kastenbaum and Durkee, 1964b), is shown in Table 26 in response to Question 21. The greater percentage choosing the teens in the experimental group is partially explained by the coveting of those privileges of the eighteen year old that many in the control group are already enjoying. This is reflected

TABLE 25

PERCEPTIONS OF AGE: QUESTION 14: DO YOU THINK ABOUT YOUR OWN AGING?

	A Great Deal		Quite a Bit		Some		Not Very Much		None At All		
	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Missing
Control Group Pre-Test (n = 61)	5.0	3	16.7	10	45.0	27	25.0	15	8.3	5	1
Control Group Post-Test	0	0	10.3	6	50.0	29	34.5	20	5.2	3	3
Experimental Group Pre-Test (n = 85)	2.5	2	16.3	13	43.8	35	28.8	23	8.8	7	5
Experimental Group Post-Test	0	0	16.3	13	46.3	37	28.8	23	8.8	7	5

TABLE 26

PERCEPTIONS OF AGE: QUESTION 21: WHAT AGE WOULD YOU MOST LIKE TO BE?

	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
	Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
Age Span	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Childhood	2.4	3	.8	1	1.9	1			3.0	2	1.4	1
Teens	55.4	67	50.1	60	49.01	26	48.0	24	60.3	41	51.4	36
20's	34.7	42	38.3	46	41.5	22	36.0	18	29.3	20	40.0	28
30's	4.1	5	7.5	9	5.7	3	14.0	7	2.9	2	2.9	2
40's	.8	1	.8	1	1.9	1	2.0	1		0		0
50's		0	.8	1		0		0		0	1.4	1
Don't know	1.7	2	1.6	2		0		0	2.9	2	2.8	2
Not sure	.8	1		0		0		0	1.5	1		0
Missing		25		26		8		11		17		15

TABLE 27

PERCEPTIONS OF AGE: QUESTION 21a: WHY? (WHAT AGE WOULD YOU MOST LIKE TO BE?)

Reason for Choosing Age as Most Like to Be	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
	Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1. Formative years of a person's life	13.2	14	12.4	11	18.0	9	20.0	8	8.9	5	6.1	3
2. Have responsibilities/privileges of adult	42.5	45	36.0	32	30.0	15	25.0	10	53.6	30	44.9	22
3. Most fun	9.4	10	9.0	8	12.0	6	10.0	4	7.1	4	8.2	4
4. Likes present age	21.7	23	27.0	24	26.0	13	27.5	11	17.9	10	26.5	13
5. Just "likes" the age; "It's a good age"	6.6	7	10.1	9	8.0	4	15.0	6	5.4	3	6.1	3
6. Change from present circumstances	3.8	4	3.4	3	2.0	1	2.5	1	5.4	3	4.1	2
7. Other	2.8	3	2.2	2	4.0	2			1.8	1	4.1	2
Missing		40		57		11		21		29		36

in their reasons given for wanting to be the age chosen "having the responsibilities, privileges of an adult," and "likes present age." 30.2% (16 students) actually mentioned the age 18 as their answer in the pre-test and 30% (15 students) in the post-test of the control group. 30.9% (21 students) in the pre-test and 21.4% (15 students) in the post-test specified age 18 in the experimental group; many mentioned the law in relation to drinking as their reason.

Other research cited has shown that young people tend to choose the years that they are in the life cycle or the near future. This is further confirmed by the answers to Question 22 "What do you feel are the most important years of a person's life?" They would support other research findings that the years of early adulthood and adulthood when the family is formed and careers established as the prime time of life, but a significant number in both groups indicated that all years of a person's life are equally important.

The fact that old age is not the center of these young people's thinking is further confirmed by the answer to Question 24 "Do you usually notice older people?" Both the control and experimental groups gained numbers in the "some" column, apparently coming from the "quite a bit" category. The experimental group gained two who said they noticed older people "a lot", but in general

TABLE 28

PERCEPTIONS OF AGE: QUESTION 22: WHAT DO YOU FEEL ARE THE MOST IMPORTANT YEARS OF A PERSON'S LIFE

	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
	Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1. Childhood	10.9	14	14.5	17	14.0	8	19.1	9	8.5	6	11.4	8
2. Teens	11.7	15	10.3	12	8.8	5	8.5	4	14.1	10	11.4	8
3. Early adulthood	24.2	31	26.5	31	19.3	11	25.5	12	28.2	20	27.1	19
4. Adulthood	18.0	23	11.1	13	17.5	10	12.8	6	18.3	13	10.0	7
5. Middle age	1.6	2	1.7	2	1.8	1	2.1	1	1.4	1	1.4	1
6. Old age	1.6	2	1.7	2	3.5	2		0		0	2.9	2
7. "Being young"	2.3	3	.9	1		0		0	4.2	3	1.4	1
8. School or college years	3.1	4	.9	1	1.8	1		0	4.2	3	1.4	1
9. Married years		0	.9	1		0		0		0	1.4	1
10. Middle and old age		0	.9	1		0		0		0	1.4	1
11. Depends on individual and what he makes of life		0	1.7	2		0	2.1	1		0	1.4	1
12. All equally important	26.6	34	29.1	34	33.3	19	29.8	14	21.1	15	28.6	20
Missing		18		29		4		14		14		15

TABLE 29

PERCEPTIONS OF AGE: QUESTION 24: DO YOU USUALLY NOTICE OLDER PEOPLE?

	A Lot		Quite a Bit		Some		Not Very Much		None At All		
	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Missing
Control Group Pre-Test (n=61)	0	0	36.2	21	51.7	30	12.1	7	0	0	3
Control Group Post-Test	0	0	27.8	15	57.4	31	14.8	8	0	0	7
Experimental Group Pre-Test (n=85)	8.9	7	45.6	36	38.0	30	7.6	6	0	0	6
Experimental Group Post-Test	11.4	9	30.4	24	46.8	37	11.4	9	0	0	6

the unit on aging, as measured by this question, did not significantly alter their awareness of the older adult. As pointed out in the Student Evaluation of the Unit section, this conflicts with the answers to the question of the amount of change reported when the pre and post-test self evaluation of change was directly asked.

How High School Students View The Later Years

Despite the fact that the core interest of their lives is present or near future oriented, the students showed an ability to anticipate their own aging, and picture themselves as older adults. The answers to Question 15 "How many careers do you expect to have?" show a firm recognition that they are likely to have more than one career, although the need for additional training was not reflected, as previously noted, in the years they anticipate spending in school. If this sample is a true representative of the secondary student, the adult educator has a large selling job to do of the necessity of continuing education; or perhaps the felt need generates the desire for further education later.

A study of Table 31, shows an acceptance by this age level of the retirement role much more than older people do themselves (Harris, 1975). "Travel" and the ability to do "what I want; relax" outnumber other responses. When asked to be more specific in breaking down the retirement role into citizen (Table 32), family

TABLE 30

PERCEPTIONS OF AGE: QUESTION 15: HOW MANY CAREERS DO YOU EXPECT TO HAVE?

Number of Careers	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
	Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
One	28.9	35	27.6	32	29.8	17	35.3	18	28.1	18	21.5	14
Two	47.9	58	47.4	55	42.1	24	37.3	19	53.1	34	55.4	36
Three	12.4	15	16.4	19	14.0	8	17.6	9	10.9	7	15.4	10
Four	4.1	5	4.3	5	3.5	2	2.0	1	4.7	3	6.2	4
Five	.8	1	1.7	2	1.8	1	2.0	1	0	0	1.5	1
A lot--as many as possible	4.1	5	2.6	3	7.0	4	5.9	3	1.6	1	0	0
Other	1.7	2	0	0	1.8	1	0	0	1.6	1	0	0
Missing		25		30		4		10		21		20

TABLE 31

PERCEPTIONS OF AGE: QUESTION 16: WHAT WILL YOU DO WHEN YOU RETIRE?

Categories of What Do, Retire	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
	Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
1. What I want; relax	35.6	42	30.8	33	27.8	15	19.1	9	42.2	27	40.0	24
2. Travel	26.3	31	29.9	32	20.4	11	25.5	12	31.3	20	33.3	20
3. Hobbies	14.4	17	11.2	12	18.5	10	14.9	7	10.9	7	8.3	5
4. Remain as active as possible	5.1	6	8.4	9	7.4	4	14.9	7	3.1	2	3.3	2
5. Don't plan to retire	10.2	12	8.4	9	20.4	11	19.1	9	1.6	1	0	0
6. Social activities & community involvement	5.1	6	5.6	6	3.7	2	2.1	1	6.3	4	8.3	5
7. Involved with family; role as grandparent	3.4	4	5.6	6	1.9	1	4.3	2	4.7	3	6.7	4
Missing		28		39		7		14		21		25

TABLE 32

PERCEPTIONS OF AGE: QUESTION 17: WHAT ACTIVITIES WILL YOU PERFORM AS A CITIZEN AT AGE 65?

Activity as Citizen	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
	Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1. Same as in earlier life	8.8	8	10.3	8	9.1	4	13.5	5	8.5	4	7.3	3
2. Community involvement; volunteer work	40.7	37	39.7	31	50.0	22	35.1	13	31.9	15	43.9	18
3. Be politically active	14.3	13	15.4	12	13.6	6	18.9	7	14.9	7	12.2	5
4. None	8.8	8	3.8	3	6.8	3	5.4	2	10.6	5	2.4	1
5. Answer irrelevant to question	27.5	25	28.2	22	20.5	9	24.3	9	34.0	16	31.7	13
6. Other			2.6	2			2.7	1			2.4	1
Missing		55		68		17		24		38		44

member (Table 33), and worker (Table 34) the answers show greater desire to remain involved. In the first named table, community involvement interest increased in the experimental group, and went down in the control group. This may have been inspired by the active older people involved in volunteer work that visited the class. Continuity of previous activity and the interest in being politically active were mentioned by several.

The grandparent role, as well as continuance with previous activities loom as the largest family responsibilities. In Table 34, the acceptance of retirement is again shown by the large number being able to feel their work life is past; however, a significant number in the experimental group apparently switched from this reaction either to "same as before, not going to retire" or "part-time work/reduced work load." The fact that for several of these questions, the same as before or a similar concept was mentioned, might indicate that for many students being old appears more as a continuation of life rather than looking at older people and their activities as different from other people.

In Table 35, there seems to be a recognition by the students of the fact that old age rather than being a block of time with unitary needs, is a time when changes do occur that require different living arrangements. Both groups prefer their own home at age 75,

TABLE 33

PERCEPTIONS OF AGE: QUESTION 18: WHAT ACTIVITIES WILL YOU PERFORM AS A FAMILY MEMBER AT AGE 65?

Activity as Family Member	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
	Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1. Same as before	28.9	26	23.4	18	43.2	19	35.1	13	15.2	7	12.5	5
2. Grandparent	30.0	27	39.0	30	25.0	11	37.8	14	34.8	16	40.0	16
3. Role with spouse; relationship with spouse	12.2	11	7.8	6	6.8	3	8.1	3	17.4	8	7.5	3
4. Head of family; active involvement with family	8.9	8	7.8	6	13.6	6	10.8	4	4.3	2	5.0	2
5. None	1.1	1	1.3	1		0	2.7	1	2.2	1		0
6. Answer irrelevant to question	17.8	16	19.5	15	9.1	4	5.4	2	26.1	12	32.5	13
7. Other	1.1	1	1.3	1	2.3	1		0		0	2.5	1
Missing		56		69		17		24		39		45

TABLE 34

PERCEPTIONS OF AGE: QUESTION 19: WHAT ACTIVITIES WILL YOU PERFORM AS A WORKER AT AGE 65?

Activity as Worker	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
	Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1. None, retired	40.4	36	31.0	22	29.8	14	24.3	9	52.4	22	38.2	13
2. Same as before; not going to retire	29.2	26	33.8	24	44.7	21	43.2	16	11.9	5	23.5	8
3. Working on new career	4.5	4	2.8	2	4.3	2	5.4	2	4.8	2		0
4. Community involvement	9.0	8	7.0	5	2.1	1	5.4	2	16.7	7	8.8	3
5. Part-time work/reduced work load	4.5	4	7.0	5	4.3	2		0	4.8	2	14.7	5
6. Answer irrelevant to question	12.4	11	18.3	13	14.9	7	21.6	8	9.5	4	14.7	5
Missing		57		75		14		24		43		51

TABLE 35

PERCEPTIONS OF AGE: QUESTION 20: WHERE DO YOU THINK YOU WILL LIVE AT AGE 75, 85, 95?

Place: At Age	Both Groups (n = 146)											
	Pre-Test						Post-Test					
	75		85		95		75		85		95	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1. Own home	76.8	96	28.6	14	9.5	2	72.2	83	27.5	11		
2. With children		0	14.3	7	14.3	3	.9	1	7.5	3	20.0	4
3. Apartment	16.0	20	34.7	17			22.6	26	45.0	18	10.0	2
4. Nursing home	2.4	3	22.4	11	61.9	13	1.7	2	20.0	8	50.0	10
5. Hospital	1.6	2			14.3	3	.9	1			15.0	3
6. Retirement home; retirement town; vacation area	2.4	3		0		0		0		0		0
7. Other	.8	1		0		0	1.7	2		0		0
Missing		21		97		125		31		106		127

TABLE 35 (Continued)

Place: At Age	Control Group (n = 61)											
	Pre-Test						Post-Test					
	75		85		95		75		85		95	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1. Own home	77.8	42	30.4	7	20.0	2	76.6	36	20.0	4		0
2. With children		0	8.7	2	10.0	1	2.1	1	10.0	2	22.2	2
3. Apartment	18.5	10	43.5	10		0	19.1	9	60.0	12	11.1	1
4. Nursing home	1.9	1	17.4	4	60.0	6	2.1	1	10.0	2	55.6	5
5. Hospital		0		0	10.0	1						
6. Retirement home; retirement town; vacation area		0		0		0		0		0		0
7. Other	1.9	1		0		0		0		0		0
Missing		7		38		51		14		41		53

TABLE 35 (Continued)

Place: At Age	Experimental Group (n = 85)											
	Pre-Test						Post-Test					
	75		85		95		75		85		95	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1. Own home	76.1	54	26.9	7		0	69.1	47	35.0	7		0
2. With children		0	19.2	5	18.2	2		0	5.0	1	18.2	2
3. Apartment	14.1	10	26.9	7		0	25.0	17	30.0	6	9.1	1
4. Nursing home	2.8	2	26.9	7	63.6	7	1.5	1	30.0	6	45.5	5
5. Hospital	2.8	2		0	18.2	2	1.5	1		0	27.3	3
6. Retirement home; retirement town; vacation area	4.2	3		0		0		0		0		0
7. Other		0		0		0	2.9	2		0		0
Missing		14		59		74		17		65		74

with a beginning shift at age 85 to reduced quarters in an apartment, with children, or a nursing home, with "own home" retaining some support. At age 95 "with children" and the inevitability of a "nursing home" or "hospital" are most frequently mentioned. The large number who did not answer this question would indicate that not all students have thought very much about their living arrangements in their old age, but for those that did, the acknowledgment of changed requirements is interesting.

The answers to Question 23 represents an optimistic endorsement of the concept that age need not be a barrier to life satisfaction. Both groups gave a resounding affirmation to the fact they expect to enjoy their old age. Life is probably a challenging venture for most of the students at this point in their life and they probably see no reason to believe they cannot continue to derive satisfaction from living. Even though it was not included in the questions asked in this study, it would be interesting to know what is the present life satisfaction of those that said "no" to the anticipated enjoyment of the later years.

Student Evaluation of Unit of Gerontology

To evaluate the Unit of Gerontology, the experimental group was asked to answer twelve questions on a

TABLE 36

PERCEPTIONS OF AGE: QUESTION 23: DO YOU EXPECT TO ENJOY YOUR OLD AGE?

	Both Groups (n = 146)				Control Group (n = 61)				Experimental Group (n = 85)			
	Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
Answer	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Yes	91.6	120	92.1	117	94.5	52	94.1	48	89.5	68	90.8	69
No	8.4	11	5.5	7	5.5	3	5.9	3	10.5	8	5.3	4
Maybe			2.4	3							3.9	3
Missing		15		19		6		10		9		9

three point scale regarding the benefit of the unit to them. The questions included not only the cognitive domain and the information they felt they had gotten from it, but the affective domain as well. The three evaluations as can be seen in Table 37, were: "Very much so", "somewhat", and "not at all". The middle category received the preponderance of the responses except for Question 4 "Did the unit help you understand the aging process better than you did before?" and Question 12 "Has it made you more aware of the needs and problems of those presently elderly?" For Question 4, 37 students (43.5%) appeared in Column 1 with 42.4% saying "somewhat". More than a majority of the students, 54.1% (46 members of the experimental group chose the most favorable response, 38.8% were in the second column, and only five indicated no new awareness of needs or problems of those presently elderly. It is apparent that the most easily communicated information in the aging field is about the aging process and the older adult as a segment of the population with special problems.

However, it is gratifying to the researcher to see that there was as much recognition as was shown to the relevancy of the unit to their own aging, current life style, and the meaning of life (81.2% indicated that they saw some connection between aging and life meaning with 30.6% indicating "very much so").

TABLE 37

STUDENT EVALUATION OF UNIT ON GERONTOLOGY

	Very Much So		Some-what		Not At All	
	%	#	%	#	%	#
1. Do you feel that a unit on aging is beneficial for students your age?	33.3	28	59.5	50	7.1	6
2. Did the unit on aging make you examine your own values, attitudes, or feelings?	32.9	28	57.6	49	9.4	8
3. Did the unit on aging make you think about the meaning of life?	30.6	26	50.6	43	18.8	16
4. Did the unit help you to understand the aging process better than you did before?	43.5	37	42.4	36	14.1	12
5. Did it make you think about your own aging?	36.5	31	50.6	43	12.9	11
6. Are there any things in your present life style that the unit on aging made you think about?	22.4	19	44.7	38	32.9	28
7. Did it make you think that there are some satisfactions that come only with age?	35.3	30	48.2	41	16.5	14

TABLE 37 (Continued)

	Very Much So		Some-what		Not At All	
	%	#	%	#	%	#
8. Have you given any more thought as a result of the unit to the kind of older person you would like to be?	29.4	25	45.9	39	24.7	21
9. Do you feel that students would benefit from such information at a younger age than you are?	22.4	19	34.1	29	43.5	37
10. Has it made you notice older people more?	34.1	29	44.7	38	21.2	18
11. Has it made you more aware of the treatment of older people in the media?	44.7	38	48.2	41	7.1	6
12. Has it made you more aware of the needs and problems of those presently elderly?	54.1	46	38.8	33	5.9	5

By combining the first two ratings over 90% saw at least some merit in having such curriculum in the schools (Question 1), while only 7.1% or six students, saw no value to them of the unit. Values and attitude examination were reported by 90.5%, with 32.9% citing "very much so", and only 9 feeling no impact had been made on their values, attitudes or feelings. Only six said that they were not made more aware of the treatment of the older adult in the media (Question 11). A whopping 92.9% chose the first two categories--they do notice the treatment of older people on T.V. more. 75.3% felt that the unit had made them give some thought to the kind of older person they would like to be; 67.1% admitted that there might be some things in their present life style (Question 6) that they should give some thought to in light of information on aging, with 22.4% saying "very much so". 83.5% indicated that the unit made them think that there are some satisfactions that come only with age; 35.3% chose the most enthusiastic response.

Two questions present some interesting speculations: Questions 5 and 10 were also asked on a five point scale in the Perceptions of Age Questionnaire (Questions 14 and 24) on a pre and post-test basis with slightly different wording. A student's t-test showed no significant differences for either question between the two test times--in other words, no change as a

result of the unit had taken place, and yet when the students were queried directly about whether it made them think about their own aging or notice older people more, 36.5% chose the most positive category, 50.6% "somewhat", and only 11 people said the unit hadn't affected them at all in relation to their own aging. 78.8% answered affirmatively to the other question "Has it made you notice older people more?" if the first two ratings are considered together, with 34.1% saying "very much so".

Question 9 as to whether they felt students would benefit from such information at an earlier age received by far the most negative responses; 43.5% or 37 students felt "not at all" and only 22.4% felt "very much so". Student t-tests were run for all twelve questions to see if those who felt that they had received no benefit from the unit differed from those who felt they had on these three variables: cognitive gain as measured by the Cognitive Test, attitude change in a positive direction and attitude post-test score as measured by the Ball State Aging and the Aged Questionnaire. There were no significant differences on any of the questions on any of the measures with the exception of Question 9. Those that felt that younger students would not beneift from the introduction of aging material at an earlier age showed significantly higher scores on the post attitude test as measured by the Ball State Aging and the Aged Questionnaire.

TABLE 38

STUDENT T-TEST FOR DIFFERENCES BETWEEN GROUPS ON POST BALL STATE AGING AND AGED QUESTIONNAIRE/STUDENT EVALUATION OF UNIT (QUESTION 9)

	"Very much so" and "Somewhat"	"Not at all"	Test Statistic	D F	Significance
Mean	94.00	100.27	t=2.6901	24	.0088
Variance	115.76	82.83	F=1.3978	42,32	.1642
N(Total=85)	43	33			

Those that felt younger students would not profit from exposure to aging information also showed near significant results on attitude gain as measured by the difference between the pre and post-test of the Ball State test (.0548). These were students who obviously derived benefit from the unit, or at least had more favorable attitudes toward aging than students who felt younger students should be exposed. It is interesting to speculate why they might feel this way. Perhaps they felt proprietory pride in their sensitivity, believing that one had to be as mature as they were to understand the material or they might not have realized that the material would be adapted to different age levels, for this was never discussed or made clear, but was only asked on the evaluation.

The students were also asked to rank the various methods used in teaching the unit in the order that they

felt had done the most effective job in communicating the material. The results are shown in Table 39. There is no doubt that films are considered by the students to be the best of the media. When the table is studied regarding individual ratings, films still lead the field. No student ranked them lower than "6"; all other media were ranked through "9". Cold Spring Idea, a film that got one of the two lowest ratings (more than half would not recommend using it again for students their age) did not jeopardize the standing of films. The Trigger Films, prepared by the Institute of Gerontology, University of Michigan-Wayne State University for the 1971 White House Conference on Aging fared very well with over 80% recommending their use. "Peege" won the most enthusiastic endorsement. It got the highest rating in information gained as well as challenged values, attitudes, feelings and recommended use for peers.

Having older people visit the class ran a strong second. Even though they got all numerical ratings, the great majority placed them solidly at the top as can be seen by the jump between them and the next method from 2.55 to 4.37 when figured as the mean, and from 1.76 to 4.00 when done by the median. If they are well selected for diversity and being good examples of successful aging, the older person in the classroom is an outstanding way to get the message across.

TABLE 39

METHOD EFFECTIVENESS--STUDENT EVALUATION OF UNIT ON GERONTOLOGY

Rank	Method	Range	N	Mean	Stand. Dev.	Median
1.	Films	1-6	77	1.77	.96	1.59
2.	Older People in Class	1-9	75	2.55	2.01	1.76
3.	Empathic Model Slides	1-9	76	4.37	2.12	4.00
4.	Video Tapes	1-9	76	4.50	1.79	4.24
5.	Discussion	1-9	75	5.15	1.98	5.06
6.	Teacher Handouts	2-9	75	5.89	1.93	6.15
7.	Lecture	2-9	76	6.71	2.13	7.21
8.	Tests	1-9	76	6.74	2.25	7.27
9.	Bulletin Boards	1-9	75	7.17	1.57	7.62

TABLE 40

STUDENT EVALUATION OF UNIT ON GERONTOLOGY: MEDIA EVALUATION

Media	Information Gained						Did It Make You Examine Your Own Values, Attitudes, Feelings?						Would You Recommend Using It for Students Your Age?			
	Low		Medium		High		No		Somewhat		Considerably		Yes		No	
	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#
FILMS:																
Weekend	19.04	12	68.25	43	12.70	8	9.52	6	65.08	41	25.40	16	72.58	45	27.42	17
But Is This Progress?	9.80	5	58.82	30	31.37	16	13.73	7	60.78	31	25.49	13	84.00	42	16.00	8
Peege	15.09	8	9.43	5	75.49	40	3.77	2	26.42	14	69.81	37	90.57	48	9.43	5
TRIGGER FILMS:																
To Market	28.57	12	38.10	16	33.33	14	21.43	9	50.00	21	28.57	12	85.00	34	15.00	6
Mrs. "P"	21.21	7	60.61	20	18.18	6	21.21	7	60.61	20	18.18	6	83.33	25	16.66	5
Cold Spring Idea	42.86	18	42.86	18	14.29	6	48.78	20	41.46	17	9.76	4	47.50	19	52.50	21
FILMSTRIPS:																
Perceptions of Age	37.21	16	53.49	23	9.30	4	44.19	19	46.51	20	9.30	4	64.44	29	35.56	16
Biology of Aging	29.03	9	38.71	12	32.26	10	35.48	11	48.39	15	16.13	5	70.97	22	29.03	9
VIDEO TAPES:																
Maggie Kuhn	40.82	20	48.98	24	10.20	5	57.14	28	32.65	16	10.20	5	42.86	21	57.14	28
Sensory Loss Simulation	19.57	9	47.83	22	32.61	15	28.26	13	45.65	21	26.09	12	75.00	33	25.00	11
SLIDES:																
Normal Eye and Aged Eye	21.21	7	39.39	13	39.34	13	31.25	10	43.75	14	25.00	8	81.82	27	18.18	6

The Empathic Model slides contrasting the normal and aged eye represented the next most popular method. The slides are the first element of a project to make "instant aging" possible or at least to help people to understand the nature of the physical losses with age. Without argument, the more popular of the two video tapes was the one also developed by Dr. Leon Pastalan at the Institute of Gerontology to simulate hearing as well as visual losses. It is hard to know if the rating for it would have been better if it had not been coupled with the most unpopular of all the individual media selections, the speech by Maggie Kuhn. Both this video tape and the movie Cold Spring Idea were in black and white. The latter one was, also somewhat dated and the former of poor technical quality; both stressed the creative possibilities of the later years, the movie showing seniors painting, sculpting, doing yoga, and living in college dormitories. There were no reasons among the comments on the evaluation sheets for these media that might have given some clues for their rejection. It would be interesting to know, was it difficult for students of this age to accept older people in the student role and pursuing some of the activities that they do not associate with old age? Or was it purely technical reasons?

Filmstrips were inadvertently left off the method ranking list, so that a rank order is not

available. However, it can be seen from the individual media list (Table 40) that both filmstrips developed by Concept Media had the great majority of students recommending them for use at the secondary level. "The Biology of Aging" fared very well in the "information gained" category and better than "Perceptions of Age" here as well as in the affective domain and the recommended column. Judging from these ratings, if the students had had an opportunity to place filmstrips as a media, it most likely would have been between video tapes and discussions.

As has been mentioned previously, the decision was made for the purpose of standardizing the input, to have the media carry the message as much as possible. Discussion and lectures were kept to a minimum. The tests were put on the list to see if the information gained from them would be considered a meaningful learning experience. Pictures were secured from the TL-C program and the students and teacher brought in articles from the newspaper. Bulletin boards could be much more creative and a greater source of learning than was the case for this unit. Holding classes in two different rooms complicated this aspect of communicaton.

Only twenty-five of the eighty-five members of the experimental group chose to make comments about the

unit. Of those 3 (12%)* mentioned a film they especially enjoyed--almost always "Peege"; four mentioned a particular situation (16%); five said the unit was a waste of time (20%); nine spoke of how the unit had made an impression on them in changing their attitudes toward aging and/or their own aging; three mentioned the unit was well done or interesting (12%); and one (4%) felt the unit was not well done nor interesting. Much of depth is lost in coding; for one student coded as "4"--changed attitudes--had written "my ninety year old grandfather visited us last summer. I wish I had had the unit first, because I would have treated him differently."

Even though it was only the experimental group that completed the student evaluation of the unit, and no null hypotheses were a part of the research in relation to these questionnaires, the student responses to this section do help to support the part of the research hypothesis that is relevant: that significant differences in student knowledge, attitudes, and perceptions of aging would result from the introduction of a unit of gerontology at the secondary level.

Unused Data

The large number of instruments for a short unit,

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*These percentages are of those that made comments representing 29.4% of the experimental population.

as well as the normal intrusions in the school calendar, resulted in a sizable number of test results that could not be used for the research design. To be certain that those tests completed on a pre or post-test only basis or those that were incomplete were not disparate from those that were used, all tests were scored and the means of the unused data compared to the means of the used data. The results are contained in Table 56 in Appendix G. Study of this table shows the means of the used and unused data to be very similar. Where there is a difference of several points between the two sets of tests, used and unused, the means of the unused data, as can be seen, fit very well within the range of scores of the used data.

Even though the numbers in the two groups (experimental and control) would have been larger had all students completed all tests at both test periods, the results would not have been changed.

Summary

The purpose of the investigation was to study the influence of a Unit of Gerontology upon the knowledge, attitudes and perceptions of high school students of the aging process, the aged, and their own aging. Chapter four has presented the principal results, which may be summarized as follows:

Answers to the demographic inventory produced a profile of the secondary school students of the sample.

Overall, on the test for knowledge, Cognitive Test, the experimental group gained more than six points between the pre and post-test while the control group went down one half a point. In the item analysis, the experimental group showed substantial improvement on every question. The control group did less well on most questions (13), made modest gains in nine, and remained the same in three.

On the first test for attitude, the Ball State Aging and the Aged Questionnaire, the experimental group improved five points in its total favorability score, and the control group lost more than half a point. In the item analysis, the experimental group had a statistically significant more favorable attitude on thirteen questions while the control group had only a near significantly improved attitude on one question and suggested significance on two items.

On the second instrument to measure attitude, Opinions About People, the experimental group showed a statistically significant attitude gain in relation to the control group on four of the seven dimensions. Three scales failed to show significant results favorable to the experimental group.

The Perceptions of Age Questionnaire produced no

statistically significant differences between the pre and post-tests for either group, but did provide a body of informative data as to how these secondary school groups view the aging process, the life cycle, and the later years.

The evaluation of the unit, given to the experimental group only, showed that the unit of instruction in gerontology had meaning to the students by increasing knowledge of the aging process and the needs of those presently elderly, as well as awareness of life meaning, philosophy, and life style choices in relation to aging. In general the research hypothesis that a unit of instruction in gerontology would produce benefits to the experimental group in comparison to a control group was supported.

Chapter V is devoted to a summary and implications of the investigation.

CHAPTER V

SUMMARY OF THE INVESTIGATION AND IMPLICATIONS OF THE RESULTS

Introduction

The purpose of this study was to determine whether or not an instructional unit in gerontology devoted to the aging process and the needs of the elderly can increase the knowledge, improve the attitudes, and expand the age related perceptions of high school students with respect to the presently elderly and their own aging.

Summary of Procedures

Five classes in Human Relationships at a large high school in a midwestern city served as the experimental group. Five classes in Psychology in the same school constituted the control group. A demographic inventory, an information test, two attitude instruments, and a perceptions of age questionnaire were administered to all groups on a pre-post basis. The unit was evaluated and the media rated by the experimental group only.

The basic research hypothesis of the investigation was that a unit of instruction in gerontology can

positively influence the knowledge, attitudes and perceptions of high school students concerning the aging process, the aged and their own aging.

Summary of Results

The substantial gain score on the Cognitive Test of over six points for the experimental group shows that it is possible to impart information to young people about aging. Findings on the first instrument used to test attitude, the Ball State Aging and the Aged Questionnaire, reveal that exposure to issues and concepts in aging can create change in a positive direction of the treatment group; but it should be noted that even though significant changes took place, the highest class mean, 98.89, recorded by the experimental group on the post-test was below the highest possible favorability score of 135.

On the second measurement of attitude, Opinions About People, responses to three of the seven attitude scales proved to show no significant differences. Two of these attitude scales, Attitude 5, "Family Responsibility Toward Aged Parents," and Attitude 6, "Public Responsibility Versus Unconcern," involved the question of responsibility for the care of the older person in the society, so that they were not true tests of attitudes toward aging or the aged per se. On Attitude 2, "Denial of the Effects of Aging," the difference between the two groups

also was not statistically significant. All of the other attitude scales, however, Attitude 1, "Realistic Toughness Toward Aging;" Attitude 3, "Anxiety about Aging;" Attitude 4, "Social Distance to the Old;" and Attitude 7, "Unfavourable Stereotype Versus Acceptance" did show a significant difference between the two groups in the pre and post-tests favorable to the experimental group. The greatest change occurred in Attitude 4, where the experimental group moved in a more positive direction by more than 10½ points. However, even though significant gains were registered, the post-test scores were only slightly more positive than the intermediary position (uncertain point) established in the manual prepared to interpret the attitude scores.

The control group in every instance did better on the pre-test than the experimental group. However, the gain scores were significantly greater for the experimental group. The initial superiority of the control group may have been due to their greater maturity and added years in school as well as membership recruited largely from the college preparatory students. Without any input between tests, they either showed modest gains, remained the same or moved in a negative direction.

Even though the Perceptions of Age Questionnaire failed to register any significant differences between the two test times of either group, it did generate data

as to how high school students view the aging process and what they see in the future regarding their own aging. The lack of difference between the pre and post-tests would suggest that perceptions about the aging process, the aged, and their own aging had been substantially formulated through their lives and were not noticeably affected by a short unit of instruction.

Even though answers to the questionnaire showed that the later years have low priority in the current thinking of this sample of high school students, they proved to have a realistic concept of the events of the life cycle, and indicated an ability to think about what they might be doing when they are old. They saw the process of aging as a complex of physical, psychological, social and other attributes. In overwhelming unanimity they expressed a belief that they expect to enjoy their later years. In almost equal strength, they acknowledged that the way a person spends his later years is largely determined by the patterns of activity he established earlier in life.

The Student Evaluation and media rating forms given only to the experimental group helped to gain perspective of the value of the unit as perceived by the students. They could see the direct benefit of having such information in helping to understand the aging process and the needs and problems of those presently

elderly. They also agreed that such education can have a substantial impact upon life styles, philosophy of life, and consideration of the kind of older person they would like to be. Films and the presence of older people in class were the most popular means of communicating the information and affecting attitudes. Videotapes, filmstrips, and slides were also seen as effective. In general, the evaluation of the students of the unit was positive.

"Gerontologizing"* The School System

If the sample of secondary students involved in this investigation represent the high school mentality today, it seems to this researcher that they are ready and natural recipients for education on aging. They appear to possess the necessary motivation and attitudinal set to comprehend the life cycle perspective and aging with all of its ramifications. They seem to be concerned about the quality of life, and could be interested in looking at life as an opportunity for lifelong development.

Development of Goals, K-12

Education for aging from kindergarten through

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*Term used by Dr. James E. Birren in a course taught by him at the University of Southern California (July, 1974) "Curriculum Development in Gerontology" and attended by present researcher.

high school is a relatively new field that at no time has been adequately conceptualized. The first project to implement aging education should be the development of an aging education matrix on the model of the Career Education Matrix (Shofstall, 1974). Application of this model would involve identification of areas of interest for aging education, conceptualization of goals and design of materials for their attainment. Such an articulation of the role of the school in aging education would provide the educational roadmap for exposure, beginning as early as kindergarten, to life cycle awareness, orientation, exploration and preparation. Themes and goal statements should be formulated for each of the developmental grade levels.

Development of Curriculum Materials

Curriculum materials need to be prepared for the use of teachers keyed to the overall goal framework of an Aging Education Matrix.

Films in the student media evaluation in this research proved to be by far the most popular method for communicating the aging message. Of all the media, there is a good selection of films presently available for rent and described in catalogues from the University of Michigan (Educational Films, 1973 and supplements), the University of Southern California (Neiswender, undated) and the U. S. Department of Health, Education, and

Welfare (1973). An additional guide to the quality and content of films will be available to teachers, if The Gerontologist (June, 1976) is successful in locating a critic to review gerontological materials.

There is a dearth of materials, however, in all of the other media. Much of what is available, though well done, was prepared to educate professionals in the field, and not for the K-12 school age student. Video-tapes, film-strips, and slides are all excellent media for schools, and most of the modern schools have the equipment to show them. Filmstrips with the choice of either a manual or auto-matic cassette tape could be used in most school settings. Prepared transparancies for overhead projectors, and port-folios of pictures for opaque projectors with accompanying script would also be helpful.

For the day to day instruction of the classroom teacher, prepared duplicating masters could be used for programmed instruction, handouts, quizzes, classroom exercises, and tests. The programmed manual developed for the U. S. Department of Health, Education and Welfare, Administration on Aging (Rich and Gilmore, 1972) provides one model for such materials. These materials could be packaged to include everything that would be needed for a course, a major unit, a mini-unit, or a day's assign-ment adapted to history, anthropology, political science, psychology, art, etc. Material for bulletin boards and

other displays could be designed and packaged for use in schools and libraries. In response to the inclusion in life-span education of elementary and secondary students in the aging process and needs of old people (D. Peterson, 1975), a reader in The Gerontologist (June, 1976) reported that packets of materials are made available to teachers in England through a "Help the Aged" program.

Reviews of books have revealed a lack of materials available to school age children that show the period of old age in all of its diversity and depth (Peterson and Karnes, 1976; Seltzer and Atchley, 1971). Materials should be prepared that could be added to text books. There is a need for fiction that through sensitive representation of characters acquaints young people of all ages with the dimensions of the life cycle, including old age. As people move through life, the differences multiply because of accumulated variables. A major goal of such literature should be the dramatization of the infinite individualization of the aged, which would help to eliminate stereotypes.

This assemblage of materials would be a response to the resolutions at the 1961 and 1971 White House Conferences on Aging, which recommended that "appropriate materials and methods about all aspects of aging must be developed and introduced in the curricula at all

levels of education from pre-school through higher education," and is long overdue.

Cross-Generational Interaction and Lifelong Education

Many of the conflicts of modern society are the result of the "balkanization" among all groups, age segregation being one of the most alienating. More specifically, western civilization distributes learning, work, and leisure over the life span as the province of the young, middle-aged, and old respectively (Kreps, 1971) so that it is very difficult for the interests of youth and of persons in the middle and later years to cross-fertilize one another's world at every stage of the life cycle. One of the findings of the national Harris poll "The Myth and Reality of Aging in America" (Harris, 1975) was that more than three-fourths of the population, both among the age group 18 to 64 as well as among those 65 and over, would prefer to spend most of their time with people of different ages rather than only with people their own age.

One way to actively involve older people in the lives of the young is programs that utilize the school as a setting for cross-generational interaction. Suggestions of how older persons can serve as adjunct personnel in the classroom should be part of curriculum packets for aging education. Older people can help

tutor students that need more individual attention than the average classroom can offer; they can be the people that listen and are concerned; they can be the society's models of the potential of creative leisure; they can perform service roles that have been neglected and give the older adult a sense of contributing to the community.

Another means of moving toward an "age-irrelevant society" that can "allay the fears of the young about growing old," and help "eradicate those age norms which are currently meaningless and those age attitudes which are currently divisive" (Neugarten, 1974), is for the older adult to join the ranks of the learners. The new research showing the potential continued learning ability into advanced old age (Baltes and Schaie, 1974; Bayley, 1955) is convincing evidence of the possibility of life-long educational development. The school system has an obligation to cultivate this great national resource. With the demographic changes that dominate school planning, older learners could utilize empty classrooms during school hours and share the cafeteria space. Older students can be exciting models of the joy of inquiry and examples of lifetime personal growth for the young. The needs of the older learner can be different from the needs of students that are primarily credential oriented. The Andragogical approach to education using the learners as a major resource and utilizing collabrative and

mutual techniques (Ingalls, 1973; Knowles, 1973) might infiltrate all of education and help deal with the problems of alienation, irrelevancy, and vandalism that plague the current educational scene (Friedenberg, 1969; Goodman, 1960; Illich, 1973; Silberman, 1971). The community school approach, which has as one of its objectives the enfoldment of all ages within the planning and learning community, might help to combat millage failures.

Teacher Education

Teacher education must be a major thrust for developing education for aging in the schools. Using the multi-cultural model (Baker, 1973, 1976a, 1976b) teachers should gain substantive understanding of the life cycle and of aging concepts by courses in the universities before certification, and also as degree requirements in post-graduate education, and by in-service training, workshops, and lectures. Schools of education should offer courses on the Ball State University Teacher Education in Aging model or its equivalent to help teachers work gerontological concepts into their classroom agenda as an all pervasive part of the curriculum.

This type of education would have the additional advantage of addressing a potential problem of the teaching profession (Lowther, 1973). Because of a

declining school-age population and the terms of most teacher contracts, teaching is becoming a "graying" profession. A greater number of teachers are currently and in the years ahead will be increasingly middle-aged while the students they teach are "forever young." Courses in gerontology could help teachers develop positive attitudes toward aging in general as a lifelong developmental process, as well as their own aging. It would equip them to incorporate processes of aging into their grade level and subjects, and help them to be models of successful aging for the pupils they teach.

The Life Cycle and the Young

It is interesting to note that the first delineation of stages of the life cycle by Eric Erikson in Childhood and Society in 1950 was based on the cross-cultural direct observation of children and their needs. For Urie Bronfenbrenner (1972a), it was also his concern for the education of children that made him critical of the host of factors that conspired to isolate children from the rest of society, simultaneously threatening the growth of the individual and the survival of civilization. The vacuum that was left by the withdrawal of the adult world from the lives of children has created the impoverished substitution of the age-segregated peer group.

> Civilization can be measured by the meaning which it gives to the full cycle of life, for such meaning (or lack of it) cannot fail to reach into the beginnings of the next generation. (Erikson, 1968)

If the old continue to be segregated or segregate themselves, the elderly could be trapped by the pitfall of Erikson's Seventh Stage of "stagnation" rather than "generativity." Generativity is primarily the concern in establishing and guiding the next generation; where such enrichment fails, regression to an obsessive need for pseudo-intimacy takes its place with a pervading sense of stagnation and personal impoverishment and the impoverishment of society. Individuals, then, often begin to indulge themselves as if they were their own--or one another's--one and only child; and where conditions favor it, early invalidism, physical or psychological, becomes the vehicle of self-concern (Erikson, 1963). Growth ending in ego integrity in the next stage would be blocked or distorted. The younger generation would be deprived of a sense of its history, ancestry, and roots (Butler, 1975).

Implications for a Philosophy of Aging Education

The results of this investigation did support the research hypothesis namely that it is possible to help students gain in knowledge and achieve more positive attitudes toward aging and the aged. But

beyond that, what should be the goal of education for aging? Dr. Butler wrote in Why Survive? Being Old in America:

> No one tells the child that his life is the one and only life he has, that it is tender and short and must be carefully nurtured, that it is easy to "blow it." No one tells the child that he is a unique person and has a unique range of possibilities before him. No one prepares him to be continually growing for a lifetime. (Butler, 1975, p. 388)

The unit on aging for the present research had as its major theme the life cycle perspective. The last of life at its best as a guide for the earlier stages (McClusky, undated) was the context in which every topic of the day was introduced.

> When, as, and if this thesis is effectively internalized and implemented, it will produce a transformation of the goals, processes, and programs of the entire educational enterprise, both formal and informal, from the beginning to the end of life. (McClusky, undated, p. 354)

The sense of the life cycle as an unfolding process of change, the exploration of the possibilities of human existence through the senses, intelligence, and creativity can help the child from the earliest ages start making his life a "work of art" (Berenson, 1963).

A Model For Lifelong Educational Development

In learning, students need a sense of direction--sufficient purpose and an image of the goal. Menlo and Miller (1975) have called this concept "goal imagery" to help energize the learning process. Such a conceptualization of lifelong development was presented by Rudolph Arnheim in a lecture prepared for the course "Late Syle in Art, Literature, and Music" at the University of Michigan (see Figure 3).

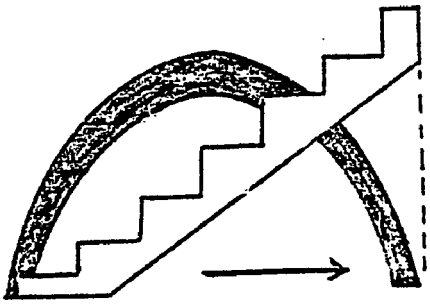


Figure 3--Two Views of Aging

The dark arch is the process of aging as seen in physical terms only. The vector and the stairs, however, illustrate the potential of continuous growth from birth to the end of life and beyond, that is possible through experience and the achievement of wisdom. The dotted line spans the gap between physical and spiritual aging. (Note that the last step is the steepest.) If instead of the arch of declining physical vigor, the child from an early age could have the picture in his mind of the anticipated self climbing the stairs on a lifelong

journey of growth and development, the mature years could be ones of fulfillment. Such a logogram would make an ideal symbol for curricula in aging education.

Conclusions

Education for aging embraces both the knowledge of the needs and problems of those that are presently elderly and the kinds of preparation an individual can make to prevent as much as possible the physical, psychological, and social problems of later life. Education for aging should address itself to help the student understand the life style variables that aid in successful aging, the losses that can be expected, and the transcendent coping strengths that can be developed starting early in life. Education for aging includes the life-span developmental concept which considers old age as one of the life stages and one of continued development and potential fulfillment. Such a framework should help the young think of older people as part of "us" and not as "them".

It has only been in recent times that childhood has become less than a nightmare of abuse and abandonment,

> ... the nineteenth century was the time when public bodies began to think of children as children, with special needs because of their helplessness and vulnerability, ... The change in sentiment that began within the family had, before the century was over, grown to work great changes in society as a whole.
> (deMause, 1974, p. 428)

It is to be hoped that the recognition of the needs of the middle-aged and older adult in the remaining years of the 20th century will become a reality to the young, who will recognize that their future lies in the status allotted to the Later Years:

> We must stop cheating: the whole meaning of our life is in question in the future that is waiting for us. If we do not know what we are going to be, we cannot know what we are; let us recognize ourselves in this old man or in that old woman. It must be done if we are to take upon ourselves the entirety of our human state. And when it is done we will no longer acquiesce in the misery of the last age; we will no longer be indifferent, because we shall feel concerned as indeed we are.
>
> (deBeauvoir, 1973, pp. 13-14)

APPENDICES

APPENDIX A

Correspondence

April 1975

Dear Parent of

As part of a project in education on aging, I am doing research in the public schools. Your son or daughter is a member of a Psychology class that is going to be a "control" group for a project in educational research. Tests on knowledge, attitudes, and perceptions of aging will be given to the Psychology and Human Relationships classes at Pioneer High School. The latter group will also have a unit on aging.

The tests, which will be given, have been reviewed and passed by the Education Research and Human Subjects Review Committees that have representatives of the Ann Arbor Public Schools. The time will not exceed two class periods. Participation in the tests is voluntary on the part of the students, but their participation can have impact upon future curriculum development in the aging field. All test materials will be identified by a code number only, assigned by the teacher, for the purpose of collating the work of a given student. Complete anonymity will be preserved for all students at all times.

If you have any objection to your son or daughter participating in this project, contact the classroom teacher as soon as possible. I welcome the opportunity of working with the teachers and students at Pioneer High School in research that I hope will prove to be of value in education on aging.

Very truly yours,

Martha K. Olmsted

Martha K. Olmsted

April 1975

Dear Parent of

We live at a time when more people are living into the later years than any time in history -- this will have an impact on all apsects of our economic, political, and social future, and yet the elderly have been the most neglected segment of our population. Very little thought has been given to preparing people for the challenge and potential of the years after sixty five.

I am a doctoral student at the University of Michigan and I hope to go into curriculum planning in the field of gerontology; I am doing research on the influence of education on aging upon student attitudes, knowledge, and perceptions of the aging process, the aged and their own aging.

Your son or daughter is a member of one of the Human Relationships classes at Pioneer High School with which I will be working beginning the first of May. As part of the developmental life cycle approach of the course, the end of the semester will include as usual a unit on aging. Tests, which will have been reviewed and passed by the Education Research and Human Subjects Review Committees that have representatives of the Ann Arbor Public Schools, will be given at various times before, during, and after the unit. This time should not exceed two class periods. Participation in the tests is voluntary on the part of the students, but their participation can have impact upon future curriculum development in the aging field. All test materials will be identified by a code number only, assigned by the teacher, for the purpose of collating the work of a given student. Complete anonymity will be preserved for all students at all times.

If you have any objection to your son or daughter participating in this project, contact the classroom teacher as soon as possible. I welcome the opportunity of working with the teachers and students at Pioneer High School in research that I hope will prove to be of value in education in aging.

Very truly yours,

Martha K. Olmsted

Martha K. Olmsted

PIONEER HIGH SCHOOL
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601 WEST STADIUM BOULEVARD
ANN ARBOR, MICHIGAN 48103
TELEPHONES
994-2126 OR 994-2127
•
MILO R. WHITE
•PRINCIPAL

ANN ARBOR PUBLIC SCHOOLS

ANN ARBOR ·:· MICHIGAN

April 21, 1975

To whom it may concern:

Because human growth and development is a part of the Human Relationship courses at Pioneer High School, we are pleased that Mrs. Martha K. Olmsted will present a unit on Gerontology during the first two weeks of May. We plan to give Mrs. Olmsted our fullest cooperation.

M. Fay Kincaid

M. Fay Kincaid

Rupert G. Otto

Rupert G. Otto

APPENDIX B

Instruments

CODE NUMBER_____

STUDENT DEMOGRAPHIC INVENTORY

Please answer every question. Try to be reasonably accurate, but if you must, you may approximate an answer. Use X's. Follow the special instructions for the last question.

1. Age___ 2. Sex____ 3. Ethnic Background_____
4. Religious Preference_____ 5. City of birth_____
6. Year in School____ 7. Career Ambition_____
8. Area of Residence: City____ Rural____
9. Area in which you have lived the most in the past 5 years

   City ___ Suburban ___ Rural ___
10. Length of time of residence in Ann Arbor _____
11. Have you lived at any time in your life at least 6 months with a person 60 years or older? Yes___ No___

    If Yes, How many? _____

    Mother's Parents (Male)__ Mother's Parents (Female)__

    Father's Parents (Male)__ Father's Parents (Female)__
13. Do you visit your Grandparents?

    Weekly___ Bi-weekly___ Monthly___ Yearly__ Seldom__
14. Is your Father living? Yes__ No__

    Age ___ Education_____
15. What does he or did he do for a living?_____
16. Is your Mother Living? Yes __ No __

    Age ___ Education_____
17. If she worked outside the home, what did she or does she do?_____
18. At what age will you consider yourself old?_____
19. Have you had any previous training or experience with Aging?

    Attended a lecture___ Volunteer work___ Scouts___

    Social Function at Senior Citizen Center___

    Other (Please explain)_____

CODE NUMBER_____

GERONTOLOGY UNIT PRE AND POST COGNITIVE TEST

Circle the one best answer for each of the following. Be sure to read through all choices before making your selection. Identify your paper with your code number only.

1. In the U.S. population over sixty five years of age, approximately how many women are there for every 100 men?
(a) 90 (b) 100 (c) 110 (d) 135

2. The overall population in America increased 100% between 1900 and 1950. During this same period, the population of persons 65 and over increased approximately
(a) 90% (b) 100% (c) 200% (d) 300% (e) 400%

3. Younger adults usually do better than people over 65 on tests that require
(a) vocabulary (b) speed (c) concentration
(d) judgment

4. Approximately what percentage of persons 65 years and older in the U.S. live in institutions (e.g. nursing homes, retirement homes, mental hospitals, etc.)?
(a) 50% (b) 35% (c) 20% (d) 5% (e) 1%

5. At the present time, of the total U.S. population, those over 65 represent about
(a) 1% (b) 5% (c) 10% (d) 20% (e) 30%

6. The downgrading of the status of the elderly is the result of
(a) urbanization (b) technical education (c) economic technology (d) health technology (e) all of the above

7. The increase in the number of people living into the later years is primarily caused by
(a) medical advances in the care of older people
(b) reduced infant mortality (c) fewer deaths from infection and communicable diseases (d) all of the above (e) "b" and "c"

8. Research findings that intelligence declines in old age are based upon
(a) longitudinal studies (b) cross sectional studies
(c) stereotypes of old age

9. What percentage of the population 65 years and older live below the poverty line?
(a) 10% (b) 25% (c) 50% (d) no percent

10. Social Security benefits are presently supported by
(a) a "payroll tax" which amounts to 5.8% (b) an equal employers' contribution (c) general taxation (d) "a" and "b" (e) "a", "b", and "c"

CODE NUMBER_____

- 2 -

Put "T" in the blank in front of the statement if you think it is true and an "F" in the blank in front of the statement if you think it is false.

11. ___ Life expectancy for Blacks in the U.S. is higher than for Whites.

12. ___ Widows comprise the largest group of older people whose income is below the poverty line.

13. ___ The vast majority of older people with chronic conditions suffer from no interference with their mobility.

14. ___ A higher percentage of those over 65 are now in the working force than in 1900.

15. ___ A 65 year old American today can expect to live less than two years longer than an American who turned 65 in the year 1900.

16. ___ Most older women are widows; most older men are married.

17. ___ Intelligence increases up to early adulthood, reaches a plateau that lasts for about ten years and then systematically declines.

18. ___ A population is said to be aging when the elderly segment of that population is increasing faster than the rest of the population.

19. ___ Some loss of visual acuity is inevitable with age.

20. ___ "Oxygen-transport capacity" (the amount of oxygen that each heartbeat delivers to the rest of the body) affecting mental alertness can be increased with regular physical exercise, even among the previously sedentary elderly.

21. ___ Transportation is seldom a problem to the elderly as they prefer to stay at home.

22. ___ New research has shown that a majority of the elderly are close enough to their children to visit with their children weekly.

23. ___ The way a person spends his later years is largely determined by the patterns of activity he established earlier in life.

24. ___ The main determinant of how well a person adjusts to retirement is his financial status.

25. ___ Over 80% of the elderly have at least one chronic health condition.

CODE NUMBER_____

QUESTIONNAIRE--AGING AND THE AGED

This questionnaire contains statements about aging and aged people. For each statement, indicate how much you agree or disagree with it. Circle your choice for each item. SA=Strongly Agree; A=Agree; N=Neutral or Undecided; D=Disagree; SD=Strongly Disagree.

1.	Old age is a period of rapidly declining productivity	SA	A	N	D	SD
2.	Aged parents are usually sympathetic to problems of their children. . . .	SA	A	N	D	SD
3.	As people become older they become more careless about their appearance	SA	A	N	D	SD
4.	As people become older they become sorry for themselves	SA	A	N	D	SD
5.	Communities should spend less on the older generation than the developing generation	SA	A	N	D	SD
6.	Remarriage for persons of advanced age usually is successful.	SA	A	N	D	SD
7.	Generally, as people grow older they become more forgetful	SA	A	N	D	SD
8.	Most older persons are calm and easygoing.	SA	A	N	D	SD
9.	As persons become older they become more religious	SA	A	N	D	SD
10.	Older persons need assistance from society in order to live in dignity.	SA	A	N	D	SD
11.	To the extent that they are able, children should provide for their aged parents	SA	A	N	D	SD
12.	Creativity declines with age	SA	A	N	D	SD
13.	As persons age they generally become more critical of youth	SA	A	N	D	SD
14.	The decisions of when to retire ought to be made by the worker . . .	SA	A	N	D	SD
15.	Many older persons do not have financial problems because they planned well	SA	A	N	D	SD
16.	Personal hygiene becomes less important to people as they age. . .	SA	A	N	D	SD
17.	As people age they become more irritable.	SA	A	N	D	SD
18.	Self-pity is likely to decrease with age	SA	A	N	D	SD
19.	As people age they tend to maintain their flexibility.	SA	A	N	D	SD
20.	Older persons tend to live in the past	SA	A	N	D	SD

21.	As people age, they tend to become more eccentric.	SA	A	N	D	SD
22.	Older people do not worry much about death.	SA	A	N	D	SD
23.	As people age they are likely to spend more time in idle gossip . . .	SA	A	N	D	SD
24.	Wisdom comes with age and experience	SA	A	N	D	SD
25.	The skills of older people are mostly obsolete.	SA	A	N	D	SD
26.	Many older persons could avoid financial difficulty if they managed their money better	SA	A	N	D	SD
27.	There should be a given chronological age at which people must surrender their driver's licenses.	SA	A	N	D	SD
28.	The pace of life today is too rapid for persons over 65 years of age . .	SA	A	N	D	SD
29.	Age is no barrier to a happy life. .	SA	A	N	D	SD
30.	Older people have too much power in the formulation of social policy.	SA	A	N	D	SD
31.	Older persons often make nuisances of themselves.	SA	A	N	D	SD
32.	Aged parents often demand much attention from their children. . . .	SA	A	N	D	SD
33.	Most persons enjoy the freedom of retirement.	SA	A	N	D	SD
34.	People go to nursing homes to die. .	SA	A	N	D	SD
35.	As people grow older they tend to become more stubborn	SA	A	N	D	SD
36.	There are many opportunities for retired persons to be contributing members of society	SA	A	N	D	SD
37.	Most persons resent growing old. . .	SA	A	N	D	SD
38.	Older adults should "act their age" and not try to appear younger than they are.	SA	A	N	D	SD
39.	It is difficult for older persons to influence decisions in most social institutions.	SA	A	N	D	SD
40.	Old age is becoming a more pleasant time of life than it was in the past.	SA	A	N	D	SD

OPINIONS ABOUT PEOPLE, FORM A
SCHEDULE

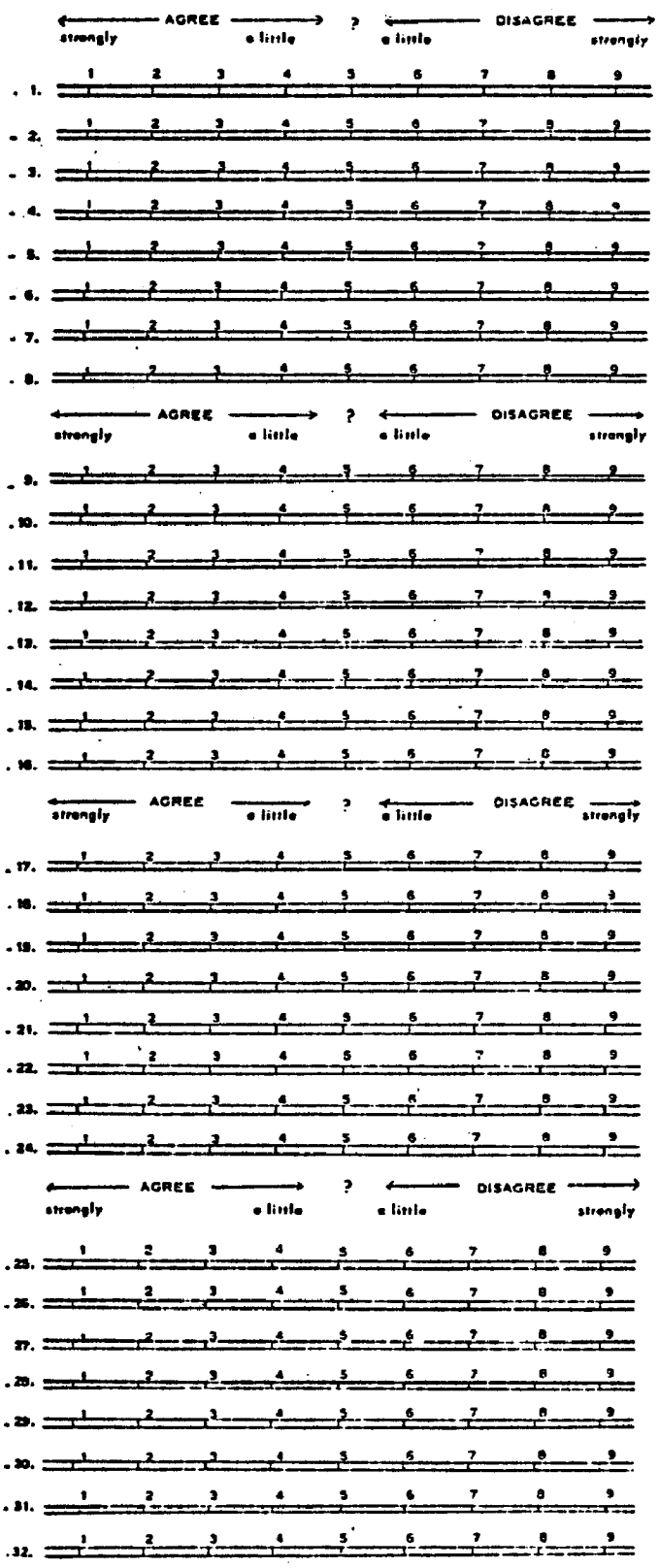
1. Some people stay young at heart no matter how long they live.
2. Things are getting better for most people these days.
3. You have to be old yourself to enjoy the stories old people like to tell.
4. Residences for retired persons should always work out their programs and routines with the old people concerned.
5. The best neighbourhoods are those where young families intermingle with retired people.
6. You can't expect other people to take care of you when you no longer can take care of yourself.
7. No one who is retired and over 70 should be allowed to drive a car.
8. The older people get, the more they think only of themselves.

9. You're further ahead if you always assume that everybody is out for Number one.
10. Most times I feel relaxed in the company of elderly people.
11. Old age is O.K. for those who are financially independent.
12. There is no point in talking about personal matters with people who are much older or much younger than yourself.
13. You can't cope with things the way you used to if you live to be a ripe old age.
14. Retired people are happiest in the company of people who are their own age.
15. Anyone could keep young if he only tried.
16. People in high offices aren't really interested in the troubles of the average person.

17. You're likely to get bogged down if you let elderly people help you with your projects.
18. No matter what the community can do it is up to the children to see that their aging parents have every comfort.
19. I cannot help feeling depressed at the thought of getting old.
20. You can't expect old people to exert themselves.
21. On the whole, people's chances in life are getting worse and not better.
22. When you retire you realize that the best years of life are yet to come.
23. You'll never get old if you don't let yourself go.
24. It is rather sad to be still alive after all your friends are gone.

25. Old age pensioners have a right to be taken care of in a dignified way even if younger people must contribute their taxes to make this possible.
26. By and large, young people don't care about anyone but themselves.
27. The future is so uncertain that there is little point in thinking or planning ahead.
28. People who spend all they make cannot expect much when they are no longer earning a living.
29. All community organizations should have some older persons on their boards.
30. It must be quite a shock to look in the mirror and find that you are showing signs of aging.
31. One shouldn't try to involve elderly people in things, all they really want is some peace and comfort.
32. Relatives who were close to the parents in former years rightly expect the children to care about their well being if they live a very long life.

OPINIONS ABOUT PEOPLE, FORM A
ANSWER SHEET



SCORING

ATTITUDE 1

Item #	Raw Score	X Weight	= Weighted Score
6		3	
11		3	
12		2	
13		3	
14		2	
28		3	
		Total	

ATTITUDE 2

Item #	Raw Score	X Weight	= Weighted Score
15		1	
22		1	
23		1	
		Total	

ATTITUDE 3

Item #	Raw Score	X Weight	= Weighted Score
19		4	
24		3	
27		2	
30		4	
		Total	

ATTITUDE 4

Item #	Raw Score	X Weight	= Weighted Score
8		5	
12		2	
13		2	
14		2	
17		4	
30		2	
31		2	
		Total	

ATTITUDE 5

Item #	Raw Score	X Weight	= Weighted Score
10		4	
18		7	
20		4	
32		7	
		Total	

ATTITUDE 6

Item #	Raw Score	X Weight	= Weighted Score
6		1	
14		1	
17		1	
21		1	
25		8	
29		5	
		Total	

ATTITUDE 7

Item #	Raw Score	X Weight	= Weighted Score
7		4	
14		2	
20		7	
29		1	
		Total	

Charts of Attitude Scales

The LOWER the score, the MORE so.

ATTITUDE 1

SCALE	REALISTIC TOUGHNESS TOWARD AGING
144	NO
	OR
112	LITTLE
80	UNCERTAIN
48	SOME
	OR
16	MUCH TOUGHNESS, CYNICISM

ATTITUDE 2

SCALE	DENIAL OF EFFECTS OF AGING
27	NO
	OR
21	LITTLE
15	UNCERTAIN
9	SOME
	OR
3	STRONG DENIAL

ATTITUDE 3

SCALE	ANXIETY ABOUT AGING
117	NO
	OR
91	LITTLE
65	UNCERTAIN
39	SOME
	OR
13	MUCH ANXIETY

ATTITUDE 4

SCALE	SOCIAL DISTANCE TO THE OLD
171	NO
	OR
133	LITTLE
95	UNCERTAIN
57	SOME
	OR
19	GREAT DISTANCE

ATTITUDE 5

SCALE	FAMILY RESPONSIBILITY TOWARD AGED PARENTS
198	STRONGLY AGAINST
	OR
154	AGAINST
110	UNCERTAIN
66	FOR
	OR
22	STRONGLY FOR FAMILY RESPONSIBILITY

ATTITUDE 6

SCALE	PUBLIC RESPONSIBILITY VERSUS UNCONCERN
153	NO CONCERN
	OR
119	LITTLE CONCERN
85	UNCERTAIN
51	FOR
	OR
17	STRONGLY FOR PUBLIC RESPONSIBILITY

ATTITUDE 7

SCALE	UNFAVOURABLE STEREOTYPE VERSUS ACCEPTANCE
81	NO STEREOTYPE (ACCEPTANCE)
	OR
63	SOME ACCEPTANCE
45	UNCERTAIN
27	SOME CONTEMPT
	OR
9	STRONG STEREOTYPE (CONTEMPT)

Ontario Welfare Council
SECTION ON AGING

BRIEF SUMMARY OF ATTITUDE INTERPRETATIONS

Attitude 1 — Realistic toughness (verging on cynicism) toward aging

To hold a tough, almost cynical, attitude toward aging (as indicated by the low scores) a person would strongly believe that old people cannot depend on anyone but themselves to face the tribulations of old age and that financial independence is the best protection from hardship.

Persons serving the aged and who display a tough, cynical attitude may tend to look down on the older person as one who cannot look after himself, hasn't prepared for his future, and might make him feel guilty for using the taxpayers' money, for taking up their time, for not expressing gratitude.

Attitude 2 — Denial of the effects of aging

To strongly deny the effects of aging (as indicated by the low scores) would be to refuse to admit that changes do take place, for most people, with aging, for example, in eyesight, hearing, speed of movement.

Persons caring for the aged and who strongly deny the effects of aging may tend to have too high expectations of the older person and expect him to act beyond his capabilities. On the other hand those who accept the changes that come with aging may overreact in the opposite direction and not involve the older person in any activities or decision making. Both would be detrimental to the well being of the older person.

Attitude 3 — Anxiety about aging

To have much anxiety about aging (as indicated by the low scores) reveals that the person equates old age with problems, with loss of functioning capacity, with loss of ability to look after oneself, with the belief that most old people are institutionalized.

Persons caring for the aged and who are very anxious about aging may feel guilty about their anxiety and their negative feelings about old age and may be artificial in their relations with old people.

Attitude 4 — Social distance to the old

Much social distance (as indicated by the low scores) denotes the belief that the old and the young cannot communicate and therefore there is no understanding between the generations.

Persons caring for the aged who display great social distance will tend to dislike and distrust older people.

Attitude 5 — Family responsibility toward aged parents

To be strongly for family responsibility (as indicated by the low scores) implies the belief that the responsibility for the care of the aged rests primarily with the family - the family must look after the older members whatever the cost to family harmony, whatever their income, housing, health or other responsibilities.

Persons caring for the aged who are strongly for family responsibility may make the family feel guilty for not caring for their own and placing their parent in an institution.

Attitude 6 — Public responsibility for the rights and well being of the aged versus unconcern for the aged as a group

To be strongly for public responsibility (as indicated by the low scores) is to recognize that services should be available for the aged should they require them, eg., home help, medical care, transportation, etc.; that the aged should not be economically or socially deprived because of their age.

Persons caring for the aged and who are strongly for public responsibility may overrate their role and discount that of the family in the life of the older person. They may consider the family as a nuisance or ignore it entirely.

Attitude 7 — Unfavourable stereotype of the old (as inferior) versus acceptance of the old as equals

Acceptance of the old (as indicated by the high scores) means to accept old people as individuals and to recognize there are differences among the old as among the young. At the other end of the scale, to hold a strong or unfavourable stereotype of the old (as indicated by the low scores) would be the tendency to generalize and to regard all old people as alike.

Persons caring for the aged should be aware of and take into consideration the individual differences that exist among old people — differences in socio-economic background, experience, health, etc., and should not expect that activities which may be appropriate for one older person's life style be appropriate for all.

****

CODE NUMBER_____

PERCEPTIONS OF AGE--QUESTIONNAIRE

1. What makes a person seem old?

2. What makes a person seem young?

3. Think of two people you know who are 50 years old. One seems older than his/her years, one younger. What are the differences between the two?

4. What is the best thing about being 70 years old?

5. What is the worst thing about being 70 years old?

6. How old do you think you will be when you marry?____

7. How old do you think you will be when you have your first child?____

8. How old do you think you will be when all your children are gone from home?____

9. How old do you think you will be when you become a grandparent?____

10. How old do you think you will be when you retire from the work force?____

11. How old do you think you will be when you die?____

12. At what age would you prefer to die____
Why?

13. How old will you be when you stop going to school?____

14. Do you think about your own aging?

a great deal	quite a bit	some	not very much	not at all
1	2	3	4	5

Circle the number closest to your feelings.

15. How many careers do you expect to have?____

16. What will you do when you retire?

17. What activities will you perform as a citizen at age 65?

18. What activities will you perform as a family member at age 65?

19. What activities will you perform as a worker at age 65?

20. Where do you think you will live at age 75? 85? 95? (examples: home, with children, apartment, nursing home, hospital)

21. What age would you most like to be?____
Why?

22. What years do you feel are the most important years of a person's life?

23. Do you expect to enjoy your old age?

24. Do you usually notice older people?

a lot	quite a bit	some	not very much	none at all
1	2	3	4	5

Circle the number closest to your feelings.

CODE NUMBER_____

STUDENT EVALUATION OF UNIT
ON GERONTOLOGY

	very much so	some what	not at all
1. Do you feel that a unit on aging is beneficial for students your age? . .			
2. Did the unit on aging make you examine your own values, attitudes, or feelings? . . . . . Explain			
3. Did the unit on aging make you think about the meaning of life?			
4. Did the unit help you to understand the aging process better than you did before?			
5. Did it make you think about your own aging?.			
6. Are there any things in your present life style that the unit on aging made you think about?			
7. Did it make you think that there are some satisfactions that come only with age?			
8. Have you given any more thought as a result of the unit to the kind of older person you would like to be? .			
9. Do you feel that students would benefit from such information at a younger age than you are?			
10. Has it made you notice older people more?			
11. Has it made you more aware of the treatment of older people in the media?.			
12. Has it made you more aware of the needs and problems of those presently elderly?			

Comments:

Rank in Order the Effectiveness

Slides . . . . . ___
Movies . . . . . ___
Tests. . . . . ___
Video Tapes. . . . . ___
Bulletin Boards. . . ___
Teacher Handouts. . . ___
Discussions . . . . . ___
Older People in Class ___
Lectures . . . . . ___
Other Materials (specify)

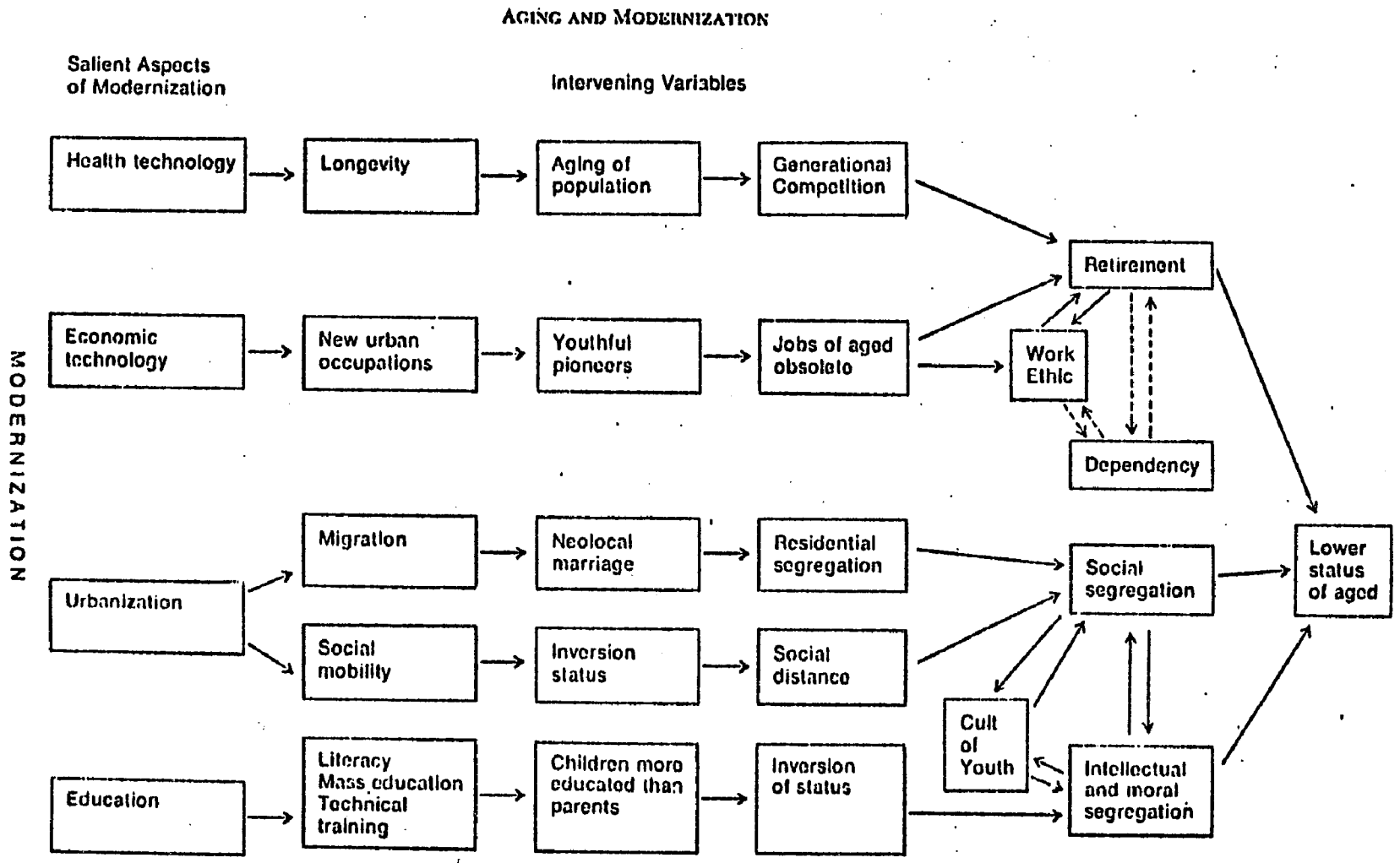
STUDENT MEDIA EVALUATION
GERONTOLOGY UNIT

MEDIA	INFORMATION GAINED			DID IT MAKE YOU EXAMINE YOUR OWN VALUES, ATTITUDES, FEELINGS?			WOULD YOU RECOMMEND USING IT FOR STUDENTS YOUR AGE?	
	LOW	MEDIUM	HIGH	NO	SOME WHAT	CONSID-ERABLY	YES	NO
MOVIES:								
Weekend								
But Is This Progress?								
Peege								
Trigger Films To Market								
Mrs. "P"								
Cold Spring Idea								
FILMSTRIPS:								
Perceptions of Age								
Biology of Aging								
VIDEO TAPES:								
Maggie Kuhn								
Sensory Loss Simulation								
SLIDES:								
Normal Eye and Aged Eye								

APPENDIX C

Handouts

MODEL OF DYNAMICS OF ASPECTS OF MODERNIZATION LEADING TO LOWER STATUS OF AGED



SOURCE: From Donald O. Cowgill, "Aging and Modernization: A Revision of the Theory," in *Late Life*, ed. Jaber Gubrium

STUDY QUESTIONS
BUT IS THIS PROGRESS

Name:_____ Period:_____

1. How have Linda Lapham's human relationships been affected or shaped by technology? Be specific.

2. Why did the Corwins and the Bulmohrs feel better about themselves and have more pride and feel more needed than young people have and feel today?

3. Rugged individualism has been replaced by other feelings which people have about their work, play and sex habits. What are some of these feelings today?

4. How can older people help younger people to understand why the older people look and feel differently about current problems? Why is this understanding necessary?

5. Explain: "Technology helps us to have things we used to have before technology."

6. In what ways has technology tended to destroy the human qualities and characteristics of our lives?

7. What is so sad about Linda's statement that she was relieved to find that she had it "more together" than the computer did?

8. What percent of Cal Corwin's peers went to college? of yours?

9. What are some things technology cannot do for us?

10. Why do people feel a need to have their families "child-centered" today in so many cases?

11. Why does Linda say, "Purpose is something my generation doesn't have"? Are there some exceptions to her statement?

12. Why do so many people feel hopeless, frustrated, helpless and incapable of coping today?

APPENDIX D

Brief Summary of Audio-Visual Materials

Films

Weekend

10 min. color j-s-c-a

A family of four--a small boy, his parents and invalid grandfather--go on a picnic in the country. As the seemingly naturalistic scene unfolds it becomes slowly clear that the old man will be left behind at picnic's end.

But Is This Progress?

51 min. color s-c-a

This study of the effects of technology on three generations of Americans questions the quality of life that technology creates. The smokestacks that used to mean prosperity now mean pollution. The suburbs that used to mean grass and good schools now mean urban sprawl. The car that meant freedom now means highways destroying landscapes. Today's young people, products of transient families, of a car culture, of moral revolution, of greater urbanization are saying that technology has made us neither wise or happy.

Peege

28 min. color s-c-a

Deals with the breaking of communication barriers to reach those isolated by age and failing mental capacities. A young man home for Christmas accompanies his family to visit his dying grandmother in a nursing home. Peege (the grandmother's nickname) has gone blind and has lost some of her mental faculties. The visit is awkward because none of the members of the family know how to deal with the nonresponsive shell that was once a vibrant woman. When they

CODE: j = junior high school
s = senior high school
c = college
a = adult

find an excuse to leave, the young man remains with her for a few minutes. He tries to trigger some response by whispering into her ear some of his early memories of her. He uses simple human touch to form an expression of closeness. His efforts succeed, and he is able to communicate despite the barriers of disease and age. When he leaves, she is alone again, but now with a feeling of worth, knowing that someone cares.

Trigger Films

Trigger films are brief (1-4 minutes), evocative, color films designed to "trigger" discussion. Developed in 1971 for state and national White House Conferences on Aging, these discussion films succinctly illustrate some of the problems of growing old in America. They stop short of information endings, leaving the audience to supply the conclusion--to discuss the problems. The trigger films are widely used by practitioners in the field of aging. They won major awards at the U.S. Industrial Film Festival and the Venice Film Festival. Following are summaries of the two films used in the unit:

To Market

Follows a proud, vulnerable old lady doing her meager marketing in a supermarket.

Mrs. 'P'

Mrs. 'P,' an elderly black woman, loves her part-time job working with children in a hospital program. She doesn't know that she is about to be fired because her arthritis has become a handicap.

Cold Spring Idea

13 min. c-a

Through a program of reorientation older people can continue to grow and can gain the courage to keep their emotional independence and usefulness. Program shown involves music, woodworking, painting, sculpture, pottery, gardening, writing and other activities.

Filmstrips

Perspectives on Aging

Designed primarily for health care personnel, the materials in this series make up a comprehensive study of the elderly and their problems, and provide innovative, in-depth solutions. These materials may be purchased as a complete unit, or separately, for specialized classes. When purchased individually, each program comes with its own instructor's manual.

Myths and Realities

Presents common misconceptions about the aged, and realistically explores financial resources, health, housing, transportation, retirement and social roles.

Physical Changes and Their Implications

Examines the physical changes that accompany aging and the manner in which the body systems and functions are affected by them.

Video Tapes

Maggie Kuhn, Leader of the "Gray Panthers" giving a speech in Milwaukee, Wisconsin, about "Ageism" and its effects upon people; the creativity that is within the elderly population; and the organization of the elderly to work for improving life for all ages.

Sensory Loss Simulation: prepared by the Institute of Gerontology, University of Michigan-Wayne State University to illustrate the normal sensory losses that take place with aging and how they affect the relationships of the elderly and their ability to negotiate the environment, and what can be done by greater human sensitivity and better environmental design.

Slides

This is a series of slides that show matched scenes of an apartment, refrigerator, stove, cupboard, store, street, etc., all the daily environments of life as seen by the normal twenty-year-old eye and by the normally aged seventy-year-old eye. The major focus is how can environments be designed to give the older citizen the greatest support and security.

APPENDIX E

Detailed Analysis of Covariance

TABLE 41

ANALYSIS OF COVARIANCE OF POST-COGNITIVE TEST SCORES CONTROLLING FOR PRE-TEST DIFFERENCES

	DF	Sum of Squares	Mean Square	F-Stat.	Sig.
Equality Adjusted Means	1	1418.8	1418.8	170.43	.0000
Covariates	1	207.88	207.88	24.972	.0000
Error	143	1190.4	8.325		
Equal Slopes	1	2.0741	2.0741	.2478	.6194
Error	142	1188.4	8.3688		

Group	Post-Means	Adjusted Post-Means
Control	12.46	12.29
Experimental	18.53	18.65

TABLE 42

ANALYSIS OF COVARIANCE OF POST-BALL STATE AGING AND THE AGED QUESTIONNAIRE TOTAL SCORES CONTROLLING FOR PRE-TEST DIFFERENCES

	DF	Sum of Squares	Mean Square	F-Stat.	Sig.	Group	Post-Means	Adjusted Post-Means
Equality Adjusted Means	1	785.78	785.78	21.370	.0000	Control	92.60	96.89
Covariates	1	8682.3	8682.3	236.13	.0000	Experimental	92.08	97.26
Error	118	4338.8	36.769					
Equal Slopes	1	.48266	.48266	.13017	.9094			
Error	117	4338.3	37.080					

TABLE 43

ANALYSIS OF COVARIANCE: POST-TEST SCORES--OPINIONS ABOUT PEOPLE--CONTROLLING FOR PRE-TEST DIFFERENCES

	DF	Sum of Squares	Mean Square	F-Stat.	Sig.	Control Group		Experimental Group	
						Post-Means	Adjusted Post-Means	Post-Means	Adjusted Post-Means
Attitude 1:									
Equality Adjusted Means	1	1637.5	1637.5	8.55	.0040	89.74	81.13	85.28	92.33
Covariates	1	26984.	26984.	140.89	.0000				
Error	143	27388.							
Equal Slopes	1	359.67	359.67	1.8897	.1714				
Error	142	27028.	190.34						
Attitude 2:									
Equality Adjusted Means	1	.18785	.18785	.11507	.9730	16.902	15.176	15.911	15.887
Covariates	1	1433.4	1433.4	87.805	.0000				
Error	143	2334.4	16.324						
Equal Slopes	1	6.9488	6.9488	.42395	.5160				
Error	142	2327.4	16.390						
Attitude 3:									
Equality Adjusted Means	1	2745.0	2745.0	16.539	.0001	68.311	66.177	73.494	75.026
Covariates	1	36042.	36042.	217.16					
Error	143	23734.	165.97						
Equal Slopes	1	75.930	75.930	.45575	.5007				
Error	142	23658.	166.61						

TABLE 43 (Continued)

	DF	Sum of Squares	Mean Square	F-Stat.	Sig.	Control Group		Experimental Group	
						Post-Means	Adjusted Post-Means	Post-Means	Adjusted Post-Means
Attitude 4:									
Equality Adjusted Means	1	4063.5	4063.5	16.530	.0001	123.95	123.33	117.04	128.29
Covariates	1	47686.	47686.	193.98	.0000				
Error	143	35154.	245.83						
Equal Slopes	1	756.07	756.07	3.1212	.0795				
Error	142	34398.	242.24						
Attitude 5:									
Equality Adjusted Means	1	3.8389	3.8389	.10142	.9199	107.56	106.04	106.86	106.53
Covariates	1	56606.	56606.	149.55	.0000				
Error	143	54126.	378.50						
Equal Slopes	1	1391.5	1391.5	3.7471	.0549				
Error	142	52734.	371.37						
Attitude 6:									
Equality Adjusted Means	1	236.32	236.32	.87159	.3521	70.48	66.39	69.60	67.01
Covariates	1	10643.	10643.	39.252	.0000				
Error									
Equal Slopes	1	604.23	604.23	2.2479	.1360				
Error	142	38168.	268.79						
Attitude 7:									
Equality Adjusted Means	1	552.59	552.59	6.3333	.0131	54.62	54.51	52.21	56.24
Covariates	1	13025.	13025.	149.28	.0000				
Error	143	12477.	87.252						
Equal Slopes	1	291.16	291.16	3.3929	.0676				
Error	142	12186.	85.816						

APPENDIX F

Perceptions of Age Questionnaire Tallies for Questions 1 to 3

TABLE 44

PERCEPTIONS OF AGE: QUESTION 1: WHAT MAKES A PERSON SEEM OLD? (PHYSICAL ATTRIBUTES)

Physical Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
1. Anything to do with physical appearance (wrinkles, grey hair etc.)	1	35.6	52	36.3	53	32.7	20	26.2	16	37.6	32	43.5	37
	2	--	13	--	9	--	3	--	2	--	10	--	7
	3	--	5	--	2	--	4	--	2	--	1	--	--
	4	--	1	--	--	--	--	--	--	--	1	--	--
2. Anything to do with health	1	2.1	3	3.4	5	0.7	1	4.9	3	2.4	2	2.4	2
	2	--	7	--	7	--	3	--	4	--	4	--	3
	3	--	3	--	--	--	--	--	--	--	3	--	--
3. Anything to do with sensory loss (hearing, vision, etc.)	2	--	2	--	1	--	1	--	--	--	1	--	1
	3	--	1	--	1	--	1	--	1	--	--	--	--
4. Lack of mobility (use of cane, wheel chair, etc.)	1	8.9	13	10.3	14	14.8	9	9.8	6	4.7	4	10.6	9
	2	--	13	--	17	--	6	--	4	--	7	--	13
	3	--	3	--	3	--	1	--	--	--	2	--	3
	4	--	3	--	1	--	1	--	1	--	2	--	--
5. Grooming; don't take care of themselves	1	0.7	1	0.7	1	--	--	1.6	1	1.2	1	--	--
	2	--	1	--	--	--	1	--	--	--	--	--	--

TABLE 44 (Continued)

Physical Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
6. Nervousness	2	--	3	--	--	--	1	--	--	--	2	--	--
	3	--	1	--	2	--	1	--	1	--	--	--	1
7. The way they dress	2	--	--	--	2	--	--	--	1	--	--	--	1
	3	--	1	--	1	--	--	--	--	--	1	--	1
8. Needs care/help; is helpless	1	0.6	1	--	--	--	--	--	--	1.2	1	--	--
	3	--	1	--	--	--	--	--	--	--	1	--	--
9. Other physical attributes	1	0.6	1	0.6	1	1.6	1	1.6	1	--	--	--	--
	3	--	1	--	--	--	1	--	--	--	--	--	--
Total			130		121		55		43		75		78

TABLE 45

PERCEPTIONS OF AGE: QUESTION 1: WHAT MAKES A PERSON SEEM OLD? (PSYCHOLOGICAL ATTRIBUTES)

Psychological Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
1. Lack of desire to learn and grow	2	--	--	--	1	--	--	--	1	--	--	--	--
2. Forgetfulness	1	0.6	1	--	--	--	--	--	--	1.2	1	--	--
	2	--	1	--	1	--	--	--	1	--	1	--	--
	3	--	1	--	--	--	1	--	--	--	--	--	--
3. Psychological disorders (depression, etc.)	1	0.6	1	--	--	1.6	1	--	--	--	--	--	--
4. Senility	1	1.4	2	0.6	1	--	--	--	--	2.4	2	1.2	1
	2	--	1	--	4	--	1	--	2	--	--	--	2
	4	--	2	--	--	--	2	--	--	--	--	--	--
5. Rigidity ("stern/strict/never laughs")	1	--	--	1.4	2	--	--	1.6	1	--	--	1.2	1
	2	--	5	--	--	--	2	--	--	--	3	--	--
	3		3		2		2				1		2
6. Loss of drive, ambition	1	0.6	1	0.6	1	1.6	1	1.6	1	--	--	--	--
	2	--	1	--	1	--	1	--	1	--	--	--	--
	3	--	--	--	1	--	--	--	--	--	--	--	--

TABLE 45 (Continued)

Psychological Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
7. Being/acting alive	1	0.6	1	0.6	1	--	--	1.6	1	1.2	1	--	--
	2	--	--	--	2	--	--	--	1	--	--	--	1
	3	--	3	--	2	--	2	--	2	--	1	--	--
	4	--	1	--	--	--	1	--	--	--	--	--	--
8. State of mind	1	12.3	18	9.6	14	8.2	5	6.6	4	15.3	13	11.8	10
	2	--	7	--	7	--	3	--	2	--	4	--	5
	3	--	6	--	--	--	1	--	--	--	5	--	--
	4	--	2	--	2	--	1	--	1	--	1	--	1
9. Self-esteem	1	2.7	4	2.7	4	3.3	2	4.9	3	2.4	2	1.2	1
	2	--	3	--	4	--	3	--	4	--	--	--	--
10. Other psychological attributes	1	0.6	1	0.6	1	1.6	1	--	--	--	--	1.2	1
	4	--	1	--	--	--	1	--	--	--	--	--	--
Total			66		51		31		25		35		26

TABLE 46

PERCEPTIONS OF AGE: QUESTION 1: WHAT MAKES A PERSON SEEM OLD? (SOCIAL ATTRIBUTES)

Social Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
1. Relationships with significant others	1	0.6	1	2.1	3	--	--	--	--	1.2	1	3.5	3
	2		2		1		1				1		1
	4	--	--	--	1	--	--	--	1	--	--	--	--
2. Relationships with young	1	0.6	1	--	--	1.6	1	--	--	--	--	--	--
3. Loss of social roles (unable to do what used to, or doesn't want to do what used to, etc.)	1	8.2	12	6.2	9	6.6	4	13.1	8	9.4	8	1.2	1
	2	--	--	--	2	--	--	--	2	--	--	--	--
	3	--	2	--	3	--	2	--	2	--	--	--	1
4. Attitudes toward change	1	4.8	7	3.4	5	11.5	7	8.2	5	--	--	--	--
	2	--	5	--	4	--	5	--	4	--	--	--	--
	3	--	1	--	--	--	1	--	--	--	--	--	--
5. Responsiveness toward current events/surrounding	2	--	1	--	--	--	1	--	--	--	--	--	--
6. Other social attributes	2	--	1	--	--	--	1	--	--	--	--	--	--
	3	--	--	--	1	--	--	--	1	--	--	--	--
Total			33		29		23		23		10		6

TABLE 47

PERCEPTIONS OF AGE: QUESTION 1: WHAT MAKES A PERSON SEEM OLD? (OTHER ATTRIBUTES)

Other Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
1. Experience with life	1	0.6	1	--	--	--	--	--	--	1.2	1	--	--
	3	--	1	--	--	--	1	--	--	--	--	--	--
2. Loneliness; isolation	1	--	--	0.6	1	--	--	--	--	--	--	1.2	1
	3	--	--	--	1	--	--	--	--	--	--		1
3. Life satisfaction; live freely; do everything one wants to do	3	--	--	--	1	--	--	--	--	--	--	--	1
4. Risk-taking; tendency to take risks	2	--	1	--	1	--	1	--	1	--	--	--	--
5. Actions; the way they act	1	10.3	15	11.6	17	8.2	5	8.2	5	11.8	10	14.1	12
	2	--	17	--	10	--	4	--	2	--	13	--	8
	3	--	1	--	4	--	--	--	--	--	1	--	4
6. Way of speaking/talking	1	1.4	2	0.6	1	1.6	1	1.6	1	1.2	1	--	--
	2	--	3	--	2	--	2	--	1	--	1	--	1
	3	--	2	--	2	--	--	--	--	--	2	--	2
7. Other attributes	2	--	--	--	1	--	--	--	--	--	--	--	1
Total			42		42		14		10		28		32

TABLE 48

PERCEPTIONS OF AGE: QUESTION 2: WHAT MAKES A PERSON SEEM YOUNG? (PHYSICAL ATTRIBUTES)

Physical Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
1. Anything to do with physical appearance	1	20.5	30	26.0	38	18.0	11	24.6	15	22.3	19	27.1	23
	2	--	19	--	11	--	7	--	2	--	12	--	9
	3	--	4	--	--	--	3	--	--	--	1	--	--
2. Anything to do with health	1	6.2	9	5.5	8	6.6	4	8.2	5	5.9	5	3.5	3
	2	--	6	--	6	--	2	--	3	--	4	--	3
	3	--	3	--	1	--	1	--	1	--	2	--	--
3. Mobility not limited (no need for cane, wheelchair, etc.)	1	22.6	33	15.1	22	14.8	9	8.2	5	28.2	24	20.0	17
	2	--	14	--	16	--	9	--	6	--	5	--	10
	3	--	3	--	3	--	--	--	2	--	3	--	1
	4	--	2	--	2	--	1	--	--	--	1	--	2
4. Grooming; take care of themselves	1	0.6	1	0.6	1	--	--	1.6	1	1.2	1	--	--
	2	--	1	--	1	--	1	--	--	--	--	--	1
5. Lack of nervousness	2	--	1	--	--	--	--	--	--	--	1	--	--
	4	--	1	--	--	--	1	--	--	--	--	--	--
6. The way they dress	1	0.6	1	--	--	1.6	1	--	--	--	--	--	--
	2	--	1	--	3	--	--	--	1	--	1	--	2
	3	--	--	--	1	--	--	--	--	--	--	--	1

TABLE 48 (Continued)

Physical Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
7. Needs no care/help; is not helpless	1	--	--	1.4	2	--	--	--	--	--	--	2.4	2
8. Other physical attributes	1	0.6	1	--	--	1.6	1	--	--	--	--	--	--
	3	--	--	--	1	--	--	--	1	--	--	--	--
Total			130		116		51		42		79		74

TABLE 49

PERCEPTIONS OF AGE: QUESTION 2: WHAT MAKES A PERSON SEEM YOUNG? (PSYCHOLOGICAL ATTRIBUTES)

Psychological Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
1. Desire to learn and grow	1	1.4	2	1.4	2	1.6	1	3.3	2	1.2	1	--	--
	2	--	2	--	1	--	1	--	--	--	1	--	1
	3	--	--	--	2	--	--	--	1	--	--	--	1
2. Good memory	2	--	1	--	1	--	1	--	1	--	--	--	--
3. No psychological disorders (depression, etc.)	1	--	--	0.6	1	--	--	1.6	1	--	--	--	--
	3	--	1	--	--	--	1	--	--	--	--	--	--
4. Lack of senility	1	--	--	1.4	2	--	--	--	--	--	--	2.4	2
	2	--	1	--	1	--	--	--	--	--	1	--	1
	3	--	1	--	--	--	--	--	--	--	1	--	--
	4	--	1	--	--	--	--	--	--	--	1	--	--
5. Non-rigidity	1	1.4	2	1.4	2	1.6	1	--	--	1.2	1	2.4	2
	2	--	1	--	--	--	--	--	--	--	1	--	--
	3	--	1	--	2	--	1	--	--	--	--	--	2
6. Has drive; ambition	1	1.4	2	1.4	2	--	--	1.6	1	2.4	2	1.2	1
	2	--	2	--	--	--	2	--	--	--	--	--	--
7. Being/acting alive	1	7.5	11	6.2	9	14.8	9	14.8	9	2.4	2	--	--
	2	--	4	--	5	--	--	--	3	--	4	--	2
	3	--	1	--	1	--	1	--	1	--	--	--	--

TABLE 49 (Continued)

Psychological Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
8. State of mind	1	8.2	12	11.0	16	6.6	4	8.2	5	9.4	8	12.9	11
	2	--	8	--	7	--	3	--	2	--	5	--	5
	3	--	3	--	1	--	1	--	--	--	2	--	1
	4	--	2	--	--	--	--	--	--	--	2	--	
9. Self-esteem	1	0.6	1	1.4	2	1.6	1	1.6	1	--	--	1.2	1
	2	--	1	--	--	--	--	--	--	--	1	--	--
	3	--	1	--	--	--	--	--	--	--	1	--	--
10. Other psychological attributes	2	--	1	--	--	--	1	--	--	--	--	--	--
Total			62		57		28		27		34		30

TABLE 50

PERCEPTIONS OF AGE: QUESTION 2: WHAT MAKES A PERSON SEEM YOUNG? (SOCIAL ATTRIBUTES)

Social Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
1. Relationships with significant others	1	1.4	2	0.6	1	3.3	2	--	--	--	--	1.2	1
	2	--	3	--	3	--	2	--	2	--	1	--	1
	3	--	1	--	--	--	1	--	--	--	--	--	--
2. Relationships with young	1	1.4	2	--	--	--	--	--	--	2.4	2	--	--
	2	--	1	--	1	--	--	--	--	--	2	--	1
3. Retainment of social roles (able to do what used to, or still wants to do what used to, etc.)	1	5.5	8	1.4	2	4.9	3	3.3	2	5.9	5	--	--
	2	--	--	--	5	--	--	--	3	--	--	--	2
4. Attitudes toward change	1	3.4	5	0.6	1	8.2	5	1.6	1	--	--	--	--
	2	--	2	--	3	--	2	--	3	--	--	--	--
	3	--	--	--	2	--	--	--	2	--	--	--	--
5. Responsiveness toward current events/surrounding	1	0.6	1	--	--	1.6	1	--	--	--	--	--	--
	2	--	--	--	1	--	--	--	1	--	--	--	--
6. Ability to work, attitude toward work	1	--	--	0.6	1	--	--	1.6	1	--	--	--	--
7. Other social attributes	2	--	1	--	--	--	1	--	--	--	--	--	--
Total			27		20		16		15		11		5

TABLE 51

PERCEPTIONS OF AGE: QUESTION 2: WHAT MAKES A PERSON SEEM YOUNG? (OTHER ATTRIBUTES)

Other Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
1. Life satisfaction; live freely; do everything one wants to do	1	0.6	1	1.4	2	1.6	1	3.3	2	--	--	--	--
	2	--	1	--	1	--	1	--	--	--	--	--	1
2. Risk-taking; tendency to take risks	3	--	1	--	--	--	--	--	--	--	1	--	--
3. Actions; the way they act	1	8.2	12	11.6	17	6.6	4	3.3	2	9.4	8	17.6	15
	2	--	12	--	7	--	5	--	2	--	7	--	5
	3	--	3	--	5	--	1	--	1	--	2	--	4
	4	--	1	--	1	--	--	--	--	--	1	--	1
4. Way of speaking/talking	1	0.6	1	--	--	--	--	--	--	1.2	1	--	--
	2	--	2	--	1	--	1	--	--	--	1	--	1
	3	--	4	--	1	--	--	--	--	--	4	--	1
5. Other attributes	1	0.6	1	0.6	1	1.6	1	1.6	1	--	--	--	--
	2	--	--	--	1	--	--	--	--	--	--	--	1
Total			39		37		14		8		25		29

TABLE 52

PERCEPTIONS OF AGE: QUESTION 3: WHAT IS THE DIFFERENCE BETWEEN TWO 50-YEAR-OLDS? (PHYSICAL ATTRIBUTES)

Physical Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
1. Anything to do with physical appearance (wrinkles, grey hair, etc.)	1	7.5	11	12.3	18	14.8	9	16.4	10	2.4	2	9.4	8
	2	--	8	--	5	--	4	--	2	--	4	--	3
	4	--	1	--	--	--	--	--	--	--	1	--	
2. Anything to do with health	1	1.4	2	1.4	2	1.6	1	1.6	1	1.2	1	1.2	1
	2	--	4	--	5	--	4	--	3	--	--	--	2
	3	--	--	--	1	--	--	--	1	--	--	--	--
	4	--	1	--	--	--	1	--	--	--	--	--	--
3. Lack of mobility (use of cane, wheelchair, etc.)	1	19.9	29	21.2	29	19.7	12	11.5	8	20.0	17	28.1	22
	2	--	9	--	8	--	7	--	5	--	2	--	3
	3	--	--	--	1	--	--	--	--	--	--	--	1
	4	--	--	--	1	--	--	--	--	--	--	--	1
4. Grooming; don't take care of themselves	1	0.6	1	--	--	1.6	1	--	--	--	--	--	--
	2	--	--	--	2	--	--	--	2	--	--	--	--
5. The way they dress	1	0.6	1	--	--	1.6	1	--	--	--	--	--	--
	2	--	--	--	2	--	--	--	--	--	--	--	2
	3	--	2	--	--	--	1	--	--	--	1	--	--

TABLE 52 (Continued)

Physical Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
6. Worn out by hard work; effect of work on body	1	--	--	0.6	1	--	--	--	--	1.2	1	--	--
7. Other physical attributes	1	0.6	1	0.6	1	1.6	1	1.6	1	--	--	--	--
	3	--	2	--	1	--	2	--	1	--	--	--	--
Total			72		77		43		34		29		43

TABLE 53

PERCEPTIONS OF AGE: QUESTION 3: WHAT IS THE DIFFERENCE BETWEEN TWO 50-YEAR-OLDS? (PSYCHOLOGICAL ATTRIBUTES)

Psychological Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
1. Desire (lack of desire) to learn and grow	2	--	3	--	3	--	2	--	2	--	1	--	1
	3	--	1	--	2	--	1	--	2	--	--	--	--
2. Forgetfulness	1	--	--	0.6	1	--	--	1.2	1	--	--	--	--
3. Senility	1	0.6	1	0.6	1	--	--	--	--	1.2	1	1.2	1
4. Rigidity ("stern/strict/never laughs")	1	6.8	10	4.8	7	8.2	5	9.8	6	5.9	5	1.2	1
	3	--	4	--	4	--	3	--	2	--	1	--	2
5. Loss of drive, ambition	1	0.6	1	--	--	1.6	1	--	--	--	--	--	--
	2	--	1	--	2	--	--	--	2	--	1	--	--
6. Being/acting alive	1	2.1	3	3.4	5	3.3	2	6.6	4	1.2	1	1.2	1
	2	--	5	--	3	--	4	--	3	--	1	--	--
	3	--	2	--	2	--	2	--	2	--	--	--	--
7. State of mind	1	11.0	16	11.0	16	11.5	7	11.5	7	10.6	9	10.6	9
	2	--	8	--	8	--	4	--	3	--	4	--	5
	3	--	1	--	2	--	1	--	2	--	--	--	--
8. Self-esteem	1	0.6	1	0.6	1	1.6	1	1.6	1	--	--	--	--
	3	--	1	--	--	--	1	--	--	--	--	--	--
Total			58		57		34		37		24		20

TABLE 54

PERCEPTIONS OF AGE: QUESTION 3: WHAT IS THE DIFFERENCE BETWEEN TWO 50-YEAR-OLDS? (SOCIAL ATTRIBUTES)

Social Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
1. Relationships with significant others	1	0.6	1	0.6	1	1.6	1	1.6	1	--	--	--	--
	2	--	3	--	3	--	2	--	2	--	1	--	1
	4	--	--	--	1	--	--	--	--	--	--	--	1
2. Relationships with young	1	1.4	2	0.6	1	1.6	1	1.6	1	1.4	1	--	--
	2	--	3	--	--	--	1	--	--	--	2	--	--
	4	--	--	--	1	--	--	--	1	--	--	--	--
3. Loss of social roles (unable to do what used to, or doesn't want to do what used to, etc.)	1	4.8	7	2.1	3	4.9	3	1.6	1	4.7	4	2.4	2
	2	--	4	--	2	--	4	--	2	--	--	--	--
4. Attitudes toward change	1	4.1	6	4.1	6	9.8	6	9.8	6	--	--	--	--
	2	--	3	--	1	--	3	--	1	--	--	--	--
	3	--	1	--	--	--	1	--	--	--	--	--	--
5. Responsiveness toward current events/surrounding	3	--	1	--	--	--	--	--	--	--	1	--	--
6. Ability to work; attitude toward work	1	--	--	0.6	1	--	--	--	--	--	--	1.2	1
7. Other social attributes	2	--	1	--	--	--	--	--	--	--	1	--	--
Total			32		20		22		15		10		5

TABLE 55

PERCEPTIONS OF AGE: QUESTION 3: WHAT IS THE DIFFERENCE BETWEEN TWO 50-YEAR-OLDS? (OTHER ATTRIBUTES)

Other Attributes	Mention	Both Groups				Control Group				Experimental Group			
		Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
		%	#	%	#	%	#	%	#	%	#	%	#
1. Life satisfaction; live freely; do everything one wants to do	1	0.6	1	--	--	1.6	1	--	--	--	--	--	--
2. Actions; the way they act	1	4.8	7	4.8	7	3.3	2	3.3	2	5.9	5	5.9	5
	2	--	5	--	2	--	3	--	1	--	2	--	1
3. Way of speaking/talking	2	--	1	--	1	--	--	--	1	--	1	--	--
	3	--	1	--	--	--	1	--	--	--	--	--	--
Total			15		10		7		4		8		6

APPENDIX G

Comparison of Used and Unused Data

TABLE 56

COMPARISON OF USED AND UNUSED DATA

	Unused Data		Used Data		
	N	Mean	Range of Scores	Mean	Adjusted Mean
Cognitive Test					
Control Group					
Pre-Test	4	13.0	8-18	12.95	
Post-Test	13	13.0	6-17	12.46	12.29
Incomplete	2	13.5			
Control Total	19	13.1			
Experimental Group					
Pre-Test	19	12.45	4-17	12.37	
Post-Test	1	17	9-24	18.53	18.65
Incomplete	9	13.67			
Experimental Total	29	13.0			
Grand Total	48	13.02			
Ball State Aging and the Aged					
Control Group					
Pre-Test	4	87.75	69-120	93.1	
Post-Test	13	92.15	71-116	92.6	92.1
Incomplete	3	91.0			
Control Total	20	91.1			

TABLE 56 (Continued)

	Unused Data		Used Data		
	N	Mean	Range of Scores	Mean	Adjusted Mean
Ball State Aging and the Aged					
Experimental Group					
Pre-Test	19	89.4	68-127	92.1	
Post-Test	1	81.0	74-122	96.9	97.3
Incomplete	10	82.1			
Experimental Total	30	86.7			
Grand Total	50	88.5			
Opinions About People--Attitude 1					
Control Group					
Pre-Test	4	88.75	38-129	93.92	
Post-Test	12	85.58	34-126	89.74	85.28
Incomplete	1	90.0			
Control Total	17	86.59			
Experimental Group					
Pre-Test	20	90.2	22-144	82.98	
Post-Test	1	81.0	33-144	89.13	92.33
Incomplete	5	99.0			
Experimental Total	26	91.54			
Grand Total	43	89.58			

TABLE 56 (Continued)

	Unused Data		Used Data		
	N	Mean	Range of Scores	Mean	Adjusted Mean
Opinions About People--Attitude 2					
Control Group					
Pre-Test	4	17.75	7-26	17.62	
Post-Test	12	15.0	6-25	16.90	15.91
Incomplete	1	15.0			
Control Total	17	15.65			
Experimental Group					
Pre-Test	20	14.2	4-27	14.95	
Post-Test	1	12.0	3-27	15.18	15.89
Incomplete	5	15.6			
Experimental Total	26	14.38			
Grand Total	43	14.88			
Opinions About People--Attitude 3					
Control Group					
Pre-Test	4	73.0	29-117	71.33	
Post-Test	12	68.58	29-109	68.31	66.18
Incomplete	1	50.0			
Control Total	17	68.53			

TABLE 56 (Continued)

	Unused Data		Used Data		
	N	Mean	Range of Scores	Mean	Adjusted Mean
Opinions About People--Attitude 3					
Experimental Group					
Pre-Test	20	68.4	19-114	66.61	
Post-Test	1	84.0	21-116	73.49	75.03
Incomplete	4	95.75			
Experimental Total	25	73.4			
Grand Total	42	71.43			
Opinions About People--Attitude 4					
Control Group					
Pre-Test	4	123.25	62-167	129.31	
Post-Test	12	104.0	64-161	123.95	117.04
Incomplete	1	115.0			
Control Total	17	109.18	62-167		
Experimental Group					
Pre-Test	20	124.70	43-171	112.82	
Post-Test	1	144.0	41-171	123.33	128.29
Incomplete	5	131.4			
Experimental Total	26	126.73			
Grand Total	43	119.79			

TABLE 56 (Continued)

	Unused Data		Used Data		
	N	Mean	Range of Scores	Mean	Adjusted Mean
Opinions About People--Attitude 5					
Control Group					
Pre-Test	4	106.5	26-174	107.36	
Post-Test	12	103.5	47-158	107.56	106.86
Incomplete	1	118.0			
Control Total	17	105.06			
Experimental Group					
Pre-Test	20	99.65	45-160	105.72	
Post-Test	1	121.0	37-176	106.04	106.53
Incomplete	5	95.8			
Experimental Total	26	99.73			
Grand Total	43	101.84	26-179		
Opinions About People--Attitude 6					
Control Group					
Pre-Test	4	80.75	33-133	70.85	
Post-Test	12	65.5	40-110	70.48	69.60
Incomplete	1	66.0			
Control Total	17	69.12			

TABLE 56 (Continued)

	Unused Data		Used Data		
	N	Mean	Range of Scores	Mean	Adjusted Mean
Opinions About People--Attitude 6					
Experimental Group					
Pre-Test	19	63.89	24-125	67.54	
Post-Test	1	58.0	19-120	66.39	67.01
Incomplete	5	59.8			
Experimental Total	25	62.84			
Grand Total	42	65.38			
Opinions About People--Attitude 7					
Control Group					
Pre-Test	4	54.25	23-81	56.84	
Post-Test	12	53.42	28-73	54.62	52.21
Incomplete	1	45.0			
Control Total	17	53.12			
Experimental Group					
Pre-Test	20	56.35	12-77	50.88	
Post-Test	1	62.0	11-79	54.51	56.24
Incomplete	5	54.4			
Experimental Total	26	56.19			
Grand Total	43	54.98			

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