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AN EXPERIMENTAL COMPARISON OF LIVE VERSUS
VIDEO TAPE INSTRUCTION ON CHANGING
ATTITUDES TOWARDS DISABLED PERSONS

CENTRE FOR NEWFOUNDLAND STUDIES

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AN EXPERIMENTAL COMPARISON OF LIVE
VERSUS VIDEO TAPE INSTRUCTION ON
CHANGING ATTITUDES TOWARDS DISABLED PERSONS

by

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ABSTRACT

This study was concerned with finding effective ways of changing the attitudes of teachers and Education students towards disabled persons in Newfoundland and Labrador. Since education was considered by many previous studies to be an important factor in attitude change, the study looked at the effects of a course offered by Memorial University, St. John's, Newfoundland, Education 3230, a survey course providing information about disabled children. Two modes of instruction, live instruction and video tape instruction, were considered to determine if one was more effective in changing attitudes. The original data were collected in 1974; additional data concerning live instruction were collected in 1981 to determine if there was any change in attitude over this time.

There were 474 subjects in this study. There were five groups in the study: Group A, live instruction, on campus, in 1974; Group B, video tape instruction, off campus, in 1974; Group C, control, on campus, in 1974; Group D, live instruction, on campus, in 1981; Group E, control, on campus, in 1981. Students were not assigned individually to groups. There were at least two classes in each group. Half of the classes were used for pre-test data and half were used for post-test data to insure randomization.

The instrument used to measure attitudes was the

Attitudes Towards Disabled Persons Scale, forms A and B.

A pre-test measurement was completed at the beginning of the term and a post-test measurement at the end of the term.

The analysis included a two way ANOVA using the regression approach and a two way ANOVA using equal-sized groups. These showed that there was a difference among the groups in attitude but that no one group showed a significant difference between the pre-test and post-test.

An a posteriori procedure, the Newman-Keuls used to compare group mean scores, confirmed that there was no significant difference at the .05 level between pre and post-test means for any one group. The difference was between the 1974 and 1981 groups. An ANOVA using the regression approach was performed on each of eight demographic variables (occupation, grade level taught, age, sex, previous education course, having a disabled relative, frequency of contact and work experience), comparing the 1974 and 1981 data. The results supported the fact that the difference was between the two time periods. The only demographic variable to have a significant influence on attitude change was having a relative or friend who is disabled.

The conclusion was that although the treatments had some effect, none were significant. The 1981 group had significantly more favorable attitudes than the 1974 groups, possibly because of increased public awareness and opportunity for contact and integration with the physically disabled.

The results indicated that a course which provided information and an opportunity for close personal contact on a social level might be most effective in changing attitudes.

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Deep appreciation goes to my husband, David, and my children for their support and understanding during the time spent in writing this thesis.

Many thanks also go to my parents, Clayton and Betty Lewis, whose caring and positive attitude towards all people has always been a source of inspiration.

Dedication

This book is dedicated to the staff and students of Virginia Waters School. It is hoped that they will meet with positive attitudes in their process of integration.

TABLE OF CONTENTS

	<u>PAGE</u>
ABSTRACT	ii
ACKNOWLEDGEMENTS	v
LIST OF TABLES	viii
 Chapter	
1 INTRODUCTION TO THE STUDY	1
Introduction	1
Purpose of the Study	1
Rationale and Significance	2
Hypothesis and Research Questions	7
Definitions	9
Limitations	10
 II LITERATURE REVIEW	 13
The Study of Attitudes	13
Attitude Change Theory	17
Attitude Measurement	22
The Attitude Towards Disabled Persons Scale	24
Scoring	25
Reliability	26
Fakeability	32
Teacher Attitudes	33
Modes of Instruction	36
Demographic Variables	39
Sex	39
Contact	40
Age	41
Experience	42
Education	43
 III METHODOLOGY	 44
Introduction	44
The Subjects	45
Group A - On Campus, Live Instruction,	
1974	46
Group B - Off Campus, Video Instruction,	
1974	48

	<u>PAGE</u>
Group C - On Campus, Live Instruction, 1981	51
Group D - On Campus, Live Instruction, 1981	51
Group E - On Campus Control, 1981	52
Treatments	52
Group A - On Campus, Live Instruction, 1974	52
Group B - Off Campus, Video Instruction, 1974	54
Group C - On Campus, Live Instruction, 1981	56
Group D - On Campus, Live Instruction, 1981	56
Group E - On Campus Control, 1981	57
Data Collection	58
Occupation	59
Grade Levels	59
Age	59
Sex	60
Contact with a Disabled Person	60
Education 3220	61
Frequency of Contact	61
Work experience with a Person with a Disability	62
Administration Procedure	62
Data Analysis	62
 IV ANALYSIS AND DISCUSSION OF THE DATA	 63
Major Analysis	63
Analysis of Demographic Variables	75
Discussion and Implication	100
 V SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	 108
Summary	108
Conclusions	111
Recommendations	113
 APPENDICES	
Appendix A - Form A	115
Appendix B - Form B	118
Appendix C - Biographical Data Form, 1981	121
 REFERENCE LIST	

LIST OF TABLES

<u>TABLE</u>	<u>PAGE</u>
1. ATDP Reliability Data (test-retest)	27
2. ATDP Reliability Data (Split-half method)	29
3. ATDP Reliability Data (Equivalent Forms)	30
4. ATDP Reliability Data (Stability - equivalence)	31
5. Summary of Subject Groups	47
6. Off Campus Centers matched by Number of subjects	49
7. Assignment to Pre-test and Post-test Data	50
8. Number of Subjects to be Assigned to Each Group	50
9. Descriptive Statistics for the Variable "Groups"	65
10. Analysis of Variance Using the Regression approach	67
11. Group Means in Order from Smallest to Largest	68
12. Newman-Keuls Analysis	69
13. Analysis of variance Using Equal-sized Groups	72
14. Cross-tabulation of Demographic Variables by Pre-Post and Group	76
15. Significance of Chi-Square for each of the Demographic Variables	80
16. Descriptive Statistics for the Variable "Occupation"	81
17. Analysis of Variance on the Variable "Occupation"	82
18. Descriptive Statistics for the Variable "Grade Level"	84

	<u>PAGE</u>
19. Analysis of Variance for the Variable "Grade Level"	85
20. Descriptive Statistics for the Variable "Age"	86
21. Analysis of Variance for the Variable "Age"	87
22. Descriptive Statistics for the Variable "Sex"	88
23. Analysis of Variance for the Variable "Sex"	89
24. Descriptive Statistics for the Variable "Relative Disabled"	91
25. Analysis of Variance for the Variable "Relative Disabled"	92
26. Descriptive Statistics for the Variable "Other Education"	93
27. Analysis of Variance for the Variable "Other Education"	94
28. Descriptive Statistics for the Variable "Contact"	96
29. Analysis of Variance for the Variable "Contact"	97
30. Descriptive Statistics for the Variable "Work Experience"	98
31. Analysis of Variance for the Variable "Work Experience"	99

CHAPTER I

INTRODUCTION TO THE STUDY

Introduction

Recent media and technological advances and new educational techniques have made the general public increasingly aware of the need for all people, regardless of race, sex, religion or ability, to have equal opportunities in education, health care, employment, living conditions and recreation. However, public awareness of such rights is not enough, and neither are "declarations of human rights" by the United Nations or even government legislation. True equality will come only with a change of attitudes towards such groups. This study will assess the process of attitude change towards one group which recently has been the focus of much media, educational, social and legislative attention, namely, persons with disabilities. The research will compare two modes of instruction, in hopes of finding some answers to the question of how attitudes towards disabled persons can be most effectively changed through education.

Purpose of the Study

The purpose of this study was to compare the effects of video and live instruction of an undergraduate university course, "Exceptional Children," in terms of attitude change toward disabled persons. An additional purpose was to

compare the differences in attitude change of persons taking this course in 1974 and those taking it in 1981.

Rationale and Significance

During 1981, the International Year of Disabled Persons, there was a great movement towards making people aware of (1) their attitude towards persons with disabilities, and (2) the role those attitudes play in their acceptance of disabled persons as useful members of society. The 34th session of the United Nations General Assembly resolved that during the year 1981, members should "promote the realization of the rights of disabled persons to participate fully in the social life and development of societies in which they live and their enjoyment of living conditions resulting from social and economic development" (International Rehabilitation Review, January 1980, p. 1).

In Canada, the concern for the rights of the disabled resulted in the establishment of a Special Committee on the Disabled and Handicapped. The Committee's report to the House of Commons, Obstacles (1981), which focused on Canada's two million disabled persons, suggested that a major obstacle to the acceptance of the disabled is:

the attitudes of non-disabled Canadians, who tend to disregard the needs of disabled persons when planning Canada's protection of human and civil rights, health care services, employment opportunities, and various facilities of shopping, education, recreation, communication and transportation. (p. 4)

If the attitudes of non-disabled persons prevent full participation of the disabled in society, it is necessary to look at ways in which these attitudes can be changed.

Most researchers agree that there is a need to change attitudes toward the disabled, but there is little available literature on how this can be done. Kutner (1971) observed that attitude change "is spoken of much, but little has been done to help understand how change may be brought about." Nelson, in her book, Creating Community Acceptance (1978), wrote that:

the first step in creating opportunities for handicapped people to live, work, learn and play in the mainstream of life, is to provide a system for disseminating information and for providing opportunities for the involvement of people at every level in every community to help in creating the necessary changes.
(p. 34)

The difficulty, then, lies in finding an effective way of disseminating information which would create attitude change. A review of the literature suggests that the two major methods of changing attitudes are (1) close personal contact with disabled persons and (2) provision of information about disabled persons through various educational channels (Evans, 1976). "Attitude changes depend very generally on the receipt of new information that in some way or another is relevant to the attitude object from the point of view of the attitude holder" (Newcomb, Turner, & Converse, 1965, p. 82).

The theoretical basis for using education as a method of attitude change comes from Festinger's Dissonance Theory

(1957). This model is:

concerned with the relationship among 'cognitive elements' and the consequences when elements are inconsistent with each other. Cognitive elements are defined about oneself, about knowledge or opinions or beliefs about oneself, about one's surroundings in the environment.

(Kiesler, Collins, & Miller, 1969, p. 191)

The Dissonance Theory has two basic hypotheses:

(1) The existence of dissonance creates psychological tension and will motivate to reduce dissonance and achieve consonance. (2) When dissonance exists, not only does the person attempt to reduce it, but he will actively attempt to avoid situations and information which would increase the dissonance.

(Kiesler, Collins, & Miller, 1969, p. 194)

Since "it is possible to reduce the total magnitude of dissonance by adding new cognitive elements" (Festinger, 1957, p. 21), this study looked at changing attitudes through a university education course, "Exceptional Children" (3230), which was offered live, on-campus, and by video tape, off-campus, through the Faculty of Education in 1973-74 at Memorial University in St. John's, Newfoundland. Additional data was later collected from students on campus in 1981. As well, there were on-campus control groups in both data collections. This study investigated whether the information provided in this course, "Exceptional Children", was inconsistent with the attitudes the subjects already had about disabled persons, under the premise that such dissonance would create attitude change.

The significance of looking at attitude change,

particularly with education students, was reflected in a study of teachers' attitudes toward disabled persons by Conine (1969). He suggested that:

unfavourable attitudes of the public towards disabled people may, at least in part, reflect the reactions of prejudiced school teachers. If the unfavourable attitudes of the public are to be changed, then surely favourable attitudes must be fostered among teachers who influence the value system of future generations. (Conine, 1969, p. 280)

One of the recommendations of the Special Committee on the Disabled in Canada was "that provincial ministries of education be encouraged to develop for use in teacher training programs, course materials and teaching aids about physical and mental disabilities" (Obstacles, p. 104).

The province of Newfoundland and Labrador has a unique problem in the training of teachers. Here one is:

always conscious of the influence of geography both in the actual formation of the settlements, as well as in the way of life that is followed subsequently. ... (There is) a pattern of settlement that often, as in the case of the South Coast, defies any rational land communications network being subsequently developed. (Whitaker, 1970, p. 62)

The fact that the majority of communities are small and scattered and the only university, Memorial, is located on the east coast of the province, makes it difficult for many teachers to attend classes on a part-time basis. An attempt to overcome this problem was made by the university by offering some video tape courses in various communities throughout the province. This study investigated the effects

of such a video tape course on attitude change toward the disabled and compared the effects of the same course taught live, on campus, in a more traditional sense.

Attitudes in Newfoundland are changing and attempts are being made to integrate persons with disabilities into society, based on the normalization principle, "a risk process that involves the elimination of the 'sanitized life' and substituting for it the possibility of failure as well as the possibility of greater rewards" (Parks, 1975, p. 108). Government legislation has moved forward in two major areas: (1) every child has the right to an education and (2) it is illegal to discriminate against physically disabled persons for purposes of accommodations or employment. In the Department of Social Services, attempts are being made to provide support services which will keep people with disabilities in the community. The Minister of the Newfoundland Department of Social Services, Tom Hickey, said that:

government believes that individuals, who in the past because of age, physical or mental disability, may have been admitted or in some cases committed to institutions prematurely or unnecessarily, should be assisted to maintain an independent life style in their own homes for as long as possible ... It will be necessary to engage with nongovernment and volunteer sectors in developing and organizing community based services. (Daily News, July 28, 1980)

It seems, then, that integration of disabled persons in our society is a necessary and natural goal. If attitude is the key to acceptance and prevailing attitudes are not

appropriate, it is essential that effective methods of changing attitudes be found. This study looked at two possible modes of instruction, live and video tape, to see if they were effective in attitude change.

Hypotheses and Research Questions

Hypotheses

1. There will be no significant difference in attitude change between those completing the course on Exceptional Children (3230) through the traditional medium of live instruction on campus and those taking 3230 off campus by video tape in 1974.
2. There will be no significant difference in attitude change between those completing the course 3230 through live instruction in 1974 and those completing the course by live instruction in 1981.
3. There will be no significant difference in attitude change between those completing the course 3230 through live instruction in 1974 and those in the control group in 1974.
4. There will be no significant difference in attitude change between those completing the course 3230 through live instruction in 1981 and those in the control group in 1981.

5. There will be no significant difference in attitude change between those completing the course 3230 through video tape and those who are in the control group in 1974.
6. There will be no significant difference in attitude between subjects in 1974 and those in 1981.

Research Questions

1. Is there a significant difference in attitude among teachers, counsellors, administrators and students?
2. Is there a significant difference in attitude among educators who work with students at different grade levels?
3. Is there a significant difference in attitude between persons who are over twenty-five years of age and those who are under twenty-five years of age?
4. Is there a significant difference in attitude between males and females?
5. Is there a significant difference in attitude between people who have a relative or a friend who is disabled and those who do not?
6. Is there a significant difference in attitude between those who took the course Education 3220 (A Special Education course which studies mental disabilities) and those who did not?
7. Among the subjects who participated in the study in 1981,

is there a significant difference in attitude which correlates with the frequency of contact?

8. Among the subjects who participated in the study in 1981, is there a significant difference in attitude between students who have work experience with disabled persons and those who do not?

Definitions

Disabled Person - "Any person unable to ensure by himself or herself wholly or partly the necessities of a normal individual and/or social life as the result of a deficiency, either congenital or not, in his or her physical or mental capacities" (Disabled Persons in Canada, 1980, p. 3).

Attitude Change - This is a change in attitude towards disabled persons as measured by a comparison of pre-test and post-test scores using form A and form B of the Attitude Towards Disabled Persons Scale (Yuker, Block & Youngg, 1962).

Dissonance - This is an inconsistency between what a person knows or believes and what he does.

Exceptional Children's Course - Education 3230 as offered as Memorial University, St. John's, Newfoundland.

"Education 3230 is a course concentrating on the

physical, social, and emotional differences of exceptional children" (Karagianis & Klas, 1973, p. 1).

a course designed to assist prospective teachers in acquiring competence in understanding and guiding physical, intellectual, emotional and social development and in understanding the teaching-learning process through application of principles of learning, motivation, readiness, transfer, and individual differences. (University Calendar 1982, p. 272)

Video Tape Course Format - refer to Chapter III.

Live Course Format - refer to Chapter III.

Limitations

1. This study was done on university students. Arholter (1962) suggested that college students "by virtue of their age and social environment are more liberal and less prejudiced than many subjects from societal groups" (p. 206). This would suggest that the study is not generalizable to other groups. However, the off-campus students were generally working professionals (mostly teachers) living in their home community. Most of these were older and married, and thus more typical of the general population than the usual university student. The results of this part of the study may be more generalizable to the population as a whole.
2. This study was done in Newfoundand where there is little immigration and most of the population is rural.

Even though the proportion of urban dwellers is constantly increasing, there is still a high number of such people who themselves originate in the rural areas, and who may well be presumed to have brought with them into the expanding towns something of a rural ethic, and who perhaps also retain rural attitudes to change. (Whitaker, 1980, p. 63)

Rural populations typically resist change; therefore the treatment (Education 3230) may not be as it would be elsewhere. The fact that the off-campus group was an older working group and some of the on-campus group were young students with little or no working experience may affect the comparison of the two groups.

4. In the data collected, individuals were not asked to identify themselves. Therefore, it was possible to measure only overall change as a group.
5. Among the groups compared on-campus, some students were in day classes and some were in night classes. Some of the students in the night class were part-time, older students. This may have caused some difficulties in using one group for a pre-test and another group for a post-test.
6. Some researchers have questioned what the Attitude Towards Disabled Persons Scale (ATDP) actually measures. That is, does it measure 'degree of acceptance' or does it measure how disabled people differ. There is also need for further research in the stability-equivalence of the instrument.

There are always difficulties in getting groups of people in social sciences research which are considered equivalent. There is also difficulty in getting an instrument which is reliable in measuring attitudes, since this is such an abstract concept. This writer feels that despite the limitations of the data available, it will be possible to make some interesting and useful observations concerning attitudes and attitude change among educators in Newfoundland towards disabled persons.

CHAPTER II

LITERATURE REVIEW

The Study of Attitudes

Attitudes have been the subject of much research, and continue to be a controversial topic because of the difficulty of precisely defining what an attitude really is.

The concept of attitude, like many abstract concepts is a creation--a construct. As such it is a tool and serves the human need to see order and consistency in what people say, think and do, so that given certain behaviors, predictions can be made about future behaviors. (Henerson, Morris, & FitzGibbon, 1978, p. 11)

In implementing research in the field of social psychology many people have attempted to define the construct "attitude." Shaw and Wright, after reviewing a variety of definitions, described attitudes as "a relatively, enduring system of evaluative, affective reactions based upon and reflecting the evaluative concepts or beliefs, which have been learned about the characteristics of a social object or class of social objects" (Shaw & Wright, 1967, p. 3). Triandis added to this definition. He included behavioral aspects, along with the cognitive and affective components. He suggested that people have attitudes to:

- (a) help them understand the world around them, by organizing and simplifying a very complex input from their environment.

- (b) protect their self-esteem, by making it possible for them to avoid unpleasant truths about themselves.
- (c) help them adjust in a complex world, by making it more likely that they will react so as to maximize their rewards from the environment.
- (d) allow them to express their fundamental values.
(Triandis, 1971, p. 4)

From desire to cope by simplification comes the process of categorization and the tendency to stereotype. For example, it is a common tendency to group all disabled people together and assume that if a person has a physical disability, he/she also has a mental disability. Arnold Rose said that:

When stereotypes exist, an individual is judged, not on the basis of his own characteristics, but on the basis of exaggerated and distorted beliefs regarding what are thought to be characteristics of his group. All members of the group are falsely assumed to be alike, exceptions being ignored or their existence denied. (1951, p. 11)

Stereotyping is part of a particular attitude known as prejudice. Prejudice can occur at various levels of relationship with others. According to Triandis:

Marriage defines the most intimate, friendship the next, work collaboration another and so on. Some people show their prejudice only at the core, others show it at both the marital and friendship levels, and others at all levels. (Triandis, 1971, p. 116)

Gordon Allport, another researcher who reviewed definitions of attitude, found that none of them were comprehensive. He wrote that:

An attitude is a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related.
(Allport, 1954, p. 4)

Wagner and Sherwood (1969) went one step further, seeing attitude not only as an influence on responses but also as a predictor of behavior. "Assuming that man acts according to his predispositions, there is no better way to predict his response than to know his attitude towards it" (p. 2).

Yuker, one of the authors of the scale used in this study, maintains that:

An attitude can be defined as one type of predisposition toward behavior... by finding out what a person's attitudes are, we can gain information that will help us, both to understand and to predict that person's behavior. However, our predictions and understandings will be far from perfect, since behavior is influenced by motives and by perceptions as well as by our attitudes. (1965, p. 15)

This study is concerned with the attitudes teachers have towards exceptional people and how that attitude might be influenced.

Newcomb, Turner, and Converse suggested that "positive attitudes predispose the person to some kind of approach toward the object; negative attitudes predispose to some kind of avoidance" (1965, p. 48). Therefore, if integration of disabled persons in society is a goal, positive attitudes must be nurtured.

The self develops largely in response to feedback from the environment. The emergence of the self for someone with a disability is further complicated by the demands of social and psychological realities which are different from those of someone who is non-disabled. (Westwood, Vargo & Goetz, 1979, p. 367)

Negative attitudes towards the disabled person have a variety of sources. One of the major sources, according to Bowes (1978) and Nelson (1978), is the church. One of the teachings of the church is to help the less fortunate. "Helping handicapped people is the Christian thing to do and I will do it because I am a good person, but "they" after all are inferior and therefore objects of pity" (Nelson, 1978, p. 19). Another source is the norm of our society to stress the importance of health and normalcy. For example, much responsibility is placed on today's pregnant woman to take good care of herself and avoid all possible danger to her unborn child. Her first question, on the birth of her child, is "Is my baby all right?" There is insufficient education and support given to the parents of a disabled child.

Seeing a physically whole child brings an instantaneous feeling of relief. A handicapped child evokes a sense of guilt... (This guilt creates a situation whereby) disabled children tend to be insulated from the rigors of everyday life and to lead to a constricted social life which limits normal interaction with peers. Educational segregation maintains the pattern of isolation. (Gellman, 1959, p. 5)

This statement was made 25 years ago and yet the same constrictions and segregation still exist. In a news release

local, Social Services Minister, Tom Hickey, said that:

Monday (August 9, 1982) was an important day in the ministry of social services, as the government acknowledges the right of the mentally retarded to live fully within the community becoming as independent as possible ... Also as part of the plan, whenever possible, the children will be integrated into regular classrooms. (The Evening Telegram, Tuesday, August 10, 1982, p. 3)

A review of the literature (Comer & Piliavin, 1975; Croft et al., 1969; Dailey & Halpin, 1981; Donaldson, 1980; Drake et al., 1977; Larrivee, 1981) suggests that negative attitudes toward the disabled exist and that there is need for further research to identify effective ways of changing those attitudes. Evans (1976) suggested that the reason that significant findings in attitude change research are lacking is because of "the fact that researchers have generally disregarded established change theories in their research attempt" (p. 513). The next section will review some attitude change theory which may be applicable to this study.

Attitude Change Theory

Attitude change can occur by first changing the cognitive component (for example, with new information), the affective component (for example, by pleasant or unpleasant experiences in the presence of the attitude object) or the behavioral component (for example, by norm change, or the legal imposition of behavioral changes) ... when one of the components has changed, the others also are likely to change. (Triandis, 1971, p. 145)

There appear to be basically four approaches to attitude change: " (1) learning theory (analyzing stimulus and response) (2) perceptual theory (redefining the object of the attitude (3) functional approach (changing attitude as needs change) and (4) consistency theory" (Wagner & Sherwood, 1969).

Consistency theory, in particular, Festinger's Theory of Cognitive Dissonance, appears to be most appropriate to this study.

The theory has proved to be particularly useful in areas of social psychological concern, such as attitude change, social influence and conformity ... The basic assumption underlying dissonance theory is that an individual strives for consistency among his opinions, attitudes and values. Festinger replaced the word consistency with the more neutral term consonance. Similarly, inconsistency was replaced with a term having a less logical connotation--dissonance.
(Sherwood et al, 1969, p. 57)

The theory suggests that dissonance is created when new information is received which does not fit with an attitude or behavior which the person already has. One example that Festinger used is that dissonance is created in a person who smokes and has information that smoking causes cancer. If the attitude is important to the person, he will seek ways to reduce the dissonance. The theory is important to this study, in that it is assumed that if a person has a negative attitude towards disabled people, dissonance will be created when he receives new information (such as might come from the education course 3230). The person would hopefully try

to reduce this dissonance by developing a more positive attitude toward disabled persons. How effective the course material might be in inducing change would be determined by such factors as the person's resistance to change, the nature of the material and its medium of presentation. There are two factors in resistance:

(1) the number of presently irrelevant cognitions with which the changed cognition will become dissonant, thereby creating new dissonance and by (2) the importance of these newly relevant cognitions in terms of the person's systems of values. (Sherwood et al., 1969, p. 59)

Brehm and Cohen have:

demonstrated the predictive value of the theory in these situations: (1) the period after a free choice among attractive alternatives (2) instances of forced compliance (3) situations in which a person is exposed to information inconsistent with his attitudes. (Sherwood et al., 1969, p. 61)

It appears that the theory of cognitive dissonance is popular in attitude change research. Wagner and Sherwood reported that "this theory has produced more research from 1957 to the present than any other theory in social psychology" (1969, p. 63). Davis and Jones (1960) supported this statement: "Among the problem areas to which Festinger's theory, cognitive dissonance, may be applied, none has been so intensively explored in recent experiments as the area of attitude change" (p. 402).

Like all theories, however, cognitive dissonance also has its critics. Chapanis and Chapanis (1964) viewed the

theory (as) engagingly simple.

Its magic ... seems to lie in the ease with which imponderably complex social situations are reduced to simple statements, most often just two such statements. This having been done, a simple inspection for rationale consistency is enough to predict whether or not change will occur. (p. 2)

Brehm and Cohen made this criticism:

It is theoretically possible to arouse dissonance in regard to some information relevant to a given attitude while failing to arouse dissonance in regard to other information that is consistent with the same attitude. (1962, p. 14)

This study is concerned with attitude change in two different time periods. The initial data were collected in 1974. Additional data were collected in 1981. There could be a difference in attitude change because of differing amounts of awareness in society in general about disabled persons. In a study of attitudes done at Princeton (Katz & Braly, 1933) and repeated twenty years later (Gilbert, 1951), it was found that similar stereotypes tended to exist but were weaker in the second study.

The fading may be related to a disappearance of stereotyping from the entertainment media, a greater degree of sophistication and a greater knowledge of other cultures by American college students of the 1950's as opposed to the 1930's. (Triandis, 1971, p. 105)

In the present study a number of events occurred which may have increased the information level of the group taking the "Exceptional Children" course in 1981, as opposed to the 1974 group. Rehabilitation International had as its

objectives for the decade of 1970 to 1980:

(1) To increase public awareness of the problems of disability (2) To urge governments to give a higher priority to programs for the development of rehabilitation and related services (3) To assure the international sharing of information, knowledge and skills for these purposes. (International Rehabilitation Review, Jan., 1980).

The highlight of this decade was to have 1981 proclaimed by the United Nations as International Year of Disabled Persons. During this year many advocacy groups (e.g., Cerebral Palsy Association, Canadian Paraplegic Association, Canadian Association for the Mentally Retarded) promoted awareness programs for the public. The governments, both federal and provincial, provided grants for projects which employed disabled persons. Groups such as Rotary Club, Lions Club, and Girl Guides became involved in projects which encouraged integration of disabled persons. Terry Fox may have done more than any other individual in his "Marathon of Hope" to inspire the disabled and make Canadians aware that disabled persons have an important role in society.

Thus the group in 1981 may have already had positive attitudes about the disabled before they started the course, leaving less room for significant change in their pre- and posttest scores. LeUnes, Christensen, and Wilkerson (1975) had an explanation for this phenomenon:

Subjects with initially more negative attitudes were affected more positively than were subjects with the initially more positive attitudes. This is very probably due to the fact that the initial negative

attitude group had more room to change in a positive direction, since some members of the positive group may have experienced a ceiling effect. (p. 735)

Analyzing attitude change requires applying a method of measuring attitudes.

Attitude Measurement

Attitude is an abstract construct; thus, the social sciences cannot give a clear cut, irrefutable measure of attitude. Finding a reliable measure has been the subject of much research. Shaw and Wright (1967) suggested that:

The typical attitude scale measures the acceptance of evaluative statements about the attitude object... The attitude toward the object is inferred from the statements endorsed by the subject based upon the consensual evaluation of the nature of the characteristics attributed to the objects by the acceptance of these statements. (p. 14)

Much of the early work in attitude measurement was done by such men as Bogardus, Likert and Thurstone. It was their development of techniques of scaling that laid the groundwork for today's standardized measurement of attitude instruments. Thurstone maintained that "the first restriction on the problem of measuring an attitude variable is to specify an attitude variable and to limit the measurement to that" (p. 130). For instance, in the scale used in this study, the authors had to determine what constitutes a positive attitude toward disabled persons. Likert's scale

consists of five response categories to each statement, indicating the degree of agreement:

strongly approve, approve, undecided, disapprove, strongly disapprove. On an a priori basis, the investigation determines whether a disapproval or an approval response indicates a large amount of the attitude in question ... His scale score then is simply the sum of the scores he received on each item. (Kiesler, Collins and Miller, 1969, p. 13)

The Attitude Toward Disabled Persons Scale used in this study is not actually a Likert scale, because it has no neutral response. However, it has similar response categories and the same item format. The ATDP will be discussed further in the next section.

A self-report measure was suitable for this study because:

self-report procedures represent the most direct type of attitude assessment and should probably be employed unless you have reason to believe that the people whose attitudes you are investigating are unable or unwilling to provide the necessary information.
(Henerson et al., 1978, p. 21)

This method was also chosen to facilitate collection of data from a large group of people.

The pre-test-treatment-post-test design is a very popular method of measuring attitude change. It must be kept in mind, however, that:

the process of measurement per se may change the attitude under investigation... in an experiment on the effect of persuasive communication on attitude change the initial pre-test might act as a stimulus to modify opinions or resist influence even without the persuasive message. (Nosanchuck et al., 1972, p. 377)

To do research, one must choose the best possible scale to measure as closely as possible what one seeks to measure. Reliability and validity are major concerns. A thought to keep in mind, no matter how good the scale, is that "Attitude scales should be regarded as the roughest approximations of the way in which attitudes actually exist in the mental life of individuals" (Allport, p. 12 in Fishbein, 1967).

The Attitude Towards Disabled Persons Scale

The Attitude Towards Disabled Persons Scale was developed by Yuker, Block and Youngg of the Human Resources Center in New York. Its authors felt there was a need for an "objective and reliable instrument to measure attitudes toward the disabled as a group... rather than attitudes toward specific disability groups" (Yuker, Block, & Youngg, 1970, p. 18). It is a self-report scale which measures verbalized attitudes. The instrument is designed in such a way that it measures attitudes of both disabled and non-disabled persons.

The original scale, Form O, had 20 items. The revised versions, Forms A and E, have 30 items each and are equivalent forms. Items selected for use on the scale were analysed by techniques developed by Edwards (1957) and shown to discriminate at at least the .05 level of confidence.

The scale is a Likert type scale, with no neutral point. The scale, which may be administered either individually or

in a group, offers six responses from which the subject may choose, to indicate the extent of his disagreement or agreement with each of the thirty statements. The response choices are as follows:

- +3 I agree very much
- +2 I agree pretty much
- +1 I agree a little
- 1 I disagree a little
- 2 I disagree pretty much
- 3 I disagree very much

Scoring

In scoring the ATDP the first step is to change the signs of the items with positive wording. By definition, a positive item is one which indicates that disabled persons are not "different" from non-disabled persons. Once the signs of the positive items have been changed, the algebraic sum of all the item scores is obtained. The sign of the sum is then reversed, from negative to positive or positive to negative. The total score obtained in this fashion can range from -60 to +60 on the twenty-item scale, Form O; and from -90 to +90 on the thirty item form A and B. To eliminate negative values a constant is then added to make all of the scores positive. This constant is 60 for the twenty item scale and 90 for the thirty item scale. The resulting score range is from 0 to 120 (Form O) or from 0 to 180 (Forms A and B), with a high score reflecting positive attitudes. If more than 10 percent of the items are left blank the test is considered not scorable. If 10 percent or fewer items are omitted, the completed items are scored as usual with the customary constant added to eliminate negative values. This is equivalent to assigning a neutral value to the omitted items. (Yuker, Block, & Youngg, 1970, p. 25)

A high score would reflect a positive attitude towards

disabled persons; a low score would indicate that the respondent feels that disabled persons are different or even inferior to nondisabled persons.

Himes (1951) suggested that:

Social behavior becomes a response to the total person who is identified and classified by reference to the readily observed physical disability. Reaction to the physically disabled person thus appears reasonably comparable with the recognized disability which serves as a key or clue to this total personality. (p. 11)

This definition fits well with the positive-negative type of responses on the ATDP scale.

Reliability

When analysing the usefulness of an instrument there are usually three types of reliability to be considered: stability, equivalence and stability-equivalence.

Stability is sometimes referred to as test-retest reliability. The same form is used over a period of time. A table showing the correlations of each form, as well as the standard deviations and the standard errors of the mean can be found on page 27 (Table 1). It appears that the correlations are high enough for the scale to be considered to be a reliable instrument to measure the attitudes of groups of people toward persons with disabilities. This is particularly important to this study as it is concerned with the attitude change of groups of people rather than individuals.

Equivalence looks at how representative the items chosen

TABLE 1

ATDP Reliability Data

(Test-retest)

Form	N	Standard Deviation	r	SEM
0	37	13.20	+ .76	6.47
A	84	21.42	+ .78	10.07
B	81	22.60	+ .83	9.31

(Yuker, Block & Youngg, 1970, p. 32)

for the test are of possible items that could have been chosen. Equivalence can be measured in two ways. One way is to split the number of items on one test, score each half separately, and determine the correlation using the Spearman-Brown Prophecy formula. These reliability coefficients range from +.75 to +.85 for Form 0 and from +.73 to +.89 for Form A and from +.72 to +.87 for Form B (see Table 2). The test authors consider these coefficients to be comparable to other accepted instruments which measure attitudes.

The second way to look at equivalence is to compare two forms of the same test. This was important to this study because Forms A and B were used and considered to be equivalent on the basis of data found in Table 3. Forms A and B are considered to have a correlation of .72 to .83 according to studies done on a non-disabled population in 1962 by the Human Resources Center.

The third type of reliability, stability-equivalence, uses one form of the test at one time and another form of the test on a later occasion. The data in Table 4 was collected on a group of nondisabled college students. The median coefficient was +.74. As with this study, Form A was used as a pre-test and Form B as a post-test. University students were also used in the study. The stability-equivalence of the ATDP appears to be sufficient for the purposes of this study.

Table 2
 ATDP Reliability Data
 (Split-half method)

Reference	ATDP Form	H	Disabled/ Non-Disabled	K	P
Yuker, Block, & Campbell, 1960	0	248	D	.76	.01
	0	170	ND	.78	.01
Siller & Chipman, 1964b	0	245	ND	.75	.01
	0	553	ND	.83	.01
	0	75	ND	.85	.01
	0	50	RD	.84	.01
Human Resources, 1962	A	72	RD	.73	.01
	A	53	ND	.77	.01
	A	53	RD	.74	.01
Human Resources, 1964	A	57	ND	.89	.01
	A	296	D	.82	.01
	A	110	ND	.84	.01
Human Resources, 1962	A	72	ND	.78	.01
	B	50	RD	.79	.01
	B	42	RD	.72	.01
America Fore, 1962	B	57	ND	.84	.01
	B	143	RD	.82	.01
	B	194	D	.87	.01
Human Resources, 1964	B	139	ND	.81	.01
	B	50	RD	.80	.01

Yuker, Block & Young, 1970, p. 121

Table 3

ATDP Reliability Data
(Equivalent Forms)

<u>Reference</u>	<u>ATDP Forms</u>	<u>N</u>	<u>Disabled/ Non-Disabled</u>	<u>r</u>	<u>P</u>
Human Resources, 1962	0-A	132	ND	.69	.01
	0-A	72	ND	.67	.01
Human Resources, 1964	0-A	234	D	.61	.01
Human Resources, 1962	0-B	81	ND	.57	.01
	0-B	40	ND	.76	.01
	0-B	40	ND	.77	.01
Human Resources, 1964	0-B	157	D	.60	.01
Human Resources, 1962	A-B	84	ND	.72	.01
	A-B	57	ND	.83	.01
Human Resources, 1964	A-B	154	D	.60	.01

(Yuker, Block, and Young, 1970, p. 122)

Table 4

ATDP Reliability Data
(Stability-equivalence)

<u>Reference</u>	<u>ATDP Forms</u>	<u>N</u>	<u>Disabled/ Non-disabled</u>	<u>Time Interval</u>	<u>r</u>	<u>p</u>
Human Resources, 1966	0-A	38	ND	2 weeks	.62	.01
Human Resources, 1962	0-B	81	ND	6 weeks	.83	.01
Human Resources, 1962	A-B	58	ND	6 weeks	.41	.01
	A-B	40	ND	5 months	.73	.01
	A-B	31	ND	5 months	.76	.01

(Yuker, Block & Youngg, 1970, p. 123)

Fakeability

Another issue of concern, particularly on an attitude test, is the likelihood that a person might try to respond in the way he feels he is expected to, in order to make a good impression. Yuker, Block, and Young (1960) conducted a study in which a group of students completed the scale under standardized conditions and then later completed the scale being asked to try and make a good impression. No significant difference was found in these scores.

There are, of course, critics of the ATDP scale. Bell (1962) felt that it provided "more of a measure of the attitude, that the physically disabled differ in certain ways from the general population, than that the scale measures 'degree of acceptance' of the handicapped" (p. 185). Siller and Chipman made the criticism that the "single score given to the scale and labelled 'acceptance of the disabled' does not reflect a balanced weighting of the constituent elements of the scale" (1964, p. 838). Another possible criticism of the scale is that some items appear to presume that all people are the same, not allowing for the uniqueness of the individual, or the conditions which prevail in society. For example, statement 18 on form A, "There are more misfits among disabled persons than among non-disabled persons" may be a true statement because overprotection within the family or life within an institution does not allow a disabled person to grow in socially accepted ways. The well-informed person could answer "strongly agree" to

this statement, indicating a negative attitude, when in fact the person may have a good attitude, but recognize a reality of life, as unfair as it might be.

Nevertheless, the ATDP Scale has been widely used in research (Conine, 1969; Donaldson, 1976; Furlong, 1979; Gosse & Sheppard, 1978; Vargo, Vargo & Semple, 1979) and appears to be an adequate measurement for the purpose of this study.

The ATDP, the most widely used scale in the field of measurement of attitudes towards the disabled, has been found to be a reliable instrument ($r = .66$ to $.89$) and studies quoted earlier support the scale as valid, based on construct validation. (Evans, 1976, p. 575)

Teacher Attitudes

When discussing community acceptance of the disabled, one could be concerned about the attitudes of everyone. However, it is too broad an aim to study the attitudes of everyone. One must look first at an effective way of studying attitudes among those who would have significant contact with disabled persons.

The negative attitudes found in the general public are also found among individuals who work in the helping professions... the inability to function in a major life area is intensified if the very people who are helping improve the disabled person's ability have the ultimate expectation that the person being helped cannot really function equally with the normal person. (Nelson, 1978, p. 15)

Among the helping professions, teachers can have a major influence on both the disabled person and the attitudes of his peers toward the disabled.

Haring (1957) indicated that since the attitudes and understanding teachers have about exceptional children are influential in determining the adjustment of the child, it would be significant to learn what factors lie behind the development of positive attitudes toward the exceptional child. (Coombs & Harper, 1967, p. 399)

Larrivee(1981) suggested that "teacher attitude is influenced by many factors, such as information level, knowledge attainment, specific skill acquisition, and contact and experience with the exceptional child" (p. 34). A number of studies (Baker et al., 1981; Conine, 1969; Donaldson, 1977; Larrivee, 1981; Wechsler, Suarez & McFadden, 1981) support the fact that one or more of such variables influence teachers' or future teachers' attitudes.

In the United States, Bill P.L. 94-142 promoted regular classroom placement for handicapped persons. One of the major concerns for this type of integration was that:

while education in the least restrictive environment may be imposed by binding laws, the manner in which the regular classroom teacher responds to the special child's needs may be a far more potent variable in ultimately determining the success of mainstreaming than any administrative or curriculum strategy.
(Larrivee, 1981, p. 34)

Mainstreaming the exceptional child is a concern in Newfoundland as well. In December, 1979, The School Act was amended to allow every child the right to an education within

regular schools. It said that school boards:

shall organize the means of instructing children who for any physical or mental cause require special classes, either by the establishment of special classes in its schools or by making arrangements with another School Board or with any educational body or authority within Canada for the education of such children. (Act to Amend the Schools Act, Dec. 14/79, Section 12/A:1)

Currently students from segregated schools for the mentally or physically disabled (run by private groups such as the Canadian Association for the Mentally Retarded or the Cerebral Palsy Association) are being gradually integrated, either individually or in class groups, into regular schools; the aim is to phase out all such special schools.

Successful integration will depend greatly on the attitudes of teachers and students in these regular schools. It is, therefore, important to know, now, what methods are successful in training teachers to have positive attitudes towards disabled persons. Donaldson (1980) says that:

Until disabled persons are seen as individuals who, like all people, have differing skills, interests, and personality traits, the ultimate outcome of legislation mandating integration and equal opportunity will be unpredictable--handicapped persons will continue to bear the consequences of unfavourable expectations and fear on the part of persons who control their life opportunities. (p. 504)

Furthermore, the movement of students from special classes within a school to participation in regular classroom activities also depends on positive teacher attitudes.

If regular classroom teachers and administrators became informed about special education goals, they would be more willing to accept the handicapped in the regular class ... many of the children presently confined to self-contained special education classes would not be there if the attitude of regular classroom teachers and administrators could be altered. (Brooks & Brantford, 1971, p. 260)

Searching for an effective method of changing the attitudes of teachers towards disabled persons appears to be a worthwhile topic of investigation.

Thus a goal of training for all teachers is, in part, to break down the negative attitudes associated with exceptionalality, supplanting such a subjective orientation based on prior assumptions, with an orientation towards objective observation of a child's competencies. (Abroms & Kodera, 1979, p. 25)

The question is, then, what are effective methods of instituting change?

Modes of Instruction

Previous studies have looked at a variety of methods of changing attitudes toward disabled persons. They include 1) classroom instruction, 2) videotape presentations, 3) audio presentations, 4) disability simulation experiments, 5) disabled persons as presenters, and 6) structured contact experiences with disabled persons. Most methods appear to have some degree of success. However, studies must be carefully analyzed to determine what factors actually influenced the results. "One very important lesson we can

learn is that all media can instruct, and that learners can learn from virtually all media. The concerns, then, it would seem, are managerial and economic" (Salomon, 1978, p. 37).

Triandis has thoroughly researched the process of attitude change. He suggested that "We must consider the effect of who says what, how, to whom with what effect" (1971, p. 145).

The two modes of instruction which are most relevant to this study are live course instruction and video course instruction. There is some discrepancy as to whether both are equally successful means of changing attitudes.

Halloran (1967) said that "a suggestion carried by mass media plus face to face reinforcement is more likely to be accepted than a suggestion carried by either of these alone, other things being equal" (p. 57).

Salomon (1978) maintained that live instruction is more effective. Concerning educational T.V. versus live instruction, "it is more plausible to hypothesize that it is the situation of being talked to without being able to interact that affects the students' motivation to learn from the medium" (p. 40).

Croft, et al. (1969) were more specific about the reasons they felt that live instruction was more effective.

If more cues are available, more information can be gained. Information in this case includes attitudes and impressions as well as facts ... a video presentation has fewer cues available than a live presentation, including such cues as: fineness of facial features, distinguishable color, two dimensionality, quality of voice, etc." (p. 319).

In addition to the cues that are available, it seems that there would be more opportunity for interaction in a live instruction group. It seems likely that change would be more likely to occur in a situation where there is a possibility of immediate response and feedback.

Some research has found that videotape instruction is quite effective in changing attitudes (Baker et al., 1981; Donaldson, 1976; Sedlick, 1975). Martin (1980) did a study comparing students' attitudes and concluded that "students respond favourably to a video tapepresentation and that it is a viable instruction medium... there were no significant differences in the attitude of students towards live or video tape instruction" (p. 39).

Whichever form of instruction is chosen, "instructors can change the attitudes of their students with a carefully planned and sequenced instructional program using structured themes and positive reinforcement" (Lazar et al., 1976, p. 68).

Another concern is the credibility of the instructor, which "affects both the evaluation of the message and the amount of attitude change. The communicator must be perceived as being an expert, trustworthy and reliable" (Halloran, 1967, p. 61).

Donaldson (1980) reviewed a number of studies on attitudes toward the disabled and she concluded that:

studies of the effect of course instruction on attitude provide little insight into the dynamics of attitude

change and/or specific suggestions for practice because of the nonspecificity of informational contact and/or possible confounding of information with direct contact with or media exposure to disabled persons, analysis of the nature of prejudice or instructor personality and attitudes. (Donaldson, 1980, p. 508)

Hopefully this study will provide some help in sorting out these variables.

If video instruction is a viable medium for changing attitudes, there is great potential for its use in education, particularly in a place with so many small communities, as Newfoundland and Labrador.

Demographic Variables

There are a number of variables within the subjects themselves that may affect attitude change. Previous research has looked at one or more of the following variables: (1) sex (2) contact with the disabled (3) age (4) experience and (5) educational level. Higgs (1975) suggests that attitudes become more positive as the result of:

advancing age, related experience and changes in an individual's level of information ... a surface inspection of the data indicates that the general public is still suffering from lack of exposure and quality information about disabled persons. (p. 497)

Sex

The authors of the ATDP scale reviewed a number of studies (Bell, 1962; Chesler, 1965; Fischbein, 1964; Knittel,

1963; Magilone, 1965; Siller & Chipman, 1965) and found that:

in the majority of these studies, significant differences between males and females were reported with females scoring significantly higher (more accepting) on ATDP than males in all cases where statistical significance was found. (Yuker, Block, & Young, 1970, p. 48)

Baker et al. (1981) reported that the differences were more of a function of personality differences between males and females: "Girls apparently have greater empathy and optimism toward the handicapped than boys. This supports the conventional wisdom that females, on the average, are more person-centered than males" (p. 73).

This explanation seems difficult to accept since it views both males and females with a very stereotypic attitude. Donaldson and Martinson (1977) found in their study that sex differences were not significant. They suggested that differences in past studies which showed males to have a more negative attitude than females was probably a result of a lack of contact and information on the part of males. It appeared this was an area for further research.

Contact

Contact is a difficult variable to analyze because of the variety of definitions of what constitutes contact. It can vary from knowing someone in your neighbourhood to a close personal relationship (family or friendship). Several studies (Donaldson & Martin, 1977; Evans, 1976; Sadlick &

Penta, 1975) showed that even brief exposure to disabled persons produced a positive change.

Donaldson (1980), on the other hand, suggested that contact could even have a negative effect. "Nonstructured experiences have the inherent disadvantage of possible exposure to persons who represent stereotypic images, or of inadvertent reinforcement of a previously held stereotype" (p. 507).

A third view is held by Baker, et. al. (1981) that contact has no effect. "The effects of contact with handicapped persons are that proximity and familiarity have no impact on general attitude." This view does not fit with what is generally known about stereotyping--that prejudice is the result of lack of knowledge and information. Stereotypic images are usually reduced as we get to know a person better. "With increased contact, they (stereotypes) become more differentiated and more ambivalent (containing both good and bad characteristics)" (Triandis, 1971, p. 104).

Age

Yuker, Block and Young analyzed studies which included age as a variable (Bell, 1962; Gilliland, 1965; Siller & Chipman, 1965) and concluded "there is probably little relationship between age and attitude toward disability" (1970, p. 47).

There is some indication, however, that age does make a difference, if early teens and adults are compared. A study by Gosse (1978) found that scores on the ATDP increase from grade 7 to university. It is difficult to differentiate if the higher scores at the university level were because of age, education or experience.

Experience

Experience is another variable which is not always clearly defined. Sometimes it means years of teaching experience and sometimes it means experience in working with the physically disabled.

A study by Combs and Harper (1967) found that there was no difference in attitudes of teachers with three or more years of experience and those who were in university education training.

Larrivee (1981), on the other hand, felt that positive attitude change was the result of knowledge attainment, plus experience and contact.

Both Conine (1969) and Siller and Chipman (1965) felt there was no significant difference related to contact with the disabled.

A survey of Massachusetts teachers (Wechsler, Suarez & McFadden, 1981) indicated that teachers with previous experience with physically handicapped children had, in general, a more positive attitude.

Education

In general, it appears that some relationship may exist between completed educational level and attitudes toward the disabled of non-disabled and disabled subjects. In all cases where a significant relationship has been found, increasing educational levels are related to increased acceptance of the disabled. (Yuker, Block & Youngg, 1970, p. 51)

This was supported in a study by Gosse (1978).

Many factors have to be considered in studying attitude change methods. This literature review has covered attitudes, in general, attitude change theory, a scale for measuring attitudes towards the disabled, teacher attitudes, methods for changing attitudes and the various subject variables (i.e., sex, education) which are thought to possibly influence attitude. These subject areas seem to be the most relevant to the variables dealt with in this study. To help understand the relationship between the background theory and this study, it is necessary now to give a description of the factors such as the subject population, the treatments, the data collection methods and the proposed general method of analysis.

CHAPTER III

METHODOLOGY

Introduction

This chapter will explain the procedures used in collecting and analyzing the data for this study. Included will be a description of the subject, the treatments, the methods of data collection, and the proposed data analysis.

The initial part of this study was designed and conducted by Dr. Leroy Klas in 1974 in St. John's, Newfoundland. That data included a pre and post-test measurement of three groups of Memorial University students using the Attitudes Towards Disabled Persons Scale. The three groups included (1) on campus, live instruction of the course Exceptional Children (3230), (2) off campus, video instruction of the course 3230, and (3) on campus, control (students taking the course 2250, Educational Psychology).

This study will compare the 1974 data with a pre and post-test measurement using the same scale with similar groups in 1981. The two 1981 groups included (1) on campus, live instruction of the course 3230 and (2) on campus, control (students taking the course 2250). It was not possible to collect additional data off campus since the course 3230 was not being offered by video tape at this time.

Comparisons were made between all groups to attempt to determine the effectiveness of the different treatments and also to determine if there has been a change in attitudes

since 1974.

The data were also analyzed according to biographical data of the subjects to identify variables which might also affect the actual treatment.

Throughout this section there will be references made to the pre-test and the post-test. As was discussed in Chapter 2, the Attitude Towards Disabled Persons Scale was the measurement used in this study. The pre-test was form A (Appendix A) and the post-test was form B (Appendix B) for all groups.

The Subjects

All subjects were either part-time or full-time students of Memorial University of Newfoundland. They were all eighteen years of age or older. Both males and females participated in this study. There was no attempt made to have equal numbers of males and females. The majority of participants were either educators or education students. There were also some subjects who were either working in other fields or students in other faculties. For the most part, these "others" were in social work or nursing, both professions which would involve work with disabled persons.

There were five groups of subjects. Although there were slight differences in each group, it was assumed for the purposes of this study that they were equal. A description of each group follows. A summary of the groups

may be found in Table 5.

Group A: On campus, Live Instruction in 3230 (1974)

These students attended Memorial University, on campus, in St. John's, in 1974 and took the education course 3230, "Exceptional Children". (This course is further described in the section on "treatment", p. 52). There were two classes taught by Dr. L. Klas and two classes taught by Dr. N. Garlie. All four classes received the pre-test, treatment and post-test.

Subjects were not asked to identify themselves on the scale. Therefore, when analyzing the data, it was decided to use the pre-test data from two classes, one taught by Dr. Klas and one taught by Dr. Garlie, and the post-test data from the other two classes (see Table 5). This was to increase the effects of randomization.

Of the four classes, three were day classes and one was a night class. One study (Brecht, 1978) suggested that this would have an effect on attitudes because night students tend to be older and more likely to be married and working. However, other studies (Conine, 1969; Gosse, 1979; Higgs, 1975) have shown that age is not a factor among adults in attitudes towards the disabled. So, for the purposes of this study, all groups will be considered equal.

Table 5

Summary of Subject Groupings

Live Instruction on Campus 1974	A (1) Dr. Klas - 1 class Dr. Garlie - 1 class	A (2) Dr. Klas - 1 class Dr. Garlie - 1 class
Video tape Instruction off Campus 1974	B (1) 60 students chosen randomly from centers	B (2) 60 students chosen randomly from other centers
Control on Campus 1974	C (1) Dr. Garlie 2250 2 classes	C (2) Dr. Hartmann 2250 2 classes
Live Instruction on Campus 1981	D (1) Dr. Klas	D (2) Dr. Klas
Control on Campus 1981	E (1) Dr. Hartmann 2250	E (2) Dr. Yu 2250

1

Use pre-test
date only
Form A

2

Use post-test
data only
Form B

Group B: Off campus, Video Instruction in 3230 (1974)

These subjects were living in a number of smaller communities across Newfoundland and Labrador. The majority were teachers and about 60 per cent were over the age of 25 years. These students were part-time students, taking the course 3230 by video tape at a center in or near their home community.

All students received a pre-test, treatment and post-test. Data were available from 15 centers and approximately 300 students. For the purposes of analyzing the data, it was decided to have the number of subjects in this group equivalent to the number in group A. In order to do this, centers were matched by the number of subjects who took the pre-test, in pairs of approximately equal size (see Table 6). Data from L'Anse Au Loup was omitted because of an uneven number of centers. Within each pair, one center was randomly chosen for use of pre-test data and the other for the use of post-test data (see Table 7).

Sixty-five subjects were chosen for use of pre-test data and sixty-five were chosen for use of post-test data. They were chosen from the centers on a percentage basis using the number of subjects in a center in proportion to the total number of subjects in the pre-test group. The formula was $\frac{N}{187} \times 65 =$ (see Table 8).

Table 6

Off Campus Centers Matched by Number of Subjects in Pre-test

1. Clarendville	41	with	Carbonear	45
2. Wesleyville	34		Port Aus Basques	38
3. Placentia	33		Wabush	32
4. Glovertown	29		Springdale	24
5. Milltown	22		Roddickton	24
6. Joe Batt's Arm	20		Newman's Cove	18
7. English Harbour	11		St. Vincent's	11

Data from Lanse Au Loup was omitted because there was an uneven number of groups.

Table 7

Assignment to Pre-Test and Post-Test Data

Pre-test (B1)			Post-test (B2)	
1. Clarendville	41		Carbonear	39
2. Wesleyville	34		Port Aux Basques	30
3. Wabush	32		Placentia	24
4. Glovertown	29		Springdale	17
5. Milltown	22		Roddickton	21
6. Newman's Cove	18		Joe Batt's Arm	10
7. English Harbour	11		St. Vincent's	11
Total		187	152	

Table 8

Number of Subjects Chosen from Each Center

Places	Number of Subjects
1. Clarendville/Carbonear	14
2. Wesleyville/Port Aux Basques	12
3. Wabush/Placentia	11
4. Glovertown/Springdale	10
5. Milltown/Roddickton	8
6. Newman's Cove/Joe Batt's Arm	6
7. English Harbour/St. Vincent's	4
Total	65 subjects

There were 65 subjects placed in the pre-test group and 65 subjects placed in the post-test group. The number of subjects from each center was determined by the formula $\frac{N}{187} \times 65 =$

Group C: On Campus, Control (1974)

The subjects in group C attended Memorial University, on campus, in 1974. They were taking the course 2250, "Educational Psychology" (further described in the treatment section). This group was used as a control group and students who had taken the course 3230 were asked not to participate.

There were four classes. Two of them were taught by Dr. N. Garlie and given the pre-test only. The other two were taught by Dr. B. Hartmann and given the post-test only.

Group D: On Campus, Live Instruction in 3230 (1981)

The subjects in this group attended Memorial University on campus in 1981 and took the course 3230, "Exceptional Children." There were two classes in this group, both taught by Dr. L. Klas. Both received the pre-test, treatment and post-test. One class was randomly chosen for use of pre-test data; it was a night class where the majority of subjects were teachers and 60 per cent were over the age of 25. The second class was used for post-test data. This was a day class where the majority of subjects were under 25 years and were students.

Group E: On Campus, Control (1981)

The subjects in this group attended Memorial University in 1981 and took the course 2250. This was a control group

and subjects who had taken the course 3230 were asked not to participate. The majority of subjects in this group were students and under the age of 25. There were two classes in this group. Both were given the pre-test and the post-test but no treatment. One class, taught by Dr. B. Hartmann, was randomly chosen to be used for the pre-test data and the other, taught by Dr. M. Yu, was used for the post-test data.

Treatments

Group A: On Campus, Live Instruction in 3230 (1974)

This treatment was to take the course 3230, "Exceptional Children." This course was described in the university calendar as:

A Study of Exceptional Children--Physical, Social and Emotional Differences. This course studies the child with visual, hearing, speech, neurological, orthopaedic and social-emotional handicaps. Specific programs for emotional guidance and counselling will be considered.
(1982, p. 276)

The emphasis appeared to be on what are traditionally considered to be physical handicaps.

The major method of instruction was by lecture. The text was Educating Exceptional Children (Kirk, 1972). There were two instructors for this course, Dr. N. Garlie and Dr. L. Klas. Both made use of films and guest speakers who had physical disabilities. Some of the video tapes used in

the off campus instruction (Group B) were also used. There were slight differences in the assignments required by the two professors. Dr. Klas gave three quizzes and then offered the choice between group or individual report, an extra exam or a tutorial at a school or institution. The report involved library research and information (i.e., special schools and agencies), concerning a specific physical disability. The extra exam required more indepth study in one of the areas of disability. The tutorial involved weekly contact (1 to 2 hours) with an exceptional child under the direction of a field supervisor. A log of experiences was required along with a five page report researching the disability of the child.

The assignments for Dr. Garlie's class included a personal reaction paper (discussing their attitudes and how they learned them), quizzes and the option between doing volunteer work (keeping a log and doing a brief report), designing a toy or activity for use with a disabled person (trying it out and writing a report) or writing a researched term paper on an area of disability. It seems that at this time, the majority opted for group reports or term papers because of time constraints and schedule conflicts. For example, Virginia Water School for the Physically Disabled, the most suitable place for experience relevant to this course, was located at a considerable distance from the university, making the volunteer or tutorial experience a less attractive option for many students.

This group had access to the many journals and articles available in the education library of the university. They were encouraged to look at these, especially those which were on reserve. Considering that the majority of services (e.g., Children's Rehabilitation Center, Department of Rehabilitation), available to the disabled, are located in St. John's, these people would also have easy access to information from other professionals in the field, if they wished to seek it.

Group B: Off Campus, Video Instruction in 3230 (1974)

This treatment had the same basic aim, to promote awareness of the physically disabled, as the treatment for Group A. The course was still 3230 and, as such, had the same course description. The text was the same, Educating Exceptional Children (Kirk, 1972). The topics covered were the same, except that the topics Learning Disabilities and Juvenile Delinquency were added to the list.

The method of instruction was by video tape, produced by the Educational Television Department of Memorial University. Dr. L. Klas and Dr. L. Karaganis collected and presented the material on these tapes. Some films were used. There were guest speakers, as well as tapes of actual visits to institutions such as the School for the Blind in

Halifax. The tapes included many situations showing disabled persons coping with everyday life activities. The tapes recognized that there were differences in these people but emphasized that most could live a normal life, including getting an education, travelling, working and raising a family.

This group had a study guide which accompanied the video tapes and was not available to on campus students. It included most of the handouts which were distributed in the live treatment group (A): 1) a list of journals related to special education, 2) a list of volunteer agencies and contact persons, 3) a list of reference terms and 4) additional relevant material concerning different disabilities and some sources of help. It also gave an outline of the materials on the tapes and questions to aid discussion. The assignments included quizzes and a term report. There was no encouragement of actual interaction with a disabled person, through either live guests or volunteer experience. There was no regular interaction with the instructors. A tutor was responsible in each center for the distribution of materials, collection of assignments and the leading of group discussion. This tutor was not necessarily trained or experienced in the field.

There were some reference materials available in each center but there was not easy access to the journals and other reference books available on campus; nor was there the access to institutions for special care or professionals

in the field of rehabilitation that there was in St. John's.

Group C: On Campus, Control (1974)

There was no actual treatment for this group. A class of students taking an education course was chosen for ease in administering the measurement scale. The course, 2250, was chosen because it was a second year course and it was unlikely that any of the students had taken the course, 3230, a third year course. The course, 2250, is an Educational Psychology course. It is described in the university calendar as:

a course designed to assist prospective teachers in acquiring competence in understanding and guiding physical, intellectual, emotional and social development and in understanding the teaching-learning process through application of principles of learning, motivation, readiness, transfer, and individual differences. (1982, p. 272)

This course speaks to positive attitude towards understanding the needs of students in general but does not deal with the disabled.

Group D: On Campus, Live Instruction in 3230 (1981)

The treatment for this group was very similar to the treatment for Group A (live instruction of the course 3230, 1974). The course 3230 had the same description and covered the same areas. The text was an updated version of Educating Exceptional Children (Kirk, 1979). The only instructor in this group was Dr. L. Klas. The types of

assignments were similar to 1974. However, in 1981 it seemed that more subjects availed themselves of the opportunity for contact with disabled persons through the tutorial experience. Institutions were more actively seeking volunteer help. Virginia Waters School for the Physically Handicapped was now located within walking distance of the university, providing an excellent opportunity for relevant experience.

Again, there were guest speakers who had physical disabilities, providing an opportunity for interaction within the classroom. There were also films, some of which were the same as used in 1974 and some more recent.

There were the same opportunities for access to materials in the university library and also to institutions and professionals in the community.

Because it was International Year for Disabled Persons, there were a number of programs concerning disabled persons on television, in the months prior to and during this course. There were also a number of service groups and government agencies promoting an awareness of the needs of the disabled and encouraging the integration of disabled persons within the community. These factors could not be controlled in this study but could obviously have an influence on the subjects' attitudes.

Group E: Control Group (1981)

There was no treatment, as such, for this group. These

subjects were taking the course 2250 as previously described in Group C treatment. The reasons for choosing this course were the same. Subjects in this group could have been influenced by the same television programs and awareness promotions as Group D.

Data Collection

Data were collected from each group in two measurements. The first were the pre-test data using form A of the ATDP scale (see Appendix A). This was administered during the first few weeks of the semester. The second was the post-test data, using form B of the ATDP scale (see Appendix B). This was administered during the last few weeks of the semester. In addition to the scale, biographical data were collected from all the subjects to attempt to identify what variables might have an influence on a person's attitude toward disabled persons. This data did not give the identity of the subject but included the following information: 1) occupation, 2) grade level of their students if an educator, 3) age, 4) sex, 5) contact with a disabled person, 6) previous completion of the education course 3220. The subjects in 1981 were also asked: 1) about their frequency of contact with a disabled person, and 2) about their work experience with a person who has a disability.

Occupation

Occupation covered the areas of 1) teacher, 2) administrator, 3) counsellor, 4) other. This was to determine if there was a difference among the three groups of educators in their attitudes and also to compare them with those in other professions. It was found that in administering the questionnaire, there was a sufficient number of "students" to add that category when analyzing the data.

Grade Level

Grade level included 1) primary, 2) elementary, 3) secondary, and 4) other. This information applied to educators but was also given by many education students. This was to determine if there was any difference in attitudes of teachers who work at different grade levels.

Age

Subjects were asked to state their age. For purposes of analyzing the data, this category was divided into two groups: 1) those 25 years and under, and 2) those 26 years and over. Arnholter (1963) had suggested that college students have a more liberal attitude. It seems likely that he was referring to the person who attends university immediately after high school. These would be persons under the age of 25.

Sex

Sex of the subject may or may not have any bearing on attitudes towards the disabled. Studies by Conine (1969), Siller and Chipman (1963), and Higgs (1975) reported that females have a more positive attitude, while studies by Donaldson (1976), and Lazar, Orpet and Demos (1976) reported there to be no difference. One might also speculate that if there are differences, they would be diminishing as the Women's Movement of the Seventies takes effect. It was thus of interest to compare the attitudes of males and females to see if there was a difference between 1974 and 1981.

Contact with a Disabled Person

Having a relative or a friend who is disabled may influence a person's attitude toward disabled persons. Since personal contact and knowing someone as an individual may reduce stereotypes, one would expect a person with a relative or a friend who is disabled to have more positive or realistic attitudes about the disabled. Such individuals might also benefit more from the course 3230 because they could relate better to the information given. Only a "yes" or "no" answer was asked for in the questionnaire, in 1974. In 1981 an attempt was made to more clearly define "contact" by requesting the frequency of contact.

Education 3220

Taking the course 3220 may have had an impact on the subject's attitude toward disabled persons. This course was described in the Memorial University Calendar as: "A Study of Exceptional Children - Intellectual Differences". "This course deals with the slow learner and the gifted child, characteristics and identification of each and implementation for learning and adjustment. Specific programs will be considered" (p. 276). This course, then, dealt to some extent with the disabled child -- the child who is mentally retarded. Thus, subjects may have already developed some attitudes towards the mentally retarded which could be generalized toward other disabilities.

Frequency of Contact

The options in this category were 1) daily, 2) weekly, 3) monthly, and 4) yearly. This was in reference to the relative or friend who is disabled. This question was asked to determine if more frequent contact created a more positive attitude. A second question was asked concerning the friend or relative who is disabled, namely "What is the nature of the disability?" The data from this question was not analyzed in this study; however, it might be useful in further research, since some studies (Comer & Piliavin, 1975; Golin, 1970) suggest the attitude is related to the severity and nature of the disability. (See appendix C)

Work Experience with a Person with a Disability

Bell (1962) suggests that work experience would provide exposure to disabled persons, but not necessarily the same type as the close personal contact of a friend or relative. Work experience is likely, however, to have some influence on one's attitudes. (See appendix C)

Administration Procedure

The instructions, the biographical questions and the Attitude Towards Disabled Persons Scale were typewritten on mimeographed copies for each individual. The administrator was responsible for reading the instructions to the class and making sure everyone understood the directions.

Data Analysis

The major method of data analysis was Analysis of Variance (ANOVA) to determine if there was any difference between the pre-test data and the post-test data and if there was any difference between the groups.

The Newman-Keuls procedure, an a posteriori evaluation, was also used to determine if the mean score of either the pre-test or post-test data of any group were significantly different from any other group mean score.

The biographical data were also analyzed using ANOVA.

CHAPTER IV

ANALYSIS AND DISCUSSION OF THE DATA

Major Analysis

This chapter will include an analysis of the data, and a discussion of the results and their implications in relation to other research and literature that has been reviewed. The principal method of analysis used in this study was the Analysis of Variance (ANOVA), both one way and two way. An ANOVA is defined as:

A statistical technique that assesses the effects of one or more categorically independent variables, measured at any level upon a continuous dependent variable that is usually assumed to be measured at an interval level. (Nie, Hull, Jenkins, Steinburge & Bent, 1975, p. 9)

However, because there was an unequal number of subjects in each of the groups to be analyzed, an ordinary ANOVA would have given misleading results. There were two options to compensate for this difficulty. One was to randomly sample, to make equal-sized groups, and the other was to use the regression approach.

All effects, including main effects, covariate effects and any interaction effects, will be assessed simultaneously as in multiple regression. Each effect is the additional contribution to the explained variation after adjusting for all other effects. (Nie et al., 1975, p. 419)

It was decided to try both methods in this study.

The major analysis of this data involved comparing the mean group scores for the pre and post-test data for five groups: (A) Live instruction of 3230, on campus, in 1974; (B) Video instruction of 3230, off campus, in 1974; (C) Control group, on campus, in 1974; (D) Live instruction of 3230, on campus, in 1981; (E) Control group, on campus, in 1974. The hypotheses suggested a comparison of treatment effects as well as effect over time.

The first statistical procedure was a "breakdown" which provided the statistics of means, standard deviations and variances of the dependent variable in relation to specific independent variables. In this case the dependent variable was the ATDP score and the independent variables were the five groups, each divided into pre and post data. This made a total of ten groups. The results may be seen in Table 9.

The average means for the ten groups ranged from 106.5 to 126.67. The possible score on the ATDP ranged from 0 to 180. According to the authors of the scale, the higher the score, the more positive the attitude. However, no other interpretations about the meanings of scores was given. In reviewing the literature, scores were seldom given in the results of studies; therefore, the only type of consistent comparison which could be made with this data was that if a higher score means a more positive attitude, then there was some improvement from pre-test to post-test in every group except the 1974 control group. The attitude

Table 9

Descriptive Statistics for the Variable "Groups"

Variables = Score by Group and Pre-Post

Group	Description	Mean	Std. Dev.	Variance	N
1.	Live instruction treatment 1974	119.9704	22.4070	502.0737	135
	Pre-test	116.0597	16.2675	264.6327	67
	Post-test	123.8235	26.7040	713.1027	68
2.	Video instruction treatment 1974	108.3281	19.5340	381.5765	128
	Pre-test	106.5397	19.7524	390.1557	63
	Post-test	110.0615	19.3139	373.0274	65
3.	On campus control 1974	111.5495	19.7638	390.6059	91
	Pre-test	112.6786	16.0296	256.9494	56
	Post-test	109.7429	24.7557		35
4.	Live instruction treatment 1981	123.0811	16.4565	270.8153	74
	Pre-test	120.0250	14.5646	212.1276	40
	Post-test	126.6765	17.9928	323.7406	34
5.	On campus control 1981	123.7609	19.3347	373.8304	46
	Pre-test	123.5484	16.3948	268.7892	31
	Post-test	124.2000	25.0063	625.3143	15

scores in 1981 appeared to be more positive than in 1974. However, comparing means was not totally sufficient since there was a variation in group sizes.

The first comparison done was an ANOVA using the regression method. The results may be seen in Table 10. The ANOVA showed that the main effects and the group effects were significant, while the pre-post effects and the interaction effects were not. This means that there were differences within groups but not a significant difference in the amount of change in the pre-test and post-test scores.

The new task, then, was to determine the cause of the difference between groups. There could be a difference based on the make up of any one group or there could be an overall difference from 1974 to 1981. It was decided to do an a posteriori comparison, the Newman-Keuls procedure, to determine which of the means was statistically different from other group means. This procedure was performed by (1) arranging each of the means of the ten groups in order from smallest to largest (see Table 11), (2) determining the difference between each mean and every other mean, (for example, Table 12 reflects a difference between the mean of group 5 and the mean of group 2 of 6.117), and (3) determining the critical range by multiplying the appropriate studentized range statistic (Winer, 1962), which is determined by the number of degrees of freedom and the number of steps between the ordered means by

Table 10
 Analysis of Variance Using the Regression Approach
 Variables = Score by Pre-Post and Group

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance OF F
Main Effects Post Group	18623.223	5	3724.645	9.391	0.000*
	18138.045	4	4534.511	11.435	0.000*
	18138.045	4	4534.511	11.435	0.000*
2-Way Interactions Pre-Post Group	1759.552	4	439.888	1.105	0.352
Explained	21377.688	9	2375.299	9.989	0.000
Residual	184039.875	464	396.637		

* Significant
 MSE - Mean Square Error

Table 11

Group Means in Order from Smallest to Largest

Group Description	Mean
1. Video Instruction, 1974 pre-test	106.5397
2. Control, 1974, post-test	109.7429
3. Video Instruction, 1974 post-test	110.0615
4. Control, 1974, pre-test	112.6796
5. Live instruction, 1974, pre-test	116.0997
6. Live instruction, 1981, pre-test	120.0250
7. Control, 1981, pre-test	123.5464
8. Live instruction, 1974, post-test	123.8235
9. Control, 1981, post-test	124.2000
10. Live instruction, 1981, post-test	126.6765

Table 12
Newman-Keuls Analysis

Groups	1	2	3	4	5	6	7	8	9	10
1	3.2032	3.5218	6.1389	9.820	13.4853*	17.009*	17.2873*	17.6603*	20.1368*	
2		0.319	2.936	6.317	10.282	13.805*	14.081*	14.457*	16.933*	
3			2.617	5.998	9.963	13.486*	13.762	14.138*	16.614*	
4				3.381	7.346	10.869	11.145	11.521	13.999	
5					3.965	7.488	7.764	8.140	10.616	
6						3.523	3.799	4.175	6.651	
7							0.276	0.652	3.120	
8								0.376	2.852	
9									2.476	
10										14.373
DIFFERENTIAL		8.906	10.064	11.671	12.411	12.957	13.408	13.794	14.115	14.373

* Statistically significant difference in means

1. Video Instruction (1974) Pre-test
2. Video Instruction (1974) Post-test
3. Video Instruction (1974) Pre-test
4. Video Instruction (1974) Post-test
5. Live Instruction (1981) Pre-test
6. Live Instruction (1981) Post-test
7. Live Instruction (1974) Pre-test
8. Live Instruction (1974) Post-test
9. Live Instruction (1981) Pre-test
10. Live Instruction (1981) Post-test

$\sqrt{MSe/N}$ (MSe is the mean square and N is the harmonic mean, used when comparing groups of different sizes).

The critical values for each step may be seen in the bottom row in Table 12. These were compared with the mean differences in each step. Each mean difference which was higher than its critical value was considered to be significant. The results at the .05 level were that groups 7, 9, and 10 were significantly different from groups 1, 2, and 3; group 8 was significantly different from groups 1, and 2; group 6 was significantly different from group 1. A decision concerning this information was made according to the usual format.

1 2 3 4 5 6 7 8 9 10

Groups underlined by a common line were similar to each other. The 1981 results, both pre and post-test, and the 1974 live instruction post-test mean were different from the video instruction (1974) pre and post-tests and the control post-test. Groups 4 and 5 were not significantly different from any group and could therefore be in either of the two areas. Since group 4 was the pre-test to group 2, it probably belonged with Groups 1, 2, 3. If group 5 was similar to Groups 1, 2, 3, then it would be significantly different from Groups 6, 7, 8, 9, 10. This being the case, the live instruction, treatment, 1974 was successful (a significant difference between pre-test, group 5 and post-test, group 8). On the other hand, group

5 could fit in with groups 6, 7, 8, 9, 10, in which case there would not be a difference between the pre-test and post-test data for the live instruction (1974) treatment. No treatment group had a clearly significant difference between pre and post-test group means, while there was a significant difference between the 1981 groups and some of the 1974 groups. This supports the premise that the difference was more between the time periods than the treatment.

To further analyze this data, it was decided to perform another ANOVA with equal-sized groups. Although this would omit a considerable amount of data, it was considered to be a more statistically sound procedure. Since 15 was the number of subjects in the smallest group, 15 subjects were chosen from each of the ten groups using a table of random numbers. An ANOVA was then run using the data from these equal-sized groups. The results are presented in Table 13. The results were similar to the ANOVA using the regression approach. The main effects and group effects were significant and the pre-post and the interaction effects were not. This led to the same conclusion (as the ANOVA using the regression approach) that there were no significant differences in treatments, since the amount of change between pre and post-test data was similar for all groups. There was a difference in groups, which was likely to have been the difference between the 1974 and 1981 groups as suggested by the Newman-Keuls procedure.

The conclusion, therefore, in the major analysis was that the null hypotheses one to five were accepted. In

Table 13

Analysis of Variance Using Equal Sized Groups

Variables = Score by Pre-post and Group

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects	4307.816	5	861.563	2.687	0.024*
Pre-Post	461.126	1	461.126	1.438	0.232
Group	3846.693	4	961.673	2.999	0.021*
2-Way Interactions	487.309	4	121.827	0.380	0.823
Pre-Post Group	487.309	4	121.827	0.380	0.823
Explained	4795.125	9	532.792	1.662	0.104
Residual	44889.238	140	320.637		
Total	49684.363	149	333.452		

*Significant

review, those hypotheses were as follows:

1) There will be no significant difference in attitude change between those completing the course on Exceptional Children (3230) through the traditional medium of live instruction on campus and those taking 3230 off campus by video tape.

2) There will be no significant difference in attitude change between those completing the course 3230 through live instruction in 1974 and those completing the course by live instruction in 1981.

3) There will be no significant difference in attitude change between those completing the course 3230 through live instruction in 1974 and those in the control group in 1974.

4) There will be no significant difference in attitude change between those completing the course 3230 through live instruction in 1981 and those in the control group in 1981.

5) There will be no significant difference in attitude change between those completing the course 3230 through videotape and those who are in the control group in 1974.

Each of these hypotheses referred to a change in attitude. In order to reject any of them, there would have had to have been a significant difference between the group

means for the pre-test and post-test data in one or more of the five groups. Since this did not occur, the null hypotheses one to five were accepted.

There was some possibility that a Type II error was committed here, that is, the null hypotheses were accepted when, in fact, the opposite was true. The source of this error might have been the fact that there was no significant interaction effect in either ANOVA. The interaction effect, in this case, was how groups and pre and post-test data interacted in their effect on the score. The possibility existed that in the regression approach ANOVA, the unequal sized groups still had some effects on the results of the interaction and that in the equal size groups ANOVA, the amount of data which were omitted also affected the accuracy of the interaction effects. There was some possibility that there was a difference between pre and post and thus a treatment effect, particularly in the case of Group A, live instruction, 1974, where there was a difference in the pre and post-test group means. However, as the results stand, the null hypotheses must be accepted; the further testing in the secondary analysis seemed to support this decision.

Hypotheses 6 stated there will be no significant difference in attitudes towards the disabled between the subjects in 1974 and those in 1981. It was rejected. All evidence led to the fact that the most significant differences occurred between these two groups. There are two possible reasons for the difference: (1) a difference in the make-up of the

two groups (demographic variables), or (2) a change over time as the result of events occurring in society which have changed the attitudes of the general public toward the disabled. The difference between the 1974 data and the 1981 data may have been the result of one of these reasons or a combination of the two. Further analysis, intended to answer the research questions, was done to explore the effects of the demographic variables.

Analysis of Demographic Variables

After considering the results of the Newman-Keuls procedure and noting that the post-test data of the 1974 live instruction group was similar to all of the 1981 groups, it was decided to omit this data in further comparing the 1974 and 1981 data. In the analysis of the demographic variables, the 1974 subjects were considered as one group and the 1981 subjects were considered as another. Change between pre and post-test data was no longer a concern. All data were considered together, actually measuring the attitudes of 474 different subjects since the pre and post-tests groups were equivalent but not the same persons.

A crosstabulation was performed to determine the number of subjects in each group for each variable. This was carried out to decide if there were enough subjects in each category to make analysis of particular variables worthwhile. This information is in Table 14. Three statistical

Table 14

Crosstabulation of Demographic Variables by Pre-Post and Group

Occupation	Group 1				Group 2		Group 3		Group 4		Group 5	
	Klas		Garlie									
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1. teacher	9	5	-	21	49	54	1	6	22	2	-	-
2. administrator	-	-	-	-	3	2	-	-	1	-	-	-
3. counsellor	1	-	-	-	1	-	-	-	3	-	-	-
4. education student	24	18	19	3	6	8	14	11	3	14	27	12
5. other student	2	14	6	-	2	0	39	18	5	16	3	3
6. other occupations	4	2	2	4	2	1	2	0	6	1	1	0
0. unspecified	-	1	-	-	-	-	-	-	-	1	-	-
<u>Grade</u>												
1. Primary	3	4	4	5	12	17	3	3	9	3	10	11
2. Elementary	10	12	4	11	34	36	7	9	10	6	3	0
3. Secondary	17	4	11	5	12	9	5	5	5	5	11	0
4. Other	1	-	-	3	0	2	-	-	1	-	1	0

Table 14 (Cont'd)

	Group 1				Group 2		Group 3		Group 4		Group 5	
	Klas		Garlie		Pre	Post	Pre	Post	Pre	Post	Pre	Post
	Pre	Post	Pre	Post								
5. not an educator	7	16	8	4	4	1	41	18	12	19	4	3
6. unspecified	2	4			1	0	2	1	3	1		
<u>Relative Disabled</u>												
1. Yes	22	23	17	14	25	19	35	20	11	27	23	8
2. No	17	17	10	14	37	42	20	14	29	7	8	7
0. Unspecified	1				1	4	1	1				
<u>Sex</u>												
1. Female	21	31	16	23	27	40	36	22	31	26	26	15
2. Male	19	9	11	5	36	24	20	13	9	8	5	0
0. Unspecified						1						
<u>Age</u>												
1. 1-25	37	33	25	12	23	25	51	28	15	33	30	15
2. 26-99	2	5	2	15	38	36	2	5	24	1	1	0
0. Unspecified	1	2	-	1	2	4	3	2	1	0		
<u>Education 3220</u>												
1. Yes	11	15	11	21	35	49	5	8	11	12	2	1

Table 14 (Cont'd)

	Group 1				Group 2		Group 3		Group 4		Group 5	
	Klas		Garlie									
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
2. No	29	25	16	7	1	8	51	26	29	22	29	14
0. Unspecified					27	8	0	1				
<u>Frequency of Contact</u>												
1. daily									6	5	10	4
2. weekly									2	9	9	1
3. monthly									3	5	1	2
4. yearly									5	7	3	1
5. no relative									23	7	8	7
0. unspecified	40	40	27	28	63	65	56	35	1	1		
<u>Work Experience</u>												
1. Yes									14	20	7	6
2. No									22	12	23	8
3. Unspecified	40	40	27	28	63	65	56	35	4	2	1	1

procedures were performed with each of the independent variables related to the demographic data: 1) a breakdown of the descriptive statistics such as means, standard deviations and variance, 2) a ch.-square to determine if the variables were statistically independent (see Table 15), and 3) an ANOVA using the regression approach for each of the demographic variables to determine which ones had an effect on the subjects' attitudes. The demographic variables were considered in terms of the research questions.

- 1) Is there a significant difference in attitude between teachers, counsellors, administrators and students?

In looking at the cross-tabulation of occupations, it was found that there were only six administrators and four counsellors in the entire study. It was therefore decided to compare teachers, education students and other students. The means for this group are found in Table 16. The group means for teachers were slightly lower than education or other students; however, according to the ANOVA (Table 17, this difference was not significant. There was no significant interaction effect and no significant occupation effect, but the group effect was significant, supporting the premise that the difference is between the 1974 and 1981 groups.

Table 15
 Significance of Chi-Square for each of the
 Demographic Variables

Variable	Chi-Square	DF	Significance
Occupation	19.50420	2	0.0001
Grade Level	18.50784	2	0.0001
Age	3.00698	1	0.0829*
Sex	21.57420	1	0.0000
Relative Disabled	1.77158	1	0.1832*
Other Education	21.80648	1	0.0000

*Acceptable at the .20 level of confidence
 All others acceptable at the .05 level

Table 16

Descriptive Statistics for the Variable "Occupation"

Variables = Score by Occupation and Group (1974 and 1981)

Value	Sum	Mean	Std. Dev.	Variance	N
Teacher	15935.000	111.4336	19.6822	387.3882	143
1974	13047.000	109.6387	20.1657	406.6565	119
1981	2888.000	120.3333	14.3547	206.0580	24
Ed. Student	16138.000	116.9420	19.2812	371.7630	138
1974	9173.000	111.8659	16.6583	277.5003	82
1981	6965.000	124.3750	20.5591	422.6750	56
Ot. Student	10918.000	116.1489	18.5924	345.6765	94
1974	7554.000	112.7463	19.1409	366.3740	67
1981	3364.000	124.5926	14.2323	202.5584	27

Table 17

Analysis of Variance of the Variable "Occupation"

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects	11822.268	3	3940.756	11.370	0.000
Occupation	658.669	2	329.335	0.950	0.388
Group	9300.946	1	9300.946	26.835	0.000
Interaction	41.095	2	20.548	0.059	0.942
Explained	12607.469	5	2521.494	7.275	0.000
Residual	127896.641	369	346.603		
Total	140504.109	374	375.679		

Number of Subjects = 375

- 2) Is there a significant difference among educators who work at different grade levels?

The data presented in Table 18 showed that secondary and primary educators' attitudes were the same, while elementary teachers scored at a lower level. Again, however, the ANOVA (Table 19) showed that this difference was not significant. There was a difference between 1974 and 1981 groups, but grade level effects and interaction effects were not significant.

- 3) Is there a significant difference in attitude between persons who are over twenty-five years of age and those who are under twenty-five years of age?

The means (Table 20) showed a slightly higher score among those who were under 25 years than those who were over 25 years. The subjects in 1981 scored higher than those in 1974. The results of the ANOVA (Table 21) showed that it is the difference between groups that is significant and not the interaction or age effects.

- 4) Is there a significant difference in attitude between males and females?

The means for the variable sex show that females had a slightly more positive attitude than the males (see Table 22). The ANOVA (Table 23) shows that this difference is not

Table 18

Descriptive Statistics for the Variable "Grade Level"

Variables = Score by Grade Level and Group (1974 and 1981)

Value	Sum	Mean	Std. Dev.	Variance	N
Primary	8644.000	115.2533	21.6502	468.7323	75
1974	4573.000	108.8810	20.3592	414.4977	42
1981	4071.000	123.3636	20.7783	431.7386	33
Elementary	13247.000	111.3193	20.1662	406.6768	119
1974	10993.000	109.9300	20.2750	411.0759	100
1981	2254.000	118.6316	18.3824	337.9123	19
Secondary	9222.000	115.2750	18.3185	335.5690	80
1974	6551.000	111.0339	16.9003	285.6195	59
1981	2671.000	127.1905	17.1774	295.0619	21

Table 19

Analysis of Variance for the Variable "Grade Level"

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects	10124.227	3	3374.742	9.039	0.000
Grade	747.487	2	373.744	1.001	0.369
Group	8536.108	1	8536.108	22.864	0.000
Interaction	488.770	2	244.385	0.655	0.520
Explained	10175.641	5	2035.128	5.451	0.000
Residual	100056.125	268	373.344		
Total	110231.766	273	403.779		

Number of Subjects = 274

Table 20

Descriptive Statistics of the Variable "Age"

Variables = Score by Age and Group (1974 and 1981)

Value	Sum	Mean	Std. Dev.	Variance	N
Under 25	32686.000	115.9078	19.1240	365.7281	282
1974	21093.000	111.6032	18.2216	332.0279	189
1981	11593.000	124.6559	17.9761	323.1412	93
Over 25	12515.000	112.7477	19.4392	377.8812	111
1974	9432.000	110.9647	20.2046	408.2249	85
1981	3083.000	118.5769	15.6491	244.8938	26

Table 21
Analysis of Variance for the Variable "Age"

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects	9436.190	2	4718.095	13.845	0.000
Grade	680.916	1	680.916	1.998	0.158
Group	6443.955	1	6443.955	18.909	0.000
Interactions	446.647	1	446.647	1.311	0.253
Explained	12568.438	3	4189.479	12.294	0.000
Residual	132563.547	389	340.780		
Total	145131.984	392	370.235		

Number of Subjects = 393

Table 22

Descriptive Statistics for the Variable "Sex"

Variables = Score by Sex and Group (1974 and 1981)

Value	Sum	Mean	Std. Dev.	Variance	N
Female	30366.000	116.7923	19.5328	381.5320	260
1974	18217.000	112.4506	20.0636	402.5472	162
1981	12149.000	123.9694	16.3420	267.0609	98
Male	16102.000	111.0483	18.7925	353.1574	145
1974	13450.000	109.3496	17.6547	311.6883	123
1981	2652.000	120.5455	22.3494	499.4978	22

Table 23

Analysis of Variance for the Variable "Sex"

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects	12927.147	2	6463.574	18.616	0.000
Sex	608.549	1	608.549	1.753	0.186
Group	7374.830	1	7374.830	21.240	0.000
Interactions	1.490	1	1.490	0.004	0.948
Explained	13512.297	3	4504.099	12.972	0.000
Residual	139230.422	401	347.208		
Total	152742.719	404	378.076		

Number of Subjects = 405

significant. The significant effect is between the groups (1974 and 1981), and not sex or interaction effects.

- 5) Is there a significant difference in attitude between people who have a relative or friend who is disabled and those who do not?

The means (see Table 24) showed that those who had a relative or a friend who is disabled had a more positive attitude. The ANOVA (Table 25) showed that there was significance in the main effects, variable effects (having a disabled relative or friend), the group effects and the interaction effects. This would suggest that having personal contact had a positive effect on attitudes of the subjects in both 1974 and 1981.

- 6) Is there a difference in the attitudes of those who have taken the course 3220 and those who have not?

This course did not appear to have any positive effect on the scores; in fact, those who did not take the course had a higher score (see Table 26). This result was probably because of the fact that the 1981 group scored higher than other groups and the majority (78.3%) did not take the course, rather than any relationship between the course and the score. The ANOVA (see Table 27) showed no significant effect of the course 3220, but a significant difference in groups.

Table 24

Descriptive Statistics of the Variable "Relative Disabled"

Variables = Score by Relative Disabled and Group (1974 and 1981)

Value	Sum	Mean	Std. Dev.	Variance	N
Yes	24245.000	117.1256	19.4782	379.4016	207
1974	15452.000	111.9710	18.4822	341.5904	138
1981	8793.000	127.4348	17.3031	299.3964	69
No	21550.000	112.8272	18.7422	351.2700	191
1974	15542.000	111.0143	19.2470	370.4458	140
1981	6008.000	117.8039	16.4475	270.5208	51

Table 25

Analysis of Variance for the Variable "Relative Disabled"

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects	13729.394	2	6864.697	20.463	0.000
Relative Disabled	2311.764	1	2311.764	6.891	0.009
Group	10212.738	1	10212.738	30.443	0.000
Interaction	1551.677	1	1551.677	4.625	0.032
Explained	14558.578	3	4852.859	14.466	0.000
Residual	132174.828	394	335.469		
Total	146733.406	397	369.606		

Number of Subjects = 398

Table 26

Descriptive Statistics for the Variable "Other Education"

Variables = Score by Other Education and Group (1974 and 1981)

Value	Sum	Mean	Std. Dev.	Variance	N
Yes	16485.000	113.6897	20.2050	408.2433	145
1974	13218.000	111.0756	20.0838	403.3586	119
1981	3267.000	125.6538	16.3167	266.2354	26
No	26271.000	116.7600	18.1744	330.3082	225
1974	14737.000	112.4962	17.2129	296.2827	131
1981	11534.000	122.7021	17.8920	320.1254	94

Table 27

Analysis of Variance for the Variable "Other Education"

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects	10854.731	2	5427.366	16.210	0.000
Other Education	35.993	1	35.993	0.108	0.743
Group	9430.226	1	9430.226	28.166	0.000
Interactions	293.486	1	293.486	0.877	0.350
Explained	11066.695	3	3688.898	11.018	0.000
Residual	122540.664	366	334.811		
Total	133607.359	369	362.080		

Number of Subjects = 370

- 7) In the 1981 group, is there a significant difference in attitude which correlates with the amount of contact?

A comparison of the means (Table 28) showed that daily and monthly contact resulted in slightly more positive attitudes than weekly or yearly. The ANOVA (Table 29) showed that contact did not have a significant effect on the scores.

- 8) In the 1981 group, is there a significant difference in attitude between those who have had work experience with disabled persons and those who have not?

The means (see Table 30) showed almost no difference between those who have work experience and those who have not. The ANOVA (see Table 31) also showed no significant effect of work experience.

Summary of Data Analysis

The results of the ANOVAs, both equal-sized groups and using the regression approach, were that the main effects and the group effects were significant and the pre-post effects and the interaction effects were not. This showed that there was a difference between groups but not a difference in the amount of change between pre and post-test data. This means that no treatment was more effective than another but that there was a difference between the groups

Table 28

Descriptive Statistics for the Variable "Contact"

Variables = Score by Contact

Value	Sum	Mean	Std. Dev.	Variance	N
Daily	3228.000	129.1200	11.6165	134.9433	25
Weekly	2623.000	124.9048	21.8195	476.0905	21
Monthly	1447.000	131.5455	13.1861	173.8727	11
Yearly	1982.000	123.8750	20.9344	438.2500	16

Table 29

Analysis of Variance for the Variable "Contact"

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects	586.964	3	195.655	0.641	0.591
Contact	586.964	3	195.655	0.641	0.591
Explained	586.964	3	195.655	0.641	0.591
Residual	21072.963	69	305.405		
Total	21659.889	72	300.832		

Number of Subjects = 73

Table 30

Descriptive Statistics for the Variable "Work Experience"

Variables = Score by Work Experience

Value	Sum	Mean	Std. Dev.	Variance	N
Yes	5847.000	124.4043	16.5420	273.6374	47
No	8024.000	123.4462	19.0354		

Table 31

Analysis of Variance for the Variable Work Experience

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects	25.039	1	25.039	0.077	0.782
Work Experience	25.039	1	25.039	0.077	0.782
Explained	25.039	1	25.039	0.077	0.782
Residual	35777.379	110	325.249		
Total	35802.418	111	322.544		

Number of Subjects = 112

either in make-up or over time. The Newman-Keuls Procedure showed that this difference was between the 1974 and 1981 groups. This was confirmed in the secondary analysis when the ANOVAs for each demographic variable showed significance in the main and group effects. The subjects who had a relative or friend who was disabled had a significantly more positive attitude than those who did not. No other variable seemed to have a significant influence on attitudes toward the disabled.

The fact that cell frequencies were disproportionate might have had some effect on the results. There was a slight possibility that treatment group A (live instruction, on campus, in 1974) was successful but, using this data, it was not possible to prove that conclusively. Every effort was made to compensate for the unequal cell size and since several methods of analyzing the data were employed and they all produced the same results, it seemed reasonable to conclude they were statistically accurate.

Discussion and Implications

The differences in group means and the results of the ANOVAs indicated that there was some treatment effect, although it was not significant. There was no conclusive evidence to indicate there was a significant difference between the live instruction and the video instruction, although it was assumed that both had some effect on changing

attitudes towards the disabled. Martin (1980) concluded that videotape was a viable medium of instruction. Dailey and Halpin (1981) found that videotapes of disabled children were effective in changing attitudes of preservice teachers. Donaldson and Martinson (1977) and Croft et al. (1969) found that live and video presentations were both effective.

Since the results indicate that neither the live nor the videotape approaches produced statistically significant changes in attitude towards the disabled, other factors must be considered. Two major areas for consideration are: 1) whatever happened during the Seventies to change attitudes, and 2) close personal contact.

During the decade of the Seventies, Rehabilitation International had a number of goals which included:

- 1) to increase public awareness of the problem of disability
- 2) to urge governments to give priority to programs for the development of rehabilitation and related services
- 3) to assure the international sharing of information and skills for these purposes.
(International Rehabilitation Review,
Jan. 1980, p. 1)

These types of activities would certainly have the potential to change public attitude. More public awareness could have been accomplished in a number of ways. These included 1) documentaries about the needs and abilities of the disabled, 2) advertisements in the mass media which accented

the abilities of the disabled, and 3) portrayal of the disabled person as a useful member of society rather than a dependent invalid in movies and television shows.

Governments have been encouraged to pass legislation in several areas affecting the disabled person, including education, accessibility, attendant care, recreation and job opportunities. Disabled persons not only wanted these rights but are demanded the right to plan these services through consumer organizations. In Newfoundland this organization is called COD, which stands for Consumer Organization for the Disabled. A report of Canada Health and Welfare (June, 1980) said "The decade was characterized by a marked change of attitudes and major advances in human rights in all ten provinces and the Federal government" (p. 2).

In addition, inexpensive telecommunications, increased career mobility of professional persons and, opportunities for world conferences concerned with different aspects of disability promoted the sharing of skills and information. One such conference was the World Congress on Rehabilitation in Winnipeg in 1980. The conference provided a sharing opportunity for disabled persons, and all types of professionals in the field, as well as the manufacturers of technical aids.

There were many potential spin-offs from changes in legislation, as well as the exchange of knowledge and information. Gellman (1959) predicted that:

Changes in the social climate will affect parental attitudes and thus alter child rearing practices... School and society can supplement this approach by stressing values which do not require each and every child to fit current concepts of normality... With opportunities for normal relationships handicapped and nonhandicapped can learn to know each other as persons. (p. 6)

It appeared, from the results of this study, that this process of attitude change has at least begun to happen. In terms of the theoretical basis for this study, Festinger's Dissonance Theory, the treatments did not create sufficient dissonance to significantly change attitudes. In the 1981 groups, the lack of significant change may have been because the information presented was consistent with the attitudes the subjects already held. In the 1974 groups, the subjects may have resisted new information which was inconsistent with their attitudes. In addition, the people who had a relative or friend who was disabled probably sought the type of information which produced a positive attitude.

The difficulty with Festinger's theory is that it is mainly concerned with cognitions in changing behavior. This study has shown there is also a need for interactions to change attitudes towards the disabled.

The results of this study showed that information was not enough to significantly change attitudes and that personal contact was a variable which had significant impact. Previous studies concurred with these findings.

Conine (1969) stated:

It appears that attempts at changing teachers' attitudes towards the disabled person should go beyond cognitive dimensions such as providing information and offering courses and be directed at a change in feelings. (p. 280)

Larrivee (1981) supported Conine in saying that it was "important to have increased experience and contact with exceptional children in conjunction with knowledge attainment and specific skill acquisition in the formation of more positive attitudes" (p. 37).

The present study showed that the type of contact was also important. Work experience did not have a significant impact on attitude, but having a relative or a friend who was disabled did. Both situations were a type of contact; however, it must have been a close personal contact, rather than a professional contact, that made the difference. A study by Bell in 1962 showed similar results. He studied workers in an institution for disabled persons and found that subjects who had a relative who was disabled had a more positive attitude than other workers, including rehabilitation workers who dealt directly with the disabled persons.

It seemed likely that a person who had a relative or friend who was disabled would be better able to relate to information given about the disabled and, in fact, be more likely to seek out information because of a personal interest in the subject. A study by Higgs (1975) suggested

that people who had a high degree of contact also had a high degree of information and a positive attitude. The implication of this finding is that, if a course is attempting to create positive attitudes, it should include a required, rather than an optional, opportunity for direct contact with a disabled person. Such contact needs to be long enough and personal enough for the student to see the disabled individual as a person, perhaps in home and recreational settings, as well as school or work situations. It might also be useful to give some training to the disabled person to try to insure the experience is a positive one. Evans (1976) suggested that:

Disabled persons can place their non-disabled counterparts at ease during such social encounters, and the results of this reduction in any existing strain within the social interaction, can lead to the formation of positive attitudes. (p. 578)

The person with a disability would then be taking some responsibility in changing attitudes.

None of the other variables besides contact showed a significant impact on attitude. This appeared to be consistent with the literature review, with the exception of differences in attitudes related to the sex of the subject. In an article published as recently as November-December, 1982, the statement was made that the majority of studies found females to be more accepting than males (Livneh, 1982); however, a check of Livneh's references showed that the

studies which were reported were all completed prior to 1970. Perhaps the Seventies were a decade of change in sex role stereotypes, as well as attitudes towards the disabled. A study by Higgs (1972) suggested that females tended to have more contact with the disabled. If contact is an influential variable, then this might have been the reason for variation of attitudes in the past between males and females.

With the variable of age, only studies which have measured attitudes in children or adolescents (Gosse & Sheppard, 1979; Miller, Armstrong & Hagan, 1981; Siller, 1963) have shown a difference related to age. When considering adults only, as this study did, there was seldom any significant difference related to age.

Teachers, education students and other students were the only occupational categories which had sufficient numbers to be analyzed. The fact there was no significant difference between teachers and students supported the study by Combs and Harper (1967), which indicated that teaching experience does not affect attitudes.

There were no studies available which indicated there should be a difference in teachers' attitudes according to the grade level taught; no such differences were found in this study.

Education 3220 was a course which dealt with the child with mental disabilities. It was considered possible that

subjects who had taken this course might have gained information which had formed a basis for positive attitudes towards the disabled. However, no significant difference was found.

The variable "frequency of contact" showed up no significant influence on attitude. There seemed to be some inconsistency in the fact that the means were similar for those who had weekly or yearly contact. Although there was no research available, it might be expected that attitudes would become progressively more positive from yearly to monthly to weekly to daily contact. This question was asked only of the 1981 group. Since this was a small group, it might be worthwhile to do further research with this variable in a larger group.

The events which occurred during the Seventies and the variable of having a relative or friend who is disabled seemed to be the most influential factors in this study. There is room for further research to determine which types of events can create the most change. There is also a need to determine the quality and quantity of social contact which encourages positive attitudes.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The main purpose of this study was to find an effective way to develop positive attitudes, particularly of teachers and education students, towards disabled persons in Newfoundland and Labrador. Since education or the provision of information was often cited as a method of instituting change, this study compared two modes of instruction, live instruction on campus and video tape instruction off campus, of an Education course 3230, "Exceptional Children" of Memorial University of Newfoundland; to determine which was more effective in creating attitude change. To broaden the scope of the study, a comparison of live instruction of Education 3230 in 1974 and 1981 was also made. This was to determine if attitudes towards the disabled had changed over time as the result of events occurring in society which had emphasized public awareness, such as International Year of the Disabled and the Terry Fox Marathon. As well, it was necessary to consider demographic variables such as age, sex, occupation, work experience and having a relative or friend who is disabled to see if any of these factors influenced attitudes toward the disabled.

The study involved five groups: (A) Live instruction, on campus, in 1974, (B) Video instruction, off campus, in

1974, (C) a Control group, on campus, in 1974, (D) Live instruction, on campus in 1981, and (E) a Control group, on campus, in 1981. The instruction groups were taking the course Education 3230, a survey course which looked at the physical, social and emotional differences of exceptional children and emphasized how to meet their needs in a positive way. The control groups were taking the course Education 2750, a course in Educational Psychology, which covers the development and guidance of the "normal" child. Subjects were not assigned to groups nor were the groups stratified in any way.

The instrument used to measure attitudes was the Attitude Towards Disabled Persons Scale, forms A and B. The two forms were considered equivalent. This scale, which has been widely used in attitude research, was considered reliable for the purposes of the study. Form A was administered as a pre-test at the beginning of the treatment and Form B as a post-test at the end of the treatment. In addition to completing the ATDP in the form of a typewritten questionnaire, subjects were asked to provide information concerning demographic variables. Subjects were not asked to identify themselves, as the concern was to determine attitude change of the group and not of individuals. In comparing the groups, groups were randomly chosen to be used for pre-test or post-test data.

A computer analysis was made to compare the groups for differences in attitude change. The fact that group size varied meant that a straightforward analysis of variance

was unlikely to be accurate. An analysis of variance, using the regression approach, determined that the main effects and group effects were significant and that the pre-post effects and interaction effects, although showing attitude improvement, were not statistically significant. The Newman-Keuls procedure was used to compare differences in group means. The results led to the decision that there was no significant difference in the pre-test and post-test means of any one group but that there was a significant difference between the means of some of the 1974 group and those of the 1981 groups.

An analysis of variance was run with the equal-sized groups. Subjects were randomly eliminated in each group to create equally sized groups of 15 for the pre-test and 15 for the post-test data for each of the five groups. This ANOVA produced the same results as the analysis of variance using the regression approach. All the major analysis, therefore, suggested there was no significant difference between the treatments in creating attitude change but that there was a more positive attitude among subjects in 1981 than in 1974.

An analysis of variance with each demographic variable was then performed to determine if the difference was because of a variation in the make-up of the groups or because of a difference over time. This time the subjects were divided into only two groups, the 1974 data and the 1981 data. In analyzing each demographic variable, there was a sign-

ificant main and group effect. This showed that it was not the demographic variables which caused the differences in the groups but that there was a difference in attitudes between 1974 and 1981.

Only the variable having a relative or friend who is disabled showed a variable and an interaction effect. This suggested that, besides having a more positive attitude in 1981, subjects who had personal contact (as opposed to professional or no contact) with a disabled person had a more positive attitude than those who did not.

In considering the results which occurred but were not significant, there was an improvement between the pre and post-test means of all groups except the 1974 control. This suggests that there was some influence as the result of the instruction.

Conclusions

It was not possible to conclude that there was a statistically significant difference between modes of instruction in changing attitudes of teachers and pre-service teachers towards disabled persons. There was, however, a difference between the attitudes of subjects in 1981 and those in 1974, which appeared to be because of external influences and not the make-up of the group. The only demographic variable which showed a significant influence was having a relative or friend who was disabled.

Since this was significant and work experience was not, it might be concluded it is personal and not professional contact which influences positive attitudes. It appeared that for this subpopulation, occupation, grade level taught, sex, age, work experience or frequency of contact were not influential in determining attitudes.

Since the highest mean group score was 127 and the highest possible on the ATDP is 180, there is still room for improvement. If personal contact in a social situation results in an improved attitude, then it will be available to include opportunity for such contact in courses which are attempting to improve attitudes of teachers and pre-service teachers.

Further research is needed to determine what quality and quantity of personal contact would be most influential. Further research could also determine if the improved attitudes of the 1981 group are generalizable to the rest of society, and if so, which events in the past ten years have most affected attitudes. Contact, again, could be the key. That is, more disabled persons are taking part in the main stream of society and this integration is providing people with an opportunity to get to know disabled people as individuals. Being able to see beyond the disability and see the person first may help to break down stereotypes and change attitudes towards disabled persons.

Recommendations

1. There needs to be further research to determine if the attitudes of the 1981 group in this study are reflective of more positive attitudes in society.
2. There needs to be research to determine which types of events that occurred during the Seventies had the most influence on people's attitudes.
3. There needs to be further research in the area of contact. This could include the type of relationship, the nature of the disability, and the frequency of contact which affects attitudes.
4. This study could be repeated using equal-sized groups, having the subjects identify themselves, and having only one time period for data collection.
5. Since it is possible there is a difference in attitudes among counsellors and administrators, as opposed to teachers, and since the attitudes of these people have an important role in the identification and integration of disabled children in the school system, there needs to be research which measures the attitudes of these other professionals.
6. An opportunity for close personal contact should be included in an Education course which hopes to create positive attitudes towards the disabled.

7. Video tape presentations can be considered as effective as live presentations in changing attitudes towards the disabled.

APPENDIX A

ATTITUDE TOWARD DISABLED PERSON'S SCALE

1. Occupation: (check one)

- Teacher
 Counselor
 Administrator
 Other (specify) _____

2. Grade level (if an educator)

- Primary
 Elementary
 Secondary
 Other (specify) _____

3. Age _____

4. Sex: Male _____ Female _____

5. Have you had a relative or friend who was disabled?

Yes _____ No _____

6. Have you taken Education 3220? Yes _____ No _____

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one. Write +1, +2, +3, or -1, -2, -3; depending on how you feel in each case.

- | | |
|-------------------------|----------------------------|
| +3: I agree very much | -1: I disagree a little |
| +2: I agree pretty much | -2: I disagree pretty much |
| +1: I agree a little | -3: I disagree very much |

Form A

- _____ 1. Disabled people are often friendly.
 _____ 2. Disabled people should not have to compete for jobs with physically normal persons.

- _____ 3. Disabled people are more emotional than other people.
- _____ 4. Most disabled persons are more self-conscious than other people.
- _____ 5. We should expect just as much from disabled as from non-disabled persons.
- _____ 6. Disabled workers cannot be as successful as other workers.
- _____ 7. Disabled persons usually do not make much of a contribution to society.
- _____ 8. Most non-disabled people would not want to marry anyone who is physically disabled.
- _____ 9. Disabled people show as much enthusiasm as other people.
- _____ 10. Disabled persons are usually more sensitive than other people.
- _____ 11. Severely disabled persons are usually untidy.
- _____ 12. Most disabled people feel that they are as good as other people.
- _____ 13. The driving test given to a disabled person should be more severe than the one given to the non-disabled.
- _____ 14. Disabled people are usually sociable.
- _____ 15. Disabled persons usually are not as conscientious as physically normal persons.
- _____ 16. Severely disabled persons probably worry more about their health than those who have minor disabilities.
- _____ 17. Most disabled persons are not dissatisfied with themselves.
- _____ 18. There are more misfits among disabled persons than among non-disabled persons.
- _____ 19. Most disabled persons do not get discouraged easily.
- _____ 20. Most disabled persons resent physically normal people.

- _____ 21. Disabled children should compete with physically normal children.
- _____ 22. Most disabled persons can take care of themselves.
- _____ 23. It would be best if disabled persons would live and work with non-disabled persons.
- _____ 24. Most severely disabled people are just as ambitious as physically normal persons.
- _____ 25. Disabled people are just as self-confident as other people.
- _____ 26. Most disabled persons want more affection and praise than other people.
- _____ 27. Physically disabled persons are often less intelligent than non-disabled ones.
- _____ 28. Most disabled people are different from non-disabled people.
- _____ 29. Disabled persons don't want any more sympathy than other people.
- _____ 30. The way disabled people act is irritating.

APPENDIX B

ATTITUDE TOWARD DISABLED PERSON'S SCALE

1. Occupation: (check one)

Teacher
 Counselor
 Administrator
 Other (specify) _____

2. Grade level (if an educator)

Primary
 Elementary
 Secondary
 Other (specify) _____

3. Age _____

4. Sex: Male _____ Female _____

5. Have you had a relative or friend who was disabled:

Yes _____ No _____

6. Have you taken Education 3220? Yes _____ No _____

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one. Write +1, +2, +3, or -1, -2, -3; depending on how you feel in each case.

+3: I agree very much	-1: I disagree a little
+2: I agree pretty much	-2: I disagree pretty much
+1: I agree a little	-3: I disagree very much

Form A

- _____ 1. Disabled persons are usually friendly.
- _____ 2. People who are disabled should not have to pay income taxes.

- _____ 3. Disabled people are no more emotional than other people.
- _____ 4. Disabled people can have a normal social life.
- _____ 5. Most physically disabled persons have a chip on their shoulder.
- _____ 6. Disabled workers can be as successful as other workers.
- _____ 7. Very few disabled persons are ashamed of their disabilities.
- _____ 8. Most people feel uncomfortable when they associate with disabled people.
- _____ 9. Disabled people show less enthusiasm than non-disabled people.
- _____ 10. Disabled people do not become upset any more easily than non-disabled people.
- _____ 11. Disabled people are often less aggressive than normal people.
- _____ 12. Most disabled persons get married and have children.
- _____ 13. Most disabled persons do not worry any more than anyone else.
- _____ 14. Employers should not be allowed to fire disabled employees.
- _____ 15. Disabled people are not as happy as non-disabled ones.
- _____ 16. Severely disabled persons are harder to get along with than those with minor disabilities.
- _____ 17. Most disabled people expect special treatment.
- _____ 18. Disabled persons should not expect to lead normal lives.
- _____ 19. Most disabled people tend to get discouraged easily.
- _____ 20. The worst thing that could happen to a person would be for him to be very severely injured.
- _____ 21. Disabled children should not have to compete with non-disabled children.

- _____ 22. Most disabled people do not feel sorry for themselves.
- _____ 23. Most disabled people prefer to work with other disabled people.
- _____ 24. Most severely disabled persons are not as ambitious as other people.
- _____ 25. Disabled persons are not as self-confident as physically normal persons.
- _____ 26. Most disabled persons don't want more affection and praise than other people.
- _____ 27. It would be best if a disabled person would marry another disabled person.
- _____ 28. Most disabled people do not need special attention.
- _____ 29. Disabled persons want sympathy more than other people.
- _____ 30. Most physically disabled persons have different personalities than normal persons.

APPENDIX C

Biographical Data Form 1981

(Form used for the collection of biographical data in both the pre and post-tests in 1981. It was followed with instructions and form A or B as was used in 1974).

1. Occupation: (check one)

- Teacher
 Counsellor
 Administrator
 Other (specify) _____

2. Grade level (if an educator):

- Primary
 Elementary
 Secondary
 Other (specify) _____

3. Age _____

4. Sex: Male _____ Female _____

5. Have you had a relative or friend who was disabled?

Yes _____ No _____

(a) What is the nature of disability? _____

(b) What is the frequency of contact?

- Daily _____
 Once a week _____
 Once a month _____
 Once a year _____

(c) Have you had previous experience working with someone with a disability?

Yes _____ No _____

6. Have you taken Education 3220? Yes _____ No _____

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