

AN ABSTRACT OF THE THESIS OF

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The central purpose of this study was to examine the attitudes of non-disabled college students toward their developmentally disabled peers attending the same college. Specifically, it examined the attitudes of non-disabled students toward the developmentally disabled students in the Transitional/Vocational Program the Fairview campus of Fairview College, Alberta, Canada.

Objectives included: 1) to review literature related to attitudes toward the developmentally disabled, 2) to identify and to present to the students an instrument to assess attitudes toward developmentally disabled adult students, and 3) to analyze the results by comparing selected groups of

students to each other, by certain demographic variables and to the norms established for the instrument.

Information received from the respondents was analyzed using analysis of variance and t-tests. Based on the data collected and the review of the literature, the following conclusions and recommendations were made:

Conclusions:

1. From the review of the literature it is apparent that attitudes toward the developmentally disabled are often less than favorable.
2. Non-disabled students at Fairview College appear to regard their developmentally disabled peers as significantly different from themselves and that this difference is of a negative valence.
3. The developmentally disabled students apparently hold a significantly more positive attitude towards themselves than that held by their non-disabled peers towards the developmentally disabled at Fairview College. This finding supports previous research in this area. The A.T.D.P. authors have established separate and more positive norms for the disabled.

Recommendations:

1. Post-secondary institutions that provide special training programs for the developmentally disabled should examine the attitudes of important associational groups within the college community.
2. A comprehensive intervention should be designed and instituted where required, that is targeted at improving the attitudes of the non-disabled toward the developmentally disabled.

3. Such an intervention should include: a comprehensive information package on the transitional/vocational program and its goals and participants; opportunities for structured contact between the disabled and non-disabled where abilities and equality are stressed; and continued social skill training that enhances the developmentally disabled student's ability to deal with ambivalent and uncertain feelings in themselves and others.

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Developmentally Disabled Peers

by

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## TABLE OF CONTENTS

Chapter I INTRODUCTION	1
Statement of the Problem	5
Purpose of the Study	8
Significance of the Study	9
Limitations and Delimitations of the Study	10
Definition of Terms	11
Summary	13
Chapter II REVIEW OF RELATED LITERATURE	14
Introduction	14
Definition of Attitude	15
Attitude Formation and Change	16
Related Studies: Mentally Retarded	20
Related Studies: Demographic Variables	45
Related Studies: Changing Attitudes	53
Summary	59
Nature and Future of Research	65
Chapter III METHODOLOGY	67
Sample	67
Instrumentation	71
Method of Data Collection	74
Hypotheses	75
Treatment of the Data	78
Summary	80
Chapter IV PRESENTATION OF THE FINDINGS	82
Introduction	82
Contrasting Group Means of Fairview College Students With A.T.D.P. Form B Norms	83
Contrasting Group Means of Fairview College Students With Each Other	91
Demographic Data	96
Absolute Versus Relative Questions	98
Chapter V SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	103
Summary	103
Selected Findings	106
Conclusions	107
Recommendations for Action	115
Recommendations for Further Study	118
Bibliography	122
Appendices	130

## List of Tables

<u>Table</u>		<u>Page</u>
1	Types of Respondents	69
2	Demographic Profile of the Population (N=341)	70
3	Pooled Variance Estimate - Hypothesis I	84
4	Pooled Variance Estimate - Hypothesis II	85
5	Pooled Variance Estimate - Hypothesis III	86
6	Pooled Variance Estimate - Hypothesis IV	87
7	Pooled Variance Estimate - Hypothesis V	88
8	Pooled Variance Estimate - Hypothesis VI	89
9	Pooled Variance Estimate - Hypothesis VII	91
10	Pooled Variance Estimate - Hypothesis VIII	92
11	Pooled Variance Estimate - Hypothesis IX	93
12	Pooled Variance Estimate - Hypothesis X	94
13	Analysis of Variance - Hypothesis XI	97
14	T-test - Absolute Versus Relative Questions	99
15	Pooled Variance Estimate - Absolute Questions	100
16	Pooled Variance Estimate - Relative Questions	101
17	Summary of Findings Related to the Hypotheses	102



ATTITUDES OF COLLEGE STUDENTS TOWARD  
DEVELOPMENTALLY DISABLED PEERS

CHAPTER I

INTRODUCTION

There are no tried-and-true principles to simplify the task of learning how to live with a handicap or disability. Success, to a large degree, depends on the physiological, psychological, and emotional makeup of the handicapped person and the support and encouragement that he/she receives from family, friends, and others. Unfortunately, the history of the handicapped in society has been sad. Throughout time, handicapped people have been viewed as inferior, as outcasts from society, and as people punished for their sins or possessed by the devil. (Barker, 1953, p. 246)

Only in recent history has society begun to recognize disabled people as human beings, more alike than dissimilar from the rest. This recognition has arisen largely through study and legislation.

Within the last twenty years, increased attention has been directed specifically to attitudes toward disabled people. Despite this additional attention, little research has been conducted on attitudes toward the mentally retarded (Efron and Efron, 1967). What research does exist on

attitudes toward disabilities is often inconsistent in its findings (Begab, 1970 and Gottlieb, 1975).

There is agreement among researchers, however, that people with disabling conditions are regarded as different and different is often less acceptable (Yuker, Block and Youngg, 1970). The stigma of mental retardation is in itself a handicapping condition (Hollinger and Jones, 1970).

Available research has helped to substantiate the need for recognizing the potential of the disabled and the right for them to pursue that potential. Studies have been conducted on the mainstreaming movement and related questions in grade schools (Strichart and Gottlieb, 1982). There is a need for further research on attitudes toward adult students with mental disabilities.

The attitude towards and treatment of the developmentally disabled have varied greatly over the course of history. Prior to the turn of the twentieth century, mental retardation was largely considered to be hereditary. With the advent of intelligence testing during World War I and the realization that a considerable number of servicemen were functioning at a low level of intelligence, mental retardation received wide public attention. The societal notion of the mentally retarded as dependent non-contributors began to be questioned (Begab, 1975).

Still, the studies conducted pointed to genetics as the cause for mental retardation. This pervasive conclusion coupled with Social Darwinism, as espoused by Herbert Spencer, resulted in compulsory sterilization of the mentally retarded in 12 states by 1915. The practice of sterilization, in concert with institutionalization, effectively removed from the public eye the subject of mental retardation until the next great war.

Once again, when one-third of the males were rejected as unfit for military service largely because of intellectual handicap, serious questions arose in regard to the nature of mental retardation and the treatment of the retarded. With the end of the war came the need for massive rehabilitation of veterans and a new period of a more humanistic attitude.

In this enlightened and receptive period, lobbying groups, such as the American Association on Mental Deficiency, effectively pursued government agencies to establish funds for research as well as for the improvement of services for the mentally retarded. President Kennedy's address to Congress on mental illness and mental retardation resulted in the enactment of Public Law 88-164 and 88-156 which established the basis for an escalating budget for the study of mental retardation (Begab, 1975).

Over the course of the last twenty years, societal perceptions have been substantially altered toward the developmentally disabled. As a result of the research, there has developed a growing awareness of the potential capabilities of all types of disabled people. Concomitant with this new level of understanding has been a greater acceptance of the desire and right of disabled people to pursue their potential in as normal a fashion as is possible.

This goal of "normalization", as the movement came to be called, began to receive official sanction in the early 1970's (Shennan, 1984). In Britain, a 1971 White Paper addressed the issue of hospitalization for the mentally retarded and proposed alternate residential care. In the United States, Public Law 94-142 (the Education for All Handicapped Children Act) was passed providing appropriate education for all children regardless of the severity of the handicap. Normalization was sanctioned by Congress when it enacted the Bill of Rights (the Developmental Disabilities Amendments of 1978) in the form of Public Law 95-602. It established the right to appropriate treatment, services and habilitation that would allow for maximization of potential in a setting with as few restrictions on rights as possible.

A court decision in Alberta, Canada in 1978 gave emphasis to the rights of the disabled to appropriate

education to meet their special needs. Before preparations for the International Year of the Disabled in 1981, little involvement in providing services to the developmentally disabled had been undertaken. In 1979, the Department of Advanced Education and Manpower prepared a proposal which provided for the establishment of transitional/vocational programs for the developmentally disabled adult student. The overall goal of these programs was to meet the vocational training needs of educably mentally retarded adults by providing opportunities for them to develop their skills and abilities to their full potential. Graduates should be able to participate more fully and independently in employment, social activities and community life. An examination of the attitudes of college students toward their developmentally disabled peers enrolled in the Transitional/Vocational Program currently operating at Fairview College will serve as the focus for this study.

#### Statement of the Problem

The normalization movement has been accompanied by efforts to study both the factors affecting the integration of the disabled into mainstream society and the ramifications of doing so (Greenburg, 1984). Numerous studies have been conducted on mainstreaming, labelling of the mentally

retarded, peer relations, and attitudes of the teachers and the community in general (Gottlieb, 1975). "Nothing is more essential to the eventual success of the community mental retardation services movement than the good will, acceptance and support of the general public" (Kastner, Reppucci and Pezzoli, 1979, p. 137).

The assumed importance of studies of attitudes toward the disabled is, then, that when attitudes are favorable, the disabled will receive improved and enlightened treatment. When attitudes remain or become unfavorable, the disabled will continue to be misunderstood, mistreated and suffer more than they may have to (Gottlieb, 1975).

In order to improve attitudes there must be an understanding of precisely what an attitude is; what attitudes appear to exist toward the disabled; which demographic variables appear to act as correlates; and which strategies for change have proved to be effective or ineffective. The review of the literature will address these issues.

Rokeach's theoretical schema is provided in order to conceptualize the relationship between attitudes and other internalized predispositions to behavior including: self-concept, values, cognitions of one's own behavior and the behavior, attitudes and values of others (Ashmore, 1975).

A systematic review of related studies compiled, to date, is also a prerequisite to formulating an effective attitudinal research project. Studies on attitudes toward other disabled or disadvantaged groups are applicable (Ashmore, 1975) as they, too, are concerned with related subjects such as: labelling, mainstreaming, and relationships with peers and community.

Several studies have been conducted on demographic variables which appear to act as correlates to attitude formation and change and, therefore, should also be considered in the research (Yuker, Block and Young, 1970 and Gottlieb, 1975). Examples of variables which have been identified and studied in concert with attitude include: age, sex, level of educational attainment and previous exposure or contact with the object referent group.

A variety of efforts have been undertaken in the past in an attempt to alter unfavorable attitudes toward specific disabilities. Often these studies have predicted that exposure to the mentally retarded will yield a more positive attitude. This assumption has been purported and promulgated since the movement to normalization began. Studies reflecting this assumption have often met with little or a negative change in attitudes (Gottlieb, 1975). It is important that

the same questionable assumptions are not repeated and they will, therefore, be addressed in the literature review.

The Transitional/Vocational Program at Fairview College has been in operation for approximately ten years. There are a total of nine such programs in existence at post-secondary institutions in the Province of Alberta. At this juncture, there has not been a formally conducted research study employing a standardized instrument to measure the attitude towards the developmentally disabled by their non-disabled peers.

From a sound theoretical base, an attitudinal study is required which is guided by the experience of related studies and takes into consideration the demographic variables as well as previous efforts to alter the attitudes toward the mentally handicapped.

#### Purpose of the Study

The purpose of this study was to examine the attitudes of non-disabled college students toward their developmentally disabled peers attending the same college. Specifically, it examined the attitudes of non-disabled students toward the developmentally disabled students in the Transitional/Vocational Program at the Fairview Campus of Fairview College, Alberta, Canada. The major objectives of the study were to:



1. Review literature related to attitudes toward the developmentally disabled adult student.
2. Identify and modify an existing instrument to assess attitudes toward the developmentally disabled adult student.
3. Present the instrument to students at Fairview College.
4. Examine the students' attitudes using the methodology developed.
5. Utilize findings to prepare general recommendations for the promotion of positive attitudes toward the developmentally disabled.

#### Significance of the Study

To the extent that mentally retarded children feel competent and sense that they are well liked by others, they will have healthy social and emotional development. If, on the other hand, mildly retarded children feel incompetent and believe that they are not well liked by peers, there could be some difficulty in their socioemotional development. (Strichart and Gottlieb, 1982, p. 37)

There is both a need to identify the attitudes of those connected with initiatives that provide for the integration and education of the mentally retarded and a need to conduct research which would contribute to the cohesion of the findings of studies which have been previously conducted.

Gottlieb (1975 and 1976) attributes the inability to effectively synthesize the information collected in attitude studies to the failure of researchers to precisely define the

characteristics of the object referent. Results have been clearly affected by a lack of articulation and control of: the severity of the retardation, the chronological age of the subject, the lack of definition of the specific kind of disability, the setting in which the study occurred, demographic variables, et cetera.

The results of this study of a clearly defined group in a real and particular situation (or college Transitional/Vocational Program) will address Gottlieb's concern for precisely defined object referents. Assumptions from previously validated research on related topics represent the theoretical base for this study. It will also utilize these theoretical underpinnings in the design of the study by incorporating demographic variables which have been identified as probable correlates of attitude. It is anticipated that this information will contribute to the synthesis of an often contradictory body of knowledge. Most of the research previously conducted has been child related while the focus of this study will be the attitudes of adult students toward their developmentally disabled peers.

#### Limitations and Delimitations of the Study

1. All of the students surveyed were in attendance at a small, technical/vocational, rural, residential college.

2. The data gathered for the study were self-reported in nature and are, therefore, limited to the honesty and self-awareness of the individuals included in the sample.
3. The results of the study were limited to the ability of the Attitude Toward Disabled Persons - revised scale to measure the attitudes of normal students toward their developmentally disabled peers.

### Definitions of Terms

Attitudes: Many different aspects of the concept of attitude have been emphasized in definitions offered by a number of theorists. The term can be generally defined as a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a certain object. The use of the term attitude in this study refers to the results of the Attitude Towards Disabled Persons - revised scale.

Demographic Factors: Demographic factors includes information pertaining to the respondent's: sex, age, level of educational attainment, and previous contact with developmentally disabled people.

Developmental Disability: A disability attributable to mental retardation, cerebral palsy, epilepsy, or another neurological condition of an individual which is closely related to mental retardation or which requires similar treatment, and which originates in childhood, is likely to

continue, and constitutes a substantial handicap to the individual (Grossman, 1973, p.132).

Developmentally Disabled and Mildly Mentally Retarded:

The terms developmentally disabled and mildly mentally retarded were used synonymously for the purposes of this study.

Long-Term Students: Long-term students were defined, for the purposes of this study, as certificate and diploma students who attend from four months to two academic years.

Object Referent: Object referent refers to a precise description of the population that is the object of the attitude expression, (Gottlieb and Superstein, 1975). In this study the object referent was the developmentally disabled adult students enrolled in the Transitional/Vocational Program at Fairview College.

Mental Retardation: Mental retardation "refers to significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior, and manifested during the developmental period" - American Association on Mental Deficiency (Grossman, 1973).

Short-Term Students: Short-term students were defined for the purposes of this study as those who attend full-time but for a period of four months or less. Most were

apprenticeship students who attended for six to eight weeks each year for three to four years.

Transitional/Vocational Programs in Alberta:

Transitional/Vocational Programs provide employment preparation training for adults with a developmental disability. These programs are unique in that they combine both work skills training and work experience with vocational, academic, and independent living skill courses to enable students to become competitively employed and to independently live (Alberta Advanced Education, 1984).

Summary

In summary, this research explored the attitudes of the student body of a small college campus toward their developmentally disabled peers. Much of the research conducted previously has focused on child related issues, while this study was conducted with adult subjects. The study also contributed to the cohesion of the often contradictory research findings by focusing the object referent.

CHAPTER II  
REVIEW OF THE LITERATURE

Introduction

The review of related literature was designed to provide an overview of attitude research as it pertains to the developmentally disabled. The chapter will begin with a definition of the term 'attitude' followed by a brief discourse on a theory of attitude formation.

Related studies on attitudes toward the mentally retarded will next be considered in light of the following concepts: mainstreaming, labelling, peer relations, and attitudes of educators and the community in general.

Many studies have been undertaken in an effort to isolate the variables that affect attitudes toward the disabled. A review of the literature will consider previously conducted studies on: age, sex, level of educational attainment and the quantity and kind of previous exposure to the disabled, as they affect attitude formation and change.

Studies on attempts to alter attitudes toward the disabled will complete the review of the literature.

### Definition of Attitude

Many definitions of the term 'attitude' exist. Most social scientists would agree that it is a predisposition to think, feel, perceive, and behave towards a given concept. Attitude as defined by Shaw and Wright (1967) refers to:

... a relatively enduring system of affective, evaluative reactions based upon and reflecting the evaluative concepts or beliefs which have been learned about the characteristics of a social object or class of objects. (p. 10)

Attitudes, then, are internal but evaluative of something external. They vary in intensity from positive to negative along a continuum. They are stable and lasting and are interrelated with other attitudes and values (Ashmore, 1975).

Rokeach (1973) differentiates between the concepts of attitude and value by stating that:

An attitude refers to an organization of several beliefs around a specific object or situation. A value, on the other hand, refers to a single belief of a very specific kind. It concerns a desirable mode of behavior or end state that has a transcendental quality to it, guiding actions, attitudes, judgements, and comparisons across specific objects and situations and beyond immediate goals to more ultimate goals. (p. 18)

### Attitude Formation and Change

Saying that a person has a negative attitude towards the developmentally disabled, for instance, leads one to expect that the person: has negative feelings that may be articulated, perceives disabled as different, and may respond in an observable and quantifiable way (Rosenberg and Hovland, 1960).

Beliefs, attitudes, values, self-concept and behavior are all integrally related concepts. Rokeach (1973) has proposed a cognitive system of ten hierarchically arranged systems for conceptualizing this relationship. Self-concept is the most central to the belief system in this model, followed by desired end states (terminal values), desired modes of behavior (instrumental values), and organized sets of attitudes and individual attitudes. The remaining subsystems in descending order of being central to the belief system include cognitions about: one's own behavior, significant others' attitudes, significant others' values or needs, significant others' behavior and behavior of non-social objects.

This hierarchical arrangement implies that the higher elements organize the lower ones and that the higher order elements will be more stable and resistant to change. Change could be brought about through the lower orders if motivation to change is present. Dissonance between attitudes and cognitions about behavior and self-concept promote motivation.



Dissonance is a central concept in much of the theoretical work in developmental psychology (Erikson, 1959; Kohlberg, 1969). Each of Erikson's eight stages of development includes distinctive issues, crises and required developmental tasks while Kohlberg's educational model deliberately provides students with disequilibrizing moral experiences and dilemmas to evoke change and growth. Ashmore (1975) commented that two types of intervention strategies have been developed based on dissonance.

1) Clinical psychologists and psychiatrists have sought to change personality through highlighting or bringing into awareness contradictions involving self-conceptions; 2) social psychologists (particularly consistency theorists) have concentrated on attitude change using inconsistencies involving attitudes." (pp. 162-163)

It is Rokeach's assumption that inconsistency will yield change only if the experience of dissatisfaction with the self-concept occurs. This may take the form of either perceived incompetence or immorality.

In summation, the Rokeach schema emphasized: 1) that attempts to change attitudes must take into consideration how these attitudes are related to values and self-concept; 2) the belief that change can be perceived and initiated anywhere in the belief system; and 3) the very central roles of self-concept and dissonance in attitude formation and change.

Ashmore (1975) emphasized the importance of the affective side to attitude formation and change and how feelings combine with beliefs in setting the stage for behavior. He proposed that there are three affective-cognitive syndromes which can be identified and associated with negative intergroup attitudes: 1) beliefs of inferiority with feelings of contempt; 2) feelings of anger or fear with threatening images; and 3) beliefs of non-normalcy, strangeness which may indicate the lack of a belief system thus promoting feelings of uneasiness.

More recent conceptualizations of attitude have considered multidimensional approaches to the origins of attitudes. Livneh (1986) reviewed over 150 pieces of research in an effort to identify the dimensions on which the origins of negative attitudes toward people with disabilities may be conceived. He proposed six:

- 1) Sociocultural-Psychological--The sociocultural end of the dimension is associated with the pervasive cultural and social standards (i.e.: gainfully employed or physically attractive) while the other end is represented by psychodynamic and developmental experiences (i.e.: ambivalent feelings yielding threat which in turn may cause denigration of the attitude object or fear of social ostracism through guilt by association).
- 2) Affective-Cognitive--Emotional reactions occupy one end of the continuum (i.e.: castration anxiety or guilt) while intellectual reactions

are on the other (i.e.: lack of self-insight or ambiguity which may be caused by feeling unsure of what to do in the presence of a disabled person).

- 3) Conscious-Unconscious--Attitudinal roots may be conscious (i.e.: full or partial awareness) to completely unconscious (i.e.: certain disabilities were an act of fate while others were somehow self-induced).
- 4) Past experience-Present situation--In the fourth dimension, the causes of negative attitudes include those stemming from early influences (i.e.: a parent's caution of "Look what happened to him because he/she did not do what they were told").
- 5) Internally-originated-Externally-originated--On one end of this dimension lies the observer-related attitudinal sources (i.e.: both demographics and personality variables such as ethnocentrism, authoritarianism, and internal-external focus of control) while at the end can be found actor-related sources (i.e.: variables of the disabled person being observed.)
- 6) Theoretical-Empirical--This last continuum orders the origins of negative attitudes from those of a theoretical nature (i.e.: personality variables like death anxiety) to those based on research (mostly correlational results).

### Related Studies: Mentally Retarded

According to Yuker, Block and Young (1970) early research on attitudes toward disabled people was highly subjective and often based on experiences of those associated with the disabled. Many opinions that had been stated in this early research came to form the basis of questionnaires with questionable validity (Goldstein, 1978).

The amount of research directed to attitudes toward various disabilities, including mental retardation, is escalating. It is also, as a rule, being conducted in a more objective and scientific fashion than in early research. Still, however, the results are often contradictory.

Gottlieb (1976) attributed the inability to effectively synthesize the information collected in attitude studies to the failure of researchers to precisely define characteristics of the object referent. Results are clearly affected by such factors as the severity of retardation and the chronological age of the mentally retarded subject as well as the way in which the concept is defined and presented.

A sound research design, a reliable and valid instrument, and well defined object referents are some of the important considerations necessary in scrutinizing the related literature.

## Mainstreaming

During the 1970's, legislation was passed in Britain, the United States and Canada which provided for normalization of disabled individuals and rights to appropriate treatment, services and habilitation that would allow for maximum realization of potential (Shennan, 1984). In concert with this effort has been a movement to study the effects of integration of the disabled into mainstream society (Greenburg, 1984). Various approaches have been employed to facilitate mainstreaming, including: revised teacher education programs, school reorganization, and various types of resource rooms (Harasymiw and Horne, 1976) but with somewhat limited success (Sabornie, 1985; McCann, Semmel and Nevin, 1985; and Greenburg, 1984).

Specifically, in the United States, the Education For All Handicapped Children Act of 1975 (P.L. 94-142) stipulates safeguards and requirements. The two primary mandates are the Individualized Education Program (I.E.P.) and the Least Restrictive Environment (L.R.E.). McCann, Semmel and Nevin (1985) in reviewing the literature conclude that the I.E.P. has evaluation procedures of a questionable value. It is expensive and time-consuming, may cause delays in providing service, often does not address the students' needs and the

I.E.P. process and documents often are of little assistance in providing appropriate instruction.

The L.R.E. provision indicates that to the maximum extent appropriately possible, disabled students should be educated with their non-handicapped peers. This mandate is based on the much disputed assumption that disabled students will benefit academically and socially from increased contact with non-disabled students.

Again, according to McCann, Semmel and Nevin, the results are equivocal. Academic success depends on several factors including the degree of mental retardation, the support services, and the quality of instruction. The social success of the student depends on numerous situational variables as well, including: quality of leadership, equality of status, ratio of disabled to non-disabled, amount of individualized instruction available, cohesiveness of peer groups, et cetera. Social acceptance is not necessarily enhanced through unstructured exposure, as will be discussed in more depth in the section entitled "Related Studies: Changing Attitudes." Sabornie (1985) concludes:

For the exceptional children who are socially accepted by their regular class peers, mainstreaming should not be questioned if the environment is appropriate also for their academic and later occupational adjustment needs. These students, unfortunately, appear to be in the minority. Individual children with special needs--

probably the majority of handicapped students--do not appear to be appropriately served in the social milieu of mainstream classrooms. (p. 15)

The results of Public Law 94-142 have been contradictory in related study findings. The disadvantages experienced have often resulted in the practice of reverse mainstreaming (the placing of non-disabled students in programs designed for the handicapped to act as models and/or peer tutors). Study results on the understanding and acceptance of mainstreaming also vary between the report by McCann, Semmel and Nevin (1985) and the 1984 Annual Report to Congress by D. Greenburg.

It can, however, be said with confidence, that Public Law 94-142 and the resulting effort to mainstream has focused the normalization movement and promoted formal study on important related issues such as labelling. Greenburg observed another benefit of the mainstreaming initiative when he concluded,

Despite the sometimes difficult group and individual confrontations and negotiations, more public attention has raised the general level of awareness concerning the uniqueness and potential of some previously disenfranchised members of society ... (p. 206).

Siperstein (1986) characterized the success of the mainstreaming initiative as satisfactory in terms of physical integration, in need of work instructionally (preparation of the teacher) and as a failure in regard to social integration. He confirmed that children perceive the term mentally retarded

as often indicating Down's Syndrome, severe retardation and the children as having limited emotions. This kind of perception leads if not to rejection then to neglect, which Siperstein claimed in either case, places the child as isolated from social experiences and at risk.

### Labelling

Equally as controversial and responsible for focusing research and the public attention on the subject of mental retardation has been the debate over labelling the mentally retarded (Strichart and Gottlieb, 1982). One school of thought considers disabling conditions and their labels to be personally discrediting and may be the cause of unhappy or disastrous social consequences. The other line of thinking suggests that the condition and accompanying labels may, in fact, shield the individual from unpleasant social interaction (Farina, Thaw, Felner and Hust, 1976).

A study conducted by Jones, Gottfried, and Owens (1966) is often cited in the literature as one of many studies where non-retarded subjects' attitudes were less than favorable concerning the mentally retarded. In fact, in this study the mentally retarded were rated less favorably than the other stigmatized groups in a hierarchy of disabilities. In a more recent study on the label "institutionalized", Gibbons and



Gibbons (1980) found that while subjects discerned no difference on attitude traits, a preference was demonstrated on social distance items such as "work with", "live near", "have a friend".

In a comprehensive review of the literature, MacMillan, Jones and Aloia (1974) found no pervasive evidence to support the contention that a label by itself promotes negative attitudes or treatment of the disabled. Farina, Thaw, Felner and Hust (1976) found evidence to support the shielding effect of the label "mentally retarded". An experiment was conducted where a group of college students inflicted what they thought were electrical shocks, as part of a "teaching process", on confederates playing the roles of normal, mentally ill and mentally retarded. The shocks to the mentally retarded were shorter and less intense than those inflicted on the other two confederates.

Other studies have concluded that labels do not affect attitude scores one way or the other. Gottlieb (1974) investigated the influence of the label "mentally retarded" by showing a video tape of a target actor being either a competent speller or not and as being mentally retarded or not. Although some of the 40 fourth graders studied considered competence in their ratings, the label itself was not found to adversely influence the attitude formation.

In a reaction to MacMillan, Jones and Aloia (1974), Rowitz (1974) commented on some of the inherent difficulties in studying the subject of labelling. He believed that a label does indicate deviance and suggested inferiority or unfitness, morally or socially. His contention was that an individual is not officially retarded until so labelled. This official label may exist in school or work settings but not in others, such as in the home community. Guskin (1974) noted, there is no uniform method of labelling. Mental retardation cannot be simply defined as it may be described intellectually, behaviorally or in terms of social interaction.

As was noted in the introductory remarks of this section, it is important to carefully define the object referent in attitudinal studies. Jaffe (1966 and 1967) demonstrated this in studies which compared the attitudes of high school students toward the label mentally retarded versus a verbal sketch which described the person's appearance, adjustment, marital status, job, et cetera. Significantly more positive responses were found in the evaluation of the sketches as opposed to the term mentally retarded. Jaffe concluded that more favorable attitudes might result if other traits and abilities are presented along with the disability.

A study by Siperstein, Budoff and Bak (1980) supported the need for precision in definition when they contrasted the effects of the labels "mentally retarded" with "retard". The fifth and sixth grade children reacted more favorably to the child labelled mentally retarded. In fact, they had the most negative attitudes toward a child labelled "retard" who appeared to be "normal".

Semmel and Dickson (1966) administered an instrument to 457 college students in an effort to evoke connotative reactions to various disability labels. Differences were found between the disability labels but also between: 1) differently described social psychological contexts (situations), 2) certain college majors and 3) reported prior experience with disabled. Further discussion on selected variables will occur in "Related Studies: Demographic Variables" (p. 36).

There are other conclusions which can be drawn from the literature. Certainly, mislabelling the mentally retarded will have direct and negative consequences. Using a label, if denigrating at all, may suppress performance (MacMillan, Jones and Aloia, 1974). It is most important to be specific and accurate in any definition of disability.

Gottlieb (1975), in addressing the subject of labelling, referred to other studies which demonstrated that only a small

percentage of the population distinguished between levels of mental retardation and that the term generally denoted images of severe retardation represented by a Down's Syndrome or brain damaged individual. When a differentiation was made and the developmentally disabled subject was referred to as a "slow learner", "mildly mentally handicapped" or in a "special education project"; parents, teachers, peers and the community were all likely to view the individual much more favorably (Hollinger and Jones, 1970 and Belinkoff, 1960).

#### Attitudes of Children

In their review of the literature on the attitudes of children toward their mentally handicapped peers, Frith and Mitchell (1981) claimed that it was evident from studies conducted that the understanding and acceptance levels are largely inadequate. They stated:

Those investigators who have reviewed the attitudes of nonhandicapped students relative to appropriate educational placement of the mildly retarded have reported various results across a myriad of variables. Investigators would probably agree, however, that the self-concept of mildly retarded individuals significantly depends on the attitudes of their nonhandicapped peers regardless of the type of educational placement. (p. 82)

Frith and Mitchell (1981) proposed that there are certain other summary statements that can be made and supported by the

literature. They purported that mildly retarded elementary students were more satisfied with their placement in special classes and the classification of mental retardation, than older mildly retarded students.

A study by Bruininks, Rynders and Gross (1974) administered 1234 sociometric questionnaires to non-retarded peers to explore attitude differences between urban and suburban settings. They determined that while mildly retarded students from urban settings were better accepted than non-retarded when rated by same sex non-retarded peers, mildly retarded suburban children were less accepted when rated in the same way.

Strauch (1970) concluded that significant prior contact with the mentally retarded did not appear to increase positive attitudes. His 1970 study compared the attitudes of 62 adolescents who had significant interaction with 62 adolescents who had not. This phenomenon is often explained by the assumption that unstructured contact may reinforce negative stereotypes of the retarded (Frith and Mitchell, 1981).

Peterson (1975) studied 420 non-retarded students in grades five through eight to determine which of several factors might be related to the attitudes toward their educable mentally retarded peers. While his findings were equivocal on previous contact and I.Q., the higher the

educational attainment of the subject's parents, the more negative were their attitudes toward their mentally retarded peers. Older students were generally more accepting of their retarded peers than were the younger subjects.

Lazar, Orpet and Revie (1971) using the A.T.D.P. scale, found a significant difference between the tolerance level, of gifted boys and girls toward the mentally retarded. Girls have been found to be consistently more accepting than boys in several studies conducted using the A.T.D.P. as reported by Yaker, Block and Youngg (1970). Lazar and associates found that gifted girls did respond more favorably than the norms established by Yaker and associates. Miller, Richey and Lammers (1983) pursued this study of 82 gifted children in grades four through seven. Using the Scale of Children's Attitudes Toward Exceptionalities (S.C.A.T.E.), they concluded that gifted children do tend to indicate positive attitudes toward the mildly retarded.

Lindsey and Frith (1983) used the A.T.D.P. to study how various demographic variables, in their sample of 160 elementary and secondary students, affected their attitudes toward their handicapped peers. They, too, concluded that older students were more accepting. Those who exhibited satisfactory classroom behavior and functioned well academically had more positive attitudes than those with only

one of the two characteristics. Those with unsatisfactory behavior and academic performance exhibited more positive attitudes as well.

Six hundred and ninety-eight children in twenty-five schools across grades one to five were used in Johnson's (1950) study to examine the social position of handicapped children. He was able to clearly conclude that mentally handicapped children were significantly more isolated and rejected than their peers. Johnson reported that classmates attributed this rejection to unacceptable and aggressive behavior. He speculated that a mentally retarded child is:

... expected to maintain discriminative standards (standards of right and wrong, standards of participation in group activities and games, standards of behavior, standards of cooperation, standards of social etiquette, et cetera) that are beyond his abilities. With the imposition of too much discriminative strain, his integration is broken down resulting in the various forms of bizarre and disintegrated activities and behaviorisms observed such as swearing, stealing, lying, bullying, teasing, et cetera. (p. 87)

Jones, Gottfried and Owens (1966) studied the reaction of 186 students in grades 9 to 12 on a paired comparisons questionnaire. They concluded that handicapped students are not always rejected for absolute reasons; there is a hierarchy of acceptability and severely mentally retarded people are on the lowest end; and when compared to other handicapping

conditions, mildly mentally handicapped were considered most unacceptable especially on the desirability of having them as family members.

Horne (1986) claimed that research efforts which have attempted to modify attitudes of children toward their disabled peers have been few. Those that have been conducted have largely attempted to provide experience, contact, a combination of both, or some kind of non-academic small group experience. Horne advocated cooperative learning experiences and social skill training (of both the disabled and non-disabled) as two of the more promising approaches for further study.

#### Attitudes of Professionals

Little in the way of scientific research has been conducted on the attitudes of professionals toward the mentally retarded. Surprisingly few reports are available on the attitudes of social workers or physicians. In a 1986 review of the literature, Geskie and Salasek identified fairly distinct attitudinal patterns of treatment professionals but the results were confounded by a number of demographic variables. Socio-economic status varied positively with attitudes toward the disabled (primarily studies in regard to the mentally ill) as did the factor of amount of knowledge on



mental disorders. Level of education varied inversely with an authoritarian attitude. Increasing age and years of service tended to reveal more negative attitudes while females tended to have more favorable attitudes than their male colleagues. The authors cautioned that precisely where the training occurred and what area the contact was experienced were also important considerations.

Most of that which has been conducted in the professional sphere has been in the discipline of education where it has been assumed that all educators will encounter children who are handicapped (Goldstein, 1978). An early study by Semmel in 1959 was conducted to explore the attitudes of two groups of teachers. Included in the sample were 40 regular grade teachers and 27 special class teachers who taught the mentally retarded and had at least six credits of specialized training in education of the mentally retarded. The scale used was composed of statements that were factual or attitudinal in regard to the mentally retarded. As was expected, the information scores for the special education teachers were significantly greater indicating a more accurate and complete knowledge concerning mental deficiency. The two group scores revealed insignificant differences in their positive attitude, negative attitude and no attitude scores. Semmel does point out that both groups received similar professional training

and, in general, had positive attitudes concerning the mentally handicapped.

A later study by Efron and Efron (1967) utilized a 70 item Likert type scale with items developed by the authors, as well as items from the California F scale and the Opinions about Mental Illness scale. Twelve teachers of the mentally retarded, a few non-students and the remainder being students at Newark State College comprised the 235 subject sample. Most of the students were in education with 29 percent in some type of special education program. A factor analysis of the data resulted in the conceptualization of different aspects of attitudes toward mental retardation and the educable retarded. Teachers of the mentally retarded were less authoritarian, less willing to separate and/or institutionalize, more accepting of intimate contact with the disabled, had more accurate information and were more inclined to accept social and cultural impoverishment as the cause in many cases of mental retardation. Students in the field of retardation were less authoritarian as well, as opposed to students in general education and also were: more hopeful about the future, less willing to support isolation efforts and had more factual information including accepting cultural deprivation as a significant cause of mental retardation.

Kennon and Sandoval (1978) used Robert Harth's (1971) Multidimensional Attitude Scale on Mental Retardation (M.A.S.M.R.) to measure attitudes toward the Educably Mentally Handicapped (E.M.R.) of 60 majority and minority E.M.R. and regular classroom teachers. They were unable to discern any general attitudinal differences between regular classroom teachers and E.M.R. teachers. Significant differences were discovered between minority and majority subscales such as over favorableness, as demonstrated by the minority teachers, as well as concomitantly more social distance. They also found that regular class teachers who reported having had some dealings with E.M.R. adults and children demonstrated more positive attitudes on the M.A.S.M.R. The authors cautioned that causality may not necessarily be inferred as there may have been a positive attitude present which initially assisted in prompting the social intercourse. Kennon and Sandoval considered that information and exposure to E.M.R. may well yield more positive attitudes and suggested that opportunities for exposure would assist in the success of mainstreaming and normalizing efforts. Harasymiw and Horne (1976) noted in reviewing the literature in this vein that: "attitudes seem best modified when the shift is generated from within the individual as a result of new environmental experiences, such

as information about the handicapped, as well as the direct experience with them," (p. 394).

Goldstein (1978) studied the effectiveness of the special education teacher education program at the University of Alabama in promulgating positive attitudes toward the mentally retarded. She also compared the education students' attitudes with those of: practicing professionals, other education students, other non-education university students and a group of citizens from Florence, Alabama. More positive attitudes were indicated by the study for individuals having received specialized training and/or experience with the mentally retarded. Goldstein concluded by noting "that non-education students and the community-at-large show marked patterns of non-acceptance and misunderstanding," (p. 93). She made a case for the development of community education programs and also for teacher preparation programs in both elementary and secondary education as most do not require any course work in special education and most all will work with handicapped students.

From her review of the literature, Hannah (1986) assessed the attitudes of teachers on the three traditionally accepted components of attitude (cognitive, affective and behavioral). She concluded that: 1) teachers embrace many beliefs that parallel negative stereotypes, and 2) gifted and normal

students were considered most favorably while retarded and emotionally disturbed children were rated most negatively. In terms of disabled students, teachers were most willing to teach learning disabled and physically impaired and least willing to teach mentally retarded and sensory disabled.

In terms of grade level specialty, elementary teachers demonstrated a greater willingness to teach students with disabilities, particularly the mentally retarded or emotionally disturbed students. Teachers, however, do not appear to differ in their beliefs about disabilities.

Hannah found that most teachers do believe that knowledge about disabilities is important but most believe that they have insufficient information to teach the disabled. More knowledge (more special educating course work) does yield a greater willingness to teach disabled students. Hearing impaired are the least preferred group of disabled students to teach but also the group that teachers feel they know least about. Teachers who are confident of their ability to handle disabled students are most willing to teach them.

### Community Attitudes

Community attitudes toward the mentally retarded have been surveyed a number of times using a variety of methodologies. Belinkoff (1960) was able to make some observations

concerning community attitudes when an attempt was made to locate suitable subjects for an experimental class. Children without an observable organic defect were sought with I.Q.'s in the 50-75 range on the Stanford-Binet Form L. Various clinics, agencies, schools and other possible sources of referral were contacted. (Only specialized clinics and parents' organizations for the mentally retarded made significant numbers of referrals.) The public schools reported difficulty in making referrals because of the stigma attached to the term "mental retardation". A noticeable increase in the number of referrals from schools and daycare centers was observed when the name was changed to "Special Education Research Project".

A more thorough study was conducted of two community groups by Meyers, Sitkei and Watts (1966). They sought to determine both the level of information attained and the attitudes toward mental retardation. The researchers also sought to relate findings to particular social characteristics of households in a random sample as compared to a sample having mentally retarded school age children. It was noted that a disproportionate number of the families in the subgroups were non-Caucasian and of low socioeconomic status. Their findings revealed that:

1. Special class families are more willing to keep EMR and TMR children at home rather than send them away. Non-Caucasians in the special sample are especially accepting.
2. The special sample families tend to be more supportive of public school provision for either the EMR or TMR.
3. Respondents with a membership in a religious group generally calling for orthodoxy of belief were less accepting than those whose identification with religion was of a liberal or casual sort.
4. The more mobile families with retarded favor keeping the child at home rather than in an institution.
5. In general, there is less acceptance of public school responsibility for the trainable than for the educable retarded child.
6. Distressing percentages of respondents in both samples appear to misunderstand the potential of the EMR child, many believing they should be institutionalized, should not go to school, that the public schools should not have provisions, etc. That result, together with the results generally, bespeak a still considerable public misunderstanding of the potentialities of the educables, and of the possibilities for decent community living for the trainables. (p. 84)

Fifty-seven men and fifty-seven women were interviewed by Hollinger and Jones (1970) in a small Ohio city as to: 1) their attitudes toward persons labelled "slow learners"; 2) their knowledge of slow learners; and 3) their acceptance of persons labelled slow learner and mentally retarded. The results were unequivocal on a greater acceptance of the term "slow learner" than of the term "mental retardates". It

should be noted that there was confusion about the meaning of the terms. As has been reported elsewhere, mental retardation was often associated with a physical disability and/or mental illness while the term slow learner did not necessarily infer a reduction of mental capacity.

Gottlieb and Corman (1975) conducted a survey of 430 adult respondents on attitudes as well as recording demographic variables and exploring areas such as previous contact and knowledge of mental retardation. The sample, it should be noted, was not random but people known to the students who assisted in the study. While 88 percent agreed that "a parent should allow his normal child to play with a mentally retarded child" (p. 74) only 33 percent disagreed that special classes for the mentally handicapped were the most effective method of instruction. (34 percent agreed or 33 percent were undecided.) The results of a factor analysis were four observations with high loadings: 1) Positive Stereotype, 2) Segregation in the Community, 3) Segregation in the Classroom, and 4) Perceived Physical and Intellectual Handicap. Interrelationship on these factors and scores resulted in the following conclusions:

1. "... female high-school and college graduates had a more positive stereotype of mentally retarded children than males with similar education."



2. "Younger people, regardless of sex or education, were less likely than older respondents to accept the positive stereotype."
3. "Older respondents were more likely to favor segregating the mentally retarded child in both the community and classroom."
4. "... people in this age group [20-30], in particular rejected both the positive stereotype and segregation."
5. "People who had no contact with a retarded person were more likely to favor segregation."
6. "Male college graduates who had no contact with a retarded person were more likely to favor segregation of mentally retarded children than were female college graduates with no previous contact."
7. "... high school graduates were not as likely as people with either greater or less education to view retarded children as 'different'."
8. "Parents of school-aged children were more apt to favor segregation of retarded children in both the community and classroom." (p. 75)

Research has often demonstrated an acceptance of retarded people in the community in comparison with the discrimination reported in employment or education circumstances. Kastner, Reppucci and Pezzoli (1979) explored this acceptance discrepancy by surveying two groups within a community. One group lived near a house for sale that was described as "having the necessary characteristics for a potential group home," (p. 137) and a non-threat group. Although across the questionnaires there were no significant differences between the two groups, there were on particular questions. On the

two most personalized items (1. would you object to a group home on your block?, and 2. would you object to mildly or moderately retarded employee where you work?) the threat group was not as positive. Another finding of the study was a strong relationship between experience with mentally retarded individuals and more positive attitudes as depicted by the survey scores.

Community attitude research was taken to the country by Tunick, Platt and Bowen (1980) when they surveyed rural farm and non-farm populations. One hundred and five community members in Colorado were surveyed in this study which utilized the A.T.D.P. in determining that the rural non-farm group had significantly more favorable attitudes toward the disabled than the rural farm. They concluded:

...if a community's attitude towards handicapped individuals is not accepting, there may be a negative effect on programs designed for them. ... If the results of this investigation are indicative of attitudes toward handicapped individuals living in rural areas, more effort will be needed to provide programs for attitude change." (p. 550).

Some interesting reports of societal perceptions on the mentally retarded have been forthcoming in the recent past. Sandler and Robinson (1981) advised that in 1976 only 44.7 percent of 665 adults surveyed favored homes for retarded adults in residential districts. However, when a national

survey was undertaken in 1975, 85 percent of the respondents did not object to group homes for six mildly or moderately retarded people living in the neighborhood. When this study was in turn replicated in 1979 with a control group and a "threat" group who were given the impression that a home might actually be established, the results were 90 percent and 81 percent respectively (Roth and Smith, 1983).

A less optimistic report in 1973 stated that 36 percent of the 2661 respondents surveyed called for unconditional institutionalization of educable or trainable level children and 74 percent for institutionalization of severely retarded children. Sandler and Robinson (1981) also noted that actual behavior generally supported these stated attitudes with initial community opposition occurring in one-third of existing group homes surveyed in 1974 and 1976. This does not include cases where the opposition was strong enough to prevent the establishment of group homes--approximately 12 percent in North Carolina in 1977.

Roth and Smith (1983) provided some of the most recent statistics which indicated, perhaps, some current trends in community attitudes toward the mentally handicapped. In this Arkansas study: 93 percent indicated that mental illness and mental retardation were not the same, 94 percent agreed that epilepsy can be controlled with medication and 90 percent

agreed that cerebral palsied persons are not all mentally retarded. 31 percent agreed that mental retardation can be prevented, 31 percent disagreed and 38 percent did not know. 78 percent agreed that handicapped people are more like other people than they are different, 91 percent disagreed that they are tired of paying taxes to support mentally retarded persons and 95 percent agreed that the mentally retarded can work if provided with proper training. In terms of rights, however, the results are different with 63 percent having felt that mentally handicapped should have the right to date, 41 percent felt they should be allowed to get married and 11 percent agreed that those with mental disabilities should be allowed to have children. Roth and Smith acknowledge that the level of disability was not articulated which may account for the variation from previously noted studies. Again, as stressed in the aforementioned, accurate descriptors are necessary for research in this field to ever establish a solid base of information (Gottlieb, 1976).

Gottlieb's (1975) review of the literature claimed that a lack of precisely defined characteristics of individuals whom the respondent is supposed to believe are mentally retarded, is one of the most critical limitations in attitude studies of this kind. He noted that reported attitudes are related to both the severity of the mental retardation (the more severe

the retardation, the more negative the attitude) and to the chronological age of the target disabled person (vis-a-vis his/her developmental abilities and expectations as to what his/her capabilities might be expected to be). Gottlieb also cautioned about the manner in which the concept of mental retardation is presented and reviewed the effect of the particular label used. In debriefing public attitudes toward the mentally retarded, Gottlieb addressed two general considerations. First, he established the influence of the attitude referent. As has been confirmed in several studies, the predominant view held by the public of the mentally retarded is of a physically damaged, Down's Syndrome, sick or physically handicapped individual. The causes usually cited include: birth injury, defects or brain damage--the forms that are numerically in the minority of cases of mental retardation but associated with the more severe instances. Second, Gottlieb reviewed the factors associated with public attitudes that will be referred to here as "demographics" (age, sex, educational attainment) as well as previous contact.

#### Related Studies: Demographic Variables

Many variables have been isolated in studies of attitudes toward the mentally retarded including: value orientation,

educational attainment of parents, nationality, socioeconomic background, amount of factual knowledge on the particular disability, income level, urban versus rural and marital status. Four of the most thoroughly researched variables are age, sex, education and previous exposure or contact. Studies appear to indicate these four factors are predictors or correlates of attitudes toward the mentally retarded. These variables were considered in this particular study, ergo, the related literature review will attend to the four only.

Age: The relationship of age to attitudes toward the mentally handicapped is a complex one as social experience and education also increase with age. Bearing this in mind, several statements may be drawn from the literature on age as a variable affecting attitude. Hazzard (1981), in her literature review of demographic variables, concluded that studies have generally found that children's knowledge and understanding of disabilities increases with age. Peterson's (1975) exploration of the attitudes of students in grades five to eight demonstrated a slight trend increasing in favorability with increased age. Lindsey and Frith (1983) used the A.T.D.P. to examine the attitudes of 166 non-disabled elementary and secondary students (age range from 8.2 to 20 years) and concluded that age level does significantly affect

attitude. Older students had more positive attitude scores than the younger elementary students.

Hollinger and Jones (1970), in their previously described study of adults ranging in age from 18 to 87, observed that age was consistently correlated negatively with attitudes toward slow learners. Gottlieb and Corman's (1975) sample of 430 adults, as noted earlier, suggested that while younger adults were less likely to accept a positive stereotype of the mentally retarded child, they were also less likely to accept the need to segregate and isolate. In other studies using A.T.D.P. to investigate age and attitudes toward the disabled, Yaker, Block and Youngg (1970) noted five studies that reported a relationship and four that did not.

Sex: Yaker, Block and Youngg (1970) also reported that the majority of studies using the A.T.D.P. do show a relationship between sex and attitude. In fact, the authors have established separate norms for interpreting the A.T.D.P. scores as females tend to score significantly higher and, therefore, appear to be more favorable in their attitudes toward the disabled. Gottlieb's (1975) literature review on studies particular to mental retardation also supported the contention of a sex difference. In his (1975) study with Corman they concluded that female high school and college graduates had a more positive stereotype of mentally retarded

children than males with a similar educational attainment level.

The tendency for females to be more positive appears to be visible at a young age according to Hazzard (1981). She investigated the relationship between sex and attitude in 367 elementary school children and discovered a pronounced difference in more favorable attitudes in the girls' ratings. Hazzard hypothesizes that:

The idea of being disabled is more challenging to sex-typed male cultural ideals. Whereas boys are supposed to be strong and active, disabled persons are stereotypically viewed as weak and helpless. In addition, according to traditional sex-role expectations, nurturance is highly valued as a feminine quality. Thus, girls may more easily adopt a nurturant role toward disabled peers. Such a nurturant stance could be a first step toward more accepting attitudes, although such nurturance also has the potential to become patronizing overconcern. (p. 138)

Educational Attainment: The data relating level of educational attainment to attitudes toward the mentally retarded are not as consistent as those on age and sex (Gottlieb, 1975). As noted earlier, age and educational attainment are closely related to social awareness. Educational attainment is also correlated with factual knowledge of the mentally retarded and both were correlated with more positive attitudes (Gottwald, 1970). In the previous section on age, it was observed that instances of



positive attitudes generally increased between junior high school and high school age students. Gottlieb (1975) in his review of the literature in the education factor goes on to say that those who complete high school also show more favorable attitudes than those with more education. In his study with Corman (1975), he confirmed that high school graduates were not as likely as people with either greater or lesser education to perceive as different, children who are mentally retarded.

Yuker, Block, and Youngg (1970) in debriefing the studies of educational attainment and attitudes toward the disabled in general concluded as a tentative hypothesis

...that attitudes toward disabled students are less favorable with increasing grade level through the elementary grades, but that the trend reverses at the high school and college level so that increasing grade levels are related to more favorable attitudes ..." (p. 52)

Previous Contact: Yuker, Block and Youngg (1970) acknowledged the existence of several experimental and behavioral correlates of attitudes toward disabled persons including specific educational experiences and previous contact. The effect of special formal educational interventions will be covered in the next section on "Related Studies: Changing Attitudes". In their 1970 monograph, Yuker, Block and Youngg noted that it has been the assumption of many

studies on previous contact that a person with a relatively high degree of contact with the disabled would tend to be more accepting than those with less contact. The type of contact has been shown to be an important determinant of attitudes.

Yuker (1986) in reviewing the literature on previous contact summarized the results of the studies as having 51 percent positive results, 10 percent negative results and 39 percent with non-significant differences. Yuker purported that the relationship of interpersonal contact to attitude is a complex one mediated by the interaction of the following variables:

1. Interaction with disabled persons who have "positive" characteristics such as competence/ability, coping skills, social skills, communication skills, and attitudes and background similar to that of the person(s) they interact with tends to lead to positive attitudes while interaction with persons lacking these characteristics frequently leads to negative attitudes.
2. Interaction that emphasizes either non-disability characteristics of the disabled person or acknowledgement and acceptance of the disability tends to lead to positive attitudes while interaction that emphasizes the disability may lead to negative attitudes. The emphasis on non-disability characteristics can result from the attitudes and behavior of the disabled person or characteristics of the social or physical environment.
3. Interaction that involves cooperation and working toward common goals is apt to lead to positive attitudes whereas interaction that

involves conflict tends to lead to negative attitudes.

4. Interaction is most apt to lead to positive attitudes if the non-disabled person is relatively intelligent, knowledgeable, non-authoritarian, and open minded, and does not have strong prior negative attitudes toward disabled persons or minority group members.
5. Interaction that occurs in a setting where the social norms promote equal status, cooperative interaction and positive attitudes tends to result in positive attitudes whereas interaction in a setting that promotes perception of the disabled person as different and/or inferior is likely to result in negative attitudes. (pp. 17-18)

The results of studies that have been cited previously in this review of the literature include:

1. Jaffe (1966)--adolescents who reported observing social contact with the retarded assigned more favorable attitudes to them than did their non-disabled peers who had not had contact.

2. Semmel and Dickson (1966) and Efron and Efron (1967) found more favorable attitudes in college students who reported having had previous contact with the mentally retarded.

3. Hollinger and Jones (1970) reported that males in their study who had a slow learner in the family had more favorable attitudes. The authors did caution that their results did not demonstrate a strong relationship between previous contact and attitudes toward slow learners.

4. Strauch (1970) did not establish a cause and effect relationship in his study. He suggested that the social contact in this instance may have served to reinforce negative stereotypes held by normal pupils and that efforts to change attitudes should have both disabled and non-disabled students working toward common goals in a dependent relationship.

5. Gottlieb and Corman (1975) found that those subjects who had not known a retarded person were more apt than those who had to favor segregation for the mentally retarded in the community.

6. Peterson (1975) found it possible from his results to demonstrate a relationship but concluded that the relationship was neither strong nor consistent and also alluded to the importance of other related variables.

7. Kastner, Reppucci and Pezzoli (1979), as noted previously, found a strong relationship between experience with mentally retarded individuals and a more positive attitude toward them.

8. Hazzard (1981) found no strong relationship and also concluded: "It is likely that the effect of contact with disabled persons on children's affective attitudes depends on a number of variables, such as the nature of the contact and the type of disability," (p. 138).

### Related Studies: Changing Attitudes

Numerous studies, employing a variety of techniques, have been undertaken since the onset of mainstreaming to improve attitudes toward the disabled. Ashmore (1975) purported that this array of procedures can be categorized in accordance with three paradigms. 1) The "communication" paradigm holds that the individual learns that the attitudes he or she possesses are inconsistent with a significant other. Persuasive communicators and communication techniques are employed to alter negative attitudes. 2) The "forced compliance" paradigm usually employs either role playing or enforced contact to change attitudes. 3) "Self-confrontation" or "education through self-information" (Rokeach, 1973) is any technique which urges consistency between attitudes, behaviors and high orders of the belief system such as values and self-concept. Attempts to demonstrate that the mentally retarded are capable, helpful, and more like the non-retarded than different might be categorized under this paradigm. Intro-spective techniques using videotapes of interactions with the disabled, perhaps in concert with value surveys, might be employed in this kind of effort.

To provide some structure to a review of the literature on attitude change interventions, Donaldson (1980) used six categories including: contact or exposure, information about

disabilities, persuasive messages, analysis of the dynamics of prejudice, disability simulation and group discussion.

Studies on the effect of previous contact have been of either structured or non-structured experiences. Those noted in the previous section illustrate that contact does not always result in a positive attitude change. In fact, confirmation of negative stereotyping may well result from such unstructured exposure. Structured experiences have more consistently resulted in positive attitude change. Donaldson (1980) also noted that several successful structured interventions employing contact with the disabled provide for an equal status between the disabled and non-disabled participants in terms of age, social, educational or vocational status.

According to Gottlieb (1975), studies employing institutional tours have been reported from the 1950's to 1975 (LeUnes, Christensen and Wilkerson, 1975). The results of these studies in altering attitudes toward the mentally handicapped are summarized by Gottlieb's comment:

To the extent that any general statements regarding the effects of institutional tours on attitude change are possible, it appears that attitudes toward the patient become more negative while attitudes toward the institution become more positive. This combination of attitudes toward the patients and the institution is easily interpretable if one considers that the more likely people are to believe that retarded people have a limited prognosis and should be segregated, the greater

will be their belief that institutions are necessary to achieve these ends. (pp. 108-109)

In reviewing the literature on educational interventions, Yaker, Block and Youngg (1970) concluded that approximately one-half of the studies cited indicated no significant difference in attitudes following specific educational experiences. Lazar, Gensley and Orpet (1971) employed the A.T.D.P. to measure the effects of a special instructional program designed to alter the attitudes of gifted children toward the disabled. In this instance, a statistically significant difference was found. Prothero and Ehlers (1974) used a programmed text on mental retardation in an effort to favorably alter the attitudes of 46 social work students. No significant difference was encountered and the authors concluded that "in order to change attitudes of students it would appear that something other than a significant increase in knowledge about retarded persons is necessary," (p. 83). Other techniques that have been utilized include film (Westervelt and McKinney, 1980), books (Bauer, 1985), workshops (Hill, 1984), et cetera. In terms of the success of instructional efforts in concert with mainstreaming in the school system, Begab (1970) wrote:

Formal class instruction apparently has little impact on either knowledge or attitudes toward mental retardation. Despite school claims of increasing integration of mental retardation

content in the generic curriculum, students know little more when they graduate than when they started. These misconceptions remain basically unchanged. (p. 807)

Begab (1970) employed a series of self-administered instruments on the 288 graduating and 279 newly admitted social work students in his study. In addition to concluding that information by itself had a limited effect on attitude change, Begab observed that knowledge derived through affective experiences could have a considerable impact and that the sources of information were further determinants in the absorption of new knowledge and its integration in attitudes. If the instructor and/or agencies are suitably motivated and demonstrated favorable attitudes toward the mentally retarded, attitude change may be encouraged. Stevens and Allen (1984) supported Donaldson's (1980) contention that persuasive messages can assist in attitude change:

Placing students in contact with those who act in a positive way toward disabled persons breaks down the typical stereotypes that are held about handicapped people and those who work with handicapped persons. The program places the student within a group whose norms include positive attitude and behavior toward disabled people. This group membership will require similar behavior on the part of students and probably lead to a positive attitude toward disabled people. (p. 223)

The analysis of the psychodynamics of prejudice is an area that Donaldson (1980) suggested held promise for further



research though only three related studies had taken place at the time of writing. It should be noted, however, that Yaker (1970) has reviewed the literature (both studies using the A.T.D.P. and those utilizing other measures) in a lengthy monograph on many different personality correlates as well as attitudinal correlates of attitudes toward disabled persons.

Two studies employing the technique of disability simulation arrived at equivocal results. Wilson and Alcorn (1969) had subjects simulate disabilities for eight hour periods with no significant change in attitudes occurring as measured by the A.T.D.P. Another study by Clore and Jeffrey (1972) used role players and observers and did encounter lasting attitudinal change.

Group discussion has been employed as an attitude change technique in several studies. In a 1977 study, Siperstein, Bak and Gottlieb achieved negative results in their efforts to alter the attitudes of children toward the mentally retarded. In a later study Gottlieb (1980), used a videotape, measured prediscussion attitudes and held a carefully structured discussion lead by the experimenter. Positive change was evident in the 1980 study.

Some success has been encountered in studies which employ a combination of techniques. Handlers and Austin (1980) utilized a variety of activities in attempting to alter the

attitudes of 20 junior and senior high school students over the course of eight weeks. Discussion, research and reporting, viewing a film, disability simulation and direct contact through an interview with a blind student were undertaken by all participants. 82 percent of the students reported an attitude change. The results were subjectively self-reported and the sample was volunteer. In reviewing the literature, Lombana (1980) suggested that an approach consisting of direct contact, cognitive information and experiential activities are most effective. Again, a review of the literature yields results that are equivocal. Warren, Turner and Brody (1964) used lecture-discussion-guided tour as their study modus operandi and encountered a negative change in attitudes of their 80 sophomore subjects. The authors suggest as explanation that confirmation or disconfirmation of the student's original conception of the abilities and disabilities of the handicapped may have occurred. The students reported being impressed with the abilities of the blind and deaf while realizing the limitations of the academic goals of the retarded. Warren and associates, as has been proposed by other authors, hypothesized that slightly negative impressions can be intensified through exposure to the disabled.

The literature clearly demonstrates that change techniques must be carefully structured. Some recommendations on structuring an attitude change study include: 1) participation in activities which involves both goals and work towards the goals at a level of difficulty that assures success; 2) inherent rewards for participating especially effective when shared between disabled and non-disabled; 3) exposure to non-stereotypically disabled, particularly during the initial phases; 4) situations where status of disabled and non-disabled are as equal as possible; and 5) norms (authority figures) that favor equality and tolerance for differences between people (Sandler and Robinson, 1981).

#### Summary

Much of the literature, as well as the present study, assumes the credibility of the theory that attitudes and behavior are inextricably linked and that knowledge unveiled of attitudes toward the developmentally disabled will provide an indication of how others will act toward them. Whether the attitudes expressed are manifested in actual behavior or a predisposition to act, further study and knowledge of attitudes and mechanisms for change are important efforts in promoting the potential of the mentally retarded.

Although only a few of the many facets of the subject area have been consistently validated with research, some important information has come to light as identified in the foregoing review of the literature.

The basic tenet behind this research initiative is that it is imperative that those engaged in efforts to improve the situation of the mentally retarded must be aware of the attitudes of those even peripherally involved. This premise holds whether it is a mainstreaming project in grade school, the establishment of a group home in a residential community, or conducting a transitional/vocational program. Accurate and current information on the attitudes of peers, teachers and the community is required and a body of knowledge is being amassed.

Mainstreaming has been the educational response to legislation calling for normalization opportunities for handicapped individuals (Shennan, 1984). The theoretical assumption behind the movement is that disabled students will benefit academically and socially from increased contact with the non-disabled. The results of research on mainstreaming are equivocal (McCann, Semmel and Nevin, 1985). The only conclusion that may be drawn with confidence is that these efforts have focused public attention on a previously disenfranchised segment of society (Greenburg, 1984).

Equally as controversial and well researched is the related subject of labelling the mentally retarded. Various studies have concluded that labelling may affect the retarded: adversely (Gibbons and Gibbons, 1980), in a positive way (Farina, Thaw, Felner and Hust, 1976), or have no apparent effect at all (Gottlieb, 1974). Clearly, certain labels are more easily accepted by society such as "slow learner" (Hollinger and Jones, 1970 and Belinkoff, 1974). Lastly, it is important to be specific in addressing the object referent when conducting research, as only a small percentage of the population can accurately distinguish between various levels of mental retardation. The term mentally retarded generally denotes to most people, images of severe retardation represented by a Down's Syndrome or brain damaged individual (Gottlieb, 1975).

In studies of the attitudes of children, it is apparent that understanding and acceptance of mentally retarded peers are largely inadequate (Frith and Mitchell, 1981). Children who are mentally retarded are significantly more isolated and rejected than their peers (Johnson, 1950). This unacceptability is in the form of a hierarchy with the more severely mentally retarded on the lowest end of the continuum (Jones, Gottfried, and Owens, 1966).

The results of studies comparing the attitudes of educators in general with special education teachers have been equivocal (Efron and Efron, 1967 and Kennon and Sandoval, 1978). Teachers, as a whole, and students of education usually show favorable attitudes toward the mentally retarded (Semmel, 1959 and Goldstein, 1978).

The many studies cited in the review of the literature on "community" attitudes have generally revealed a less than positive attitude toward the mentally retarded. A series of specific conclusions about narrow segments of society were presented, particularly from studies by Meyers, Sitkei and Watts (1960); Gottlieb and Corman (1975); Sandler and Robinson (1981) and Roth and Smith (1983). It should be noted that many of the studies cited in this section and throughout the review of the literature have involved college and university students as the subjects under study, for example: Wilson and Alcorn (1969); Begab (1970); Goldstein (1972); Jones (1974); Le Unes, Christensen and Wilkerson (1975).

That which may be concluded about college and university students as a segment of society was noted in the review of the literature, in the section on "Related Studies: Demographic Variables". Traditional college age students (18-22) will tend to show more favorable attitudes than younger students. Studies on the demographics of age have tended to

show an increasing understanding and acceptance of mental retardation concomitant with increasing age in children (Lindsey and Frith, 1983). Younger adults are less likely to show an acceptance of a positive stereotype of the mentally retarded than older adults but are also less likely to accept the need to isolate or segregate (Gottlieb and Corman, 1975).

The literature shows a strong relationship between sex and attitude. Traditionally aged female college students (as well as female grade school students and older women) tend to show more positive attitudes toward the mentally retarded (Gottlieb and Corman, 1975; Hazzard, 1981; Yaker, Block and Youngg, 1970).

Results of studies on educational attainment are more equivocal than on the demographics of age or sex. In general, attitudes are more favorable toward the disabled with increasing educational attainment (Gottwald, 1970; and Yaker, Block and Youngg, 1970). For the purposes of this study, results have consistently supported the contention that high school graduates are more accepting and understanding than non-high school graduates (Gottlieb, 1975; and Gottlieb and Corman, 1975).

Studies on previous contact have often reinforced the assumption that exposure to the disabled will assist in forming more positive attitudes (Jaffe, 1966; Hollinger and

Jones, 1970). College students, in particular those with previous contact, showed more favorable attitudes than their peers who had less exposure to the disabled, in studies by Semmel and Dickson (1966) and Efron and Efron (1967). Several other research initiatives did not find favorable results after contact with the mentally retarded and the authors cautioned that the exposure must be carefully structured in order to be successful (Strauch, 1970; Peterson, 1975; Hazzard, 1981; and Yaker, 1986).

Many techniques have been employed in an effort to change the attitudes held by various sectors of society concerning the mentally retarded. Approximately one-half of the attempts have failed through not creating a situation where the mentally retarded can demonstrate their abilities rather than their disabilities (Yaker, Block and Youngg, 1970).

Perhaps the most provocative conclusion to be substantiated by research and drawn from the review of the literature has been the revelation of the existence of a hierarchy of disabilities. Firstly, it is clear that society from grade school through college to the public in general, has a particular and unfavorable configuration of attitudes held toward the handicapped. Study after study has demonstrated that among disabilities mental retardation is considered particularly unfavorable. Secondly, research has



shown that the more severe the mental handicap, the greater is the lack of social acceptance of the individual (Jones, Gottfried and Owens, 1966; Tringo, 1976; Jones, 1974 and Harth, 1981).

### Nature and Future of Research

During the Attitudes Toward Persons With Disabilities Conference held in June, 1986 at Hofstra University, New York, the author invited Harold E. Yuker to characterize the nature of the quality of research conducted thus far on attitudes toward the disabled and its future direction.

Dr. Yuker stated that much of the early research was ineffective but that recent efforts were greatly improved. He attributed this improvement largely to the use of superior measuring devices (particularly standardized instruments). In the case of studies employing treatments, utilization of proper control groups has improved research efforts. In terms of future research, Yuker called for improvement of follow-up studies in an effort to create interventions which promote long-term positive change.

Richard Antonak, in his conference presentation entitled "Measures of Attitudes Toward People With Disabilities," called attention to the need for sufficiently validated

instruments and cited the A.T.D.P. as one of three existing in the field.

Jay Gottlieb echoed Antonak's advice on using standardized instruments and added the need to identify specific populations and specific identifiers (focusing the object referent). Gottlieb cautioned against studies of volunteer subjects or other non-random samples and against generalizing results from one sociological setting to another. He called for research to engage in studies: 1) of a behavioral nature, 2) that are well controlled, 3) of longitudinal variety, and 4) which might provide insight into the complexity of attitudes.

## CHAPTER III

### METHODOLOGY

The methods and procedures for this study are presented in this chapter. The first section describes the sample, the second is concerned with the method of data collection, the third presents the instrument, the fourth describes the hypotheses and the last section presents the statistical design.

#### Sample

The sample population for this study was the non-developmentally disabled students in full-time attendance at the Fairview campus of Fairview College. Fairview College is a public technical/vocational institution in the Province of Alberta, Canada. There are more than a dozen satellite campuses of the college located throughout the 80,000 square mile mandated service area.

Two groups of non-disabled students were surveyed at the Fairview campus including short-term students (most of whom were apprenticeship students who attended for six to eight weeks each year for three to four years) and long-term students (defined for the purposes of this study as

certificate and diploma students who attended from four months to two academic years). Long-term students who attended two of the satellite centers in Manning and High Level were also surveyed. The developmentally disabled students in the Transitional/Vocational Program, at the Fairview campus were surveyed as a separate group.

The Transitional/Vocational Program itself is essentially the same in curriculum, duration, and administration at each of the nine post-secondary institutions which offers it. The level of understanding and acceptance of the Transitional/Vocational Program and its students by the general student body may vary from institution to institution. Factors which could have such an effect include: 1) size of the institution and opportunities for contact, 2) amount of information on the goals, objectives and student characteristics provided to the student peers, and 3) possibly the programming focus of the institution (i.e.: some combination of university transfer, technical, vocational and upgrading).

Fairview College is a small, residential, rural, technical/vocational institution. A study confined to this well defined population with reasonable control of variables that may affect the results addressed the needs as described in the significance of the study section.

There were 104 short-term students and 188 long-term students in attendance at the time that the study was conducted and who were surveyed. One subject answered by indicating primarily the same response, hence it was not included in the analysis. The cell size specified in Cohen's tables for this type of study is 80. This recommendation is based on a power of .81, an effect size of .40, and a confidence level of .05.

Table 1. Types of Respondents

A = long-term students  
 B = short-term students  
 C = Transitional/Vocational students  
 D = Satellite Center students (control)

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
Number of Respondents	N=187	N=104	N=6	N=44
Recorded Absences on the Day Surveyed (Total = 21)	3	9	0	9
Return Rate in Percent (Overall = 94.2%)	97.2%	95.4%	100.0%	83.0%

Table 2. Demographic Profile of the Population (N=341)

Class	Valid Cases	Missing Cases	Absolute Frequency	Relative Frequency(%)
Age	341	0		
20 or younger			109	32.0
Over 20			232	68.0
Sex	340	1		
Female			139	40.8
Male			201	59.1
Educational Attainment	341	0		
High School Graduate			221	64.8
Non High School Graduate			120	35.2
Previous Contact With Developmentally Disabled Persons	339	2		
Limited Contact			234	68.6
Considerable Contact			82	24.0
Developmentally Disabled Family Member			23	6.7
Student Category	341	0		
Long-term			189	54.7
Short-term			104	30.5
Control			44	12.9
Developmentally Disabled			6	1.8

### Instrumentation

The Attitude Toward Disabled Persons (A.T.D.P.) scale (Yuker, Block and Campbell, 1960) when first developed, attempted to measure attitudes toward disabled persons in general. It has become one of the most widely utilized scales in attitude studies toward the disabled, according to the literature. Numerous studies have been undertaken which have adapted the A.T.D.P. scale by substituting specific disability descriptors in place of the term "disabled". The senior author has provided permission to use the scale in this fashion for the purposes of this study and advised that the norms established will remain appropriate for contrasting studies. (See Appendix A for the original Form B and Appendix B for the revised form for this study.)

The original form of the scale consisted of 20 items, however, later Yuker and associates constructed two 30-item equivalent questionnaires. Each statement suggested either that disabled people are the same as or different from the non-disabled. Approximately one-half of the items are concerned with special treatment of the disabled while the other half addresses differences in personality characteristics. The items were chosen on the basis of item analysis. The response made is a six point Likert-type scale: I agree

very much, I agree pretty much, I agree a little, I disagree a little, I disagree pretty much, and I disagree very much.

The alternative responses are weighted +3, +2, +1, -1, -2, and -3 respectively. The responses are added algebraically (some sign valences are changed). High scores are interpreted to mean an acceptance of or favorable attitude towards the disabled referent group.

A 1970, 170 page monograph on the A.T.D.P. provides a comprehensive report on research related to the measurement of attitudes toward disabled people. The report discusses all aspects of the A.T.D.P. scale including a review of the literature that utilized the scale as well as studies that employed other measures.

In the 1970 report, the test-retest reliability on eight estimates of Form O range from .66 to .89. The revised forms had not been reported as extensively in the 1970 monograph. The two that employed Form B reported .71 and .83. Split-half reliability has been measured at .71 and .87 on Form B while parallel form estimates range from .57 to .83 with a median of .67. The mean for stability-equivalence reliability studies is .74.

Shaw and Wright (1967) in regard to validity comment: "The A.T.D.P. scale has reasonably good content validity and additional evidence is provided by correlation of A.T.D.P.



scores with other scales." They conclude by stating: "The authors of this scale have done a considerable amount of work on it, and the supporting data are better than for most scales. There is still some question concerning its validity, but it seems adequate for research purposes." (p. 481)

In an effort to measure fakeability, the A.T.D.P. - 0 was given to a class of 62 beginning psychology students under two conditions (Yuker, Block and Youngg, 1970). In the first instance, the students completed the survey under standard conditions. In the second instance, they were invited to make the best impression possible. A t-test was conducted producing a value of 1.17 which was not significant at the .05 level indicating that the test is not particularly fakeable.

One criticism that has been leveled against the A.T.D.P. scale is that it is not unidimensional or factorially pure. For example, some items measure characteristics of the disabled while others are concerned with treatment of the disabled by non-disabled. Several factor analysis studies have been conducted using the various forms of the A.T.D.P. Some studies cited in the 1970 monograph statistically support the contention that the scale is composed of two basic factors. The authors contended that attitude is a complex phenomenon and should not necessarily be measured by only one factor. They feel that stereotypical attitudes which might be

isolated (such as pity or sympathy) should be included as negatively expressed attitudes.

#### Method of Data Collection

At Fairview College, the revised questionnaire was distributed to each program of students during class time of a core course that was taken in common by all students in the program. Four groups of students completed the survey including: long-term students, short-term students, Transitional/Vocational students and full-time students at two of the satellite campuses.

Following a brief introduction and review of directions, participants completed the attitude survey in approximately fifteen minutes. All programs were surveyed during the period of February 24 to March 7, 1986. At that juncture in the academic year, the maximum number of full-time programs were in operation and most students were on campus (as opposed to on practica, field trips, et cetera). This particular point in the year also afforded maximum exposure to the developmentally disabled students, when the student body was considered as a whole.

In an effort to increase the response rate, an incentive was provided. Each participating subject was allowed to keep the pencil used to complete the survey.

The responses were recorded on the Oregon State University General Purpose Data Collection Sheet so the results could be scored mechanically. Prior to scanning, the questionnaires were reviewed for accuracy and completeness of markings. The data was then analyzed at the Oregon State University Computer Center.

### Hypotheses

The revised Attitude Toward Disabled Persons (A.T.D.P.) scale was used to obtain measures of attitudes toward the developmentally disabled students. Investigation of differences in mean attitudes, as measured by the revised A.T.D.P. - B was used to test the null hypotheses. Additionally, an investigation was undertaken to determine the relative effect of certain demographic characteristics. The following hypotheses were related to the examination of the attitudes of college students toward developmentally disabled peers.

- Ho<sub>1</sub> There is no significant difference between the mean score of the female control students and the norm established for Form B of the A.T.D.P. scale.  $\bar{X} - u = 0$
- Ha There is a significant difference between the mean score of the female control students and the norm established for Form B of the A.T.D.P. scale.  $\bar{X} - u \neq 0$

- Ho<sub>2</sub> There is no significant difference between the mean score of the male control students and the norm established for Form B of the A.T.D.P. scale.  $\bar{x} - u = 0$
- Ha There is a significant difference between the mean score of the male control students and the norm established for Form B of the A.T.D.P. scale.  $\bar{x} - u \neq 0$
- Ho<sub>3</sub> There is no significant difference between the mean score of the female short-term students and the norm established for Form B of the A.T.D.P. scale.  $\bar{x} - u = 0$
- Ha There is a significant difference between the mean score of the female short-term students and the norm established for Form B of the A.T.D.P. scale.  $\bar{x} - u \neq 0$
- Ho<sub>4</sub> There is no significant difference between the mean score of the male short-term students and the norm established for Form B of the A.T.D.P. scale.  $\bar{x} - u = 0$
- Ha There is a significant difference between the mean score of the male short-term students and the norm established for Form B of the A.T.D.P. scale.  $\bar{x} - u \neq 0$
- Ho<sub>5</sub> There is no significant difference between the mean score of the female long-term students and the norm established for Form B of the A.T.D.P. scale.  $\bar{x} - u = 0$
- Ha There is a significant difference between the mean score of the female long-term students and the norm established for Form B of the A.T.D.P. scale.  $\bar{x} - u \neq 0$
- Ho<sub>6</sub> There is no significant difference between the mean score of the male long-term students and the norm established for Form B of the A.T.D.P. scale.  $\bar{x} - u = 0$
- Ha There is a significant difference between the mean score of the male long-term students and the norm established for Form B of the A.T.D.P. scale.  $\bar{x} - u \neq 0$

- Ho7 There is no significant difference between the mean scores of the control students and the short-term students.  $u_1 = u_2$
- Ha There is a significant different between the mean scores of the control students and the short-term students.  $u_1 \neq u_2$
- Ho8 There is no significant difference between the mean scores of the control students and the long-term students.  $u_1 = u_2$
- Ha There is a significant difference between the mean scores of the control students and the long-term students.  $u_1 \neq u_2$
- Ho9 There is no significant difference between the mean scores of the short-term students and the long-term students.  $u_1 = u_2$
- Ha There is a significant difference between the mean scores of the short-term students and the long-term students.  $u_1 \neq u_2$
- Ho10 There is no significant difference between the mean scores of the developmentally disabled students and the non-developmentally disabled students.  $u_1 = u_2$
- Ha There is a significant difference between the mean scores of the developmentally disabled students and the non-developmentally disabled students.  $u_1 \neq u_2$
- Ho11 There is no significant difference between the mean scores of groups with certain demographic variables.  $u_1 = u_2$
- Ha There is a significant difference between the mean scores of groups with certain demographic variables.  $u_1 \neq u_2$

The following characteristics were the independent variables associated with each of the hypotheses:

- a. Age of the subjects,
- b. Sex of the subjects,
- c. Level of education of the subjects,
- d. Level of previous contact of the subjects with developmentally disabled people.

#### Treatment of the Data

The completed surveys were reviewed for accuracy and completeness of marking prior to being machine scored.

Demographic information was also recorded on the General Purpose Data Collection Sheet in a machine readable format.

The alternative responses were weighted and added algebraically. Individual answer sheets were tabulated and scored in this manner. Means for each of the groups were then calculated, as identified in the Hypotheses 1-8. Means were also calculated for groups of non-disabled students in response to the demographic variables.

A = long-term students  
B = short-term students  
C = Transitional/Vocational students  
D = satellite center students (control)

1. Age (Groups A, B, C, D)
  - a) older than 20
  - b) equal to or less than 20
2. Sex (Groups A, B, C, D)
  - a) male
  - b) female
3. Education (Groups A, B, D)
  - a) high school graduates
  - b) non-high school graduates

4. Contact (Groups A, B, D)
  - a) considerable previous contact with the developmentally disabled
  - b) limited previous contact with the developmentally disabled
  - c) have a developmentally disabled member in the family

The F statistic, an inferential statistic designed to measure the difference between two independent group means, will be employed in reporting the responses of each of the groups as identified in the hypotheses above. Analysis of variance will be used in examining the demographic variables as previously described.

Analysis of variance is a robust statistical method used for contrasting differences between the groups of data derived from interval scales. It is suited for use in this type of descriptive study (Courtney, 1984).

The requirements for analysis of variance include the following assumptions:

1. common or equal variances
2. a random sample
3. a normally distributed dependent variable

Significance testing was conducted with the alpha level set at the .05 level.

An analysis was also conducted to determine if there is a significant difference in the response from the total sample to questions on the revised A.T.D.P. - B that are of an

absolute or relative nature. A t-test was used, with a .05 significance level, to determine if a difference exists.

Absolute questions refer directly to the developmentally disabled, without comparison to non-developmentally disabled. Examples of absolute items are: "Developmentally disabled persons are usually friendly" and "People who are developmentally disabled should not have to pay income taxes." Absolute items include question numbers: 1, 2, 4, 5, 7, 8, 12, 14, 17, 18, 19, 20, 22, 23, 27, and 28.

Relative questions compare the developmentally disabled with other people. Examples of relative items are: "Developmentally disabled people are no more emotional than other people" and "Developmentally disabled workers can be as successful as other workers." Relative items include question numbers: 3, 6, 9, 10, 11, 13, 15, 16, 21, 24, 25, 26, 29, and 30.

#### Summary

The senior administration at Fairview College approved the general nature and substance of the research. In turn, the Academic Division and the instructors to be involved were contacted to discuss the details of the project and to secure in-class time to conduct the survey. A pre-test was conducted on February 4, 1986, which engaged as subjects nine graduate



students in College Student Services Administration at Oregon State University. The administrative results were satisfactory. The surveys were then completed by 342 Fairview College students representing an overall return rate of 94.2 percent.

The resulting means were analyzed by analysis of variance to determine the general attitude toward the developmentally disabled students at Fairview College. This was accomplished through comparisons of group survey means with each other and with norms of the A.T.D.P. - Form B. Survey Questions from the revised A.T.D.P. were divided into relative and absolute. A t-test was employed to determine if there are any significant differences to the general response to the two types of questions.

The results of the application of the statistical tests will be discussed in detail in chapter four.

## CHAPTER IV

### PRESENTATION OF THE FINDINGS

#### Introduction

This research was conducted to examine the attitudes of non-disabled college students toward their developmentally disabled peers attending the same college.

Attitudes, as measured by the revised Attitude Toward Disabled Persons scale, were examined by:

1. Contrasting the mean scores of Fairview College students with the norms established for the A.T.D.P. - B.
2. Contrasting the mean scores of short-term, long-term, control and developmentally disabled students at Fairview College.
3. Contrasting group mean scores on selected demographic variables including age, sex, educational attainment and previous contact.
4. Contrasting the results of absolute versus relative questions.

The data are presented in the following format. To facilitate understanding of the findings:

1. A description of the statistical analysis used, in each of the four areas as described above, will begin each section.

2. The individual hypotheses are stated.
3. The results of the statistical analysis are presented.
4. The retention or rejection of the hypotheses is discussed.
5. Tables are presented to represent pictorially the results of the analysis of variance in the appendices.

Contrasting Group Means of Fairview College  
Students With A.T.D.P. Form B Norms

The primary purpose of this study was to measure the attitudes of Fairview College students toward their developmentally disabled peers by contrasting their scores on A.T.D.P. - Form B with the established norms for the instrument. The null hypotheses that there are no significant differences in the mean scores of control, short-term, long-term and the norms were tested.

A one-way analysis of variance, using the F statistic, tested null hypotheses I through VI. The analysis of variance test compares individual group means with other means to determine if there is a significant difference between them. The .05 level of significance was used to determine whether to retain or reject the null hypotheses. In contrasting the individual group means, if the difference is significant at the .05 probability level, the null hypothesis was rejected for that particular test. If a null hypothesis was rejected,

it may be concluded that events consistent with the null hypothesis were occurring less than five percent of the time. In all, six individual hypotheses were tested in this method.

The norms established for A.T.D.P. Form B are separate for male and female as females tend to score slightly higher (or more favorably). Comparisons of the Fairview College student groups have been, therefore, separated by sex.

Findings Relative to the Hypotheses Under Investigation

HO<sub>1</sub> There is no significant difference between the mean score of the female control students and the norm established for Form B of the A.T.D.P. scale.

Table 3. Pooled Variance Estimate - Hypothesis I

<u>N</u>	<u>VALUE</u>	<u>S. ERROR</u>	<u>t VALUE</u>	<u>d.f.</u>	<u>t PROB.</u>
Female 42	-9.1405	2.5895	-3.5299	135	.001

In contrasting the mean score of the female control students with the A.T.D.P. norm, the computed t value was significantly greater than the tabular t value at the .05 level.

The null hypothesis was rejected.

Discussion: The results of this test indicated that the female control group students have a significantly more negative attitude towards the developmentally disabled than the attitudes of females in general, as measured by the revised A.T.D.P. and as compared to the norm established for Form B. This finding was significant at the .001 level which indicated a marked difference from the norm.

Ho<sub>2</sub> There is no significant difference between the mean score of the male control students and the norm established for Form B of the A.T.D.P. scale.

Table 4. Pooled Variance Estimate - Hypothesis II

<u>N</u>	<u>VALUE</u>	<u>S. ERROR</u>	<u>t VALUE</u>	<u>d.f.</u>	<u>t PROB.</u>
Male 2	-12.6600	12.2493	-1.0335	195	.303

In contrasting the mean score of the male control students with the A.T.D.P. norm, the computed t value was not significantly greater than the tabular t value at the .05 level.

The null hypothesis was not rejected.

Discussion: The results of this test indicated that the male control group students do not have a significantly different attitude towards the developmentally disabled than the attitude of males in general, as measured by the revised A.T.D.P. and as compared to the norm established for Form B. This finding should be interpreted with caution considering that only two subjects were surveyed in this category.

H<sub>03</sub> There is no significant difference between the mean score of the female short-term students and the norm established for Form B of the A.T.D.P. scale.

Table 5. Pooled Variance Estimate - Hypothesis III

<u>N</u>	<u>VALUE</u>	<u>S. ERROR</u>	<u>t VALUE</u>	<u>d.f.</u>	<u>t PROB</u>
Female 12	-7.70000	4.8444	-1.5895	135	.114

In contrasting the mean score of the female short-term students with the A.T.D.P. norm, the computed t value was not

significantly greater than the tabular t value at the .05 level.

The null hypothesis was not rejected.

Discussion: The results of this test indicated that the female short-term students do not have a significantly different attitude towards the developmentally disabled than the attitude of females in general, as measured by the revised A.T.D.P. and as compared to the norm established for Form B. This finding should be interpreted with caution considering the comparatively small sample size of 12 female subjects out of the 102 short-term students included in the analysis (two of the short-term students did not code the appropriate identification part of the questionnaire and were, therefore, not included in the analysis).

H<sub>04</sub> There is no significant difference between the mean score of the male short-term students and the norm established for Form B of the A.T.D.P. scale.

Table 6. Pooled Variance Estimate - Hypothesis IV

<u>N</u>	<u>VALUE</u>	<u>S. ERROR</u>	<u>t VALUE</u>	<u>d.f.</u>	<u>t PROB.</u>
Male 90	-12.2156	1.8260	-6.6897	195	.000

In contrasting the mean score of the male short-term students with the A.T.D.P. norm, the computed t value was significantly greater than the tabular t value at the .05 level.

The null hypothesis was rejected.

Discussion: The results of this test indicated that the male short-term students do have a significantly more negative attitude towards the developmentally disabled than the attitude of males in general, as measured by the revised A.T.D.P. and as compared to the norm established for Form B. This finding was significant at the  $P < .001$  level which indicated a marked difference from the norm.

H<sub>05</sub> There is no significant difference between the mean score of the female long-term students and the norm established for Form B of the A.T.D.P. scale.

Table 7. Pooled Variance Estimate - Hypothesis V

<u>N</u>	<u>VALUE</u>	<u>S. ERROR</u>	<u>t VALUE</u>	<u>d.f.</u>	<u>t PROB.</u>
Female 83	-9.8114	1.8420	-5.3265	135	.000

In contrasting the mean score of the female long-term students with the A.T.D.P. norm, the computed t value was



significantly greater than the tabular  $t$  value at the .05 level.

The null hypothesis was rejected.

Discussion: The results of this test indicated that the female long-term students do have a significantly more negative attitude towards the developmentally disabled than the attitude of females in general, as measured by the revised A.T.D.P. and as compared to the norm established for Form B. This finding was significant at the  $P < .001$  level which indicated a marked difference from the norm.

$H_{06}$  There is no significant difference between the mean score of the male long-term students and the norm established for Form B of the A.T.D.P. scale.

Table 8. Pooled Variance Estimate - Hypothesis VI

<u>N</u>	<u>VALUE</u>	<u>S. ERROR</u>	<u>t VALUE</u>	<u>d.f.</u>	<u>t PROB.</u>
Male 103	-13.3542	1.7069	-7.8236	195	.000

In contrasting the mean score of the male long-term students with the A.T.D.P. norm, the computed  $t$  value was

significantly greater than the tabular t value at the .05 level.

The null hypothesis was rejected.

Discussion: The results of this test indicated that the male long-term students do have a significantly more negative attitude towards the developmentally disabled than the attitude of males in general, as measured by the revised A.T.D.P. and as compared to the norm established for Form B. This finding was significant at the  $P < .001$  level which indicated a marked difference from the norm.

### Summary

An important finding that seemed apparent from the analysis was that, overall, the non-developmentally disabled students at Fairview College held significantly more negative attitudes toward the developmentally disabled than the norms established for the A.T.D.P. - B.

This assumption is based on a rejection of four of the six related hypotheses. Significant differences occurred between the A.T.D.P. norms and group means of control females, short-term males and both male and female long-term students at the .001 level of significance or beyond. No significant difference was found with male control group students (N=2) or female short-term students (N=12). The comparatively small number of subjects in the latter two groups necessitates

caution being employed in interpreting these two study findings.

Contrasting Group Means of Fairview College  
Students With Each Other

The second purpose of this study was to measure differences in the attitudes of various groups of Fairview College students toward the developmentally disabled. The null hypotheses that there are no significant differences in the mean scores of long-term, short-term, control and developmentally disabled students were tested. Again, a one-way analysis of variance using the F statistic tested null Hypotheses VII through X. Results of the analysis of variance are included in Appendices. Significant testing was conducted at the .05 level.

Findings Relative to the Hypotheses Under Investigation

H<sub>07</sub> There is no significant difference between the mean scores of the control and the short-term students.

Table 9. Pooled Variance Estimate - Hypothesis VII

<u>CONTRAST 1</u>	<u>VALUE</u>	<u>S. ERROR</u>	<u>t</u>	<u>VALUE</u>	<u>d.f.</u>	<u>t</u>	<u>PROB.</u>
Control & Short-term	5.1373	3.1089	1.6524	335	.099		

In contrasting the mean score of the control group of students with that of the short-term students, the computed t value was not significantly greater than the tabular t value at the .05 level.

The null hypothesis was retained.

Discussion: The results of this test indicated that there was no significant difference in attitude between students who attended at two other campuses of Fairview College, as compared with those students who attended at the Fairview campus for a period of four months or less.

H<sub>0</sub> There is no significant difference between the mean scores of the control students and the long-term students.

Table 10. Pooled Variance Estimate - Hypothesis VIII

<u>CONTRAST</u> 2	<u>VALUE</u>	<u>S. ERROR</u>	<u>t VALUE</u>	<u>d.f.</u>	<u>t PROB.</u>
Control & Long-term	4.1765	2.8881	1.4461	335	.149

In contrasting the mean score of the control group of students with that of the short-term students, the computed t value was not significantly greater than the tabular t value at the .05 level.

The null hypothesis was retained.

Discussion: The results of this test indicated that there was no significant difference in attitude between students who attended at two other campuses of Fairview College as compared with those students who attended at the Fairview campus for a period longer than four months per year.

H<sub>09</sub> There is no significant difference between the mean scores of the short-term and long-term students.

Table 11. Pooled Variance Estimate - Hypothesis IX

<u>CONTRAST</u> <u>3</u>	<u>VALUE</u>	<u>S. ERROR</u>	<u>t VALUE</u>	<u>d.f.</u>	<u>t PROB.</u>
Short-term & Long-term	.9608	2.1217	.4528	335	.651

In contrasting the mean score of the short-term group of students with that of the long-term students, the computed t value was not significantly greater than the tabular t value at the .05 level.

The null hypothesis was retained.

Discussion: The results of this test indicated that there was no significant difference in attitude between students who attended programs at the Fairview campus for a

period of less than four months per year as compared to students who attended for longer periods of time.

H<sub>010</sub> There is no significant difference between the mean scores of the developmentally disabled students and the non-developmentally disabled students.

Table 12. Pooled Variance Estimate - Hypothesis X

<u>CONTRAST</u> <u>4</u>	<u>VALUE</u>	<u>S. ERROR</u>	<u>t VALUE</u>	<u>d.f.</u>	<u>t PROB.</u>
Dev. Disabled & Non-Dev. Disabled	-34.8721	7.1250	-4.8943	335	.000

In contrasting the mean score of the developmentally disabled with the mean score of the non-developmentally disabled, the computed t value was significantly greater than the tabular t value at the .05 level.

The null hypothesis was rejected.

Discussion: The results of this test indicated that the developmentally disabled students have a significantly more positive attitude towards themselves than the attitude held by the non-developmentally disabled towards their peers in the Transitional/Vocational Program. This finding was significant at the  $P < .001$  level which indicated a marked difference in

the scores and attitude as measured by the revised A.T.D.P. - B. This finding must be interpreted with caution based on the small sample size of N=6 (developmentally disabled students).

### Summary

An important finding that seemed apparent from the analysis was that the non-developmentally disabled students at Fairview College held significantly more negative attitudes toward the developmentally disabled than the developmentally disabled held of themselves.

The authors of the A.T.D.P. advised that it is likely that the disabled who complete the survey will tend to think of themselves when responding to the questions. The mean score of the developmentally disabled group was, in fact, at least ten points higher than norms established for disabled for A.T.D.P. - B. This finding was not tested for a significant difference, but it can be assumed that self-concept among the developmentally disabled is relatively high.

The control group mean score is higher than both the short-term and long-term students but only by four and five points which was not significant at the .05 level. This finding might suggest that past efforts at the Fairview campus to positively alter attitudes of non-disabled students have not evoked much change.

### Demographic Data

Demographic data were collected including age, sex, educational attainment and previous contact with the developmentally disabled.

A four-way analysis of variance using the F statistic tested hypothesis VIII. The four-way classification of analysis of variance applies where four factors or variables are considered together. The .05 level of significance was again used to test the null hypothesis.

### Findings Relative to the Hypothesis Under Investigation

HO<sub>11</sub> There is no significant difference between the mean scores of groups with certain demographic variables.

The following characteristics were the independent variables associated with each of the hypotheses:

1. Age of the subjects (20 or younger or over 20).
2. Sex of the subject.
3. Level of education of the subjects (grade 12 graduate or not).
4. Level of previous contact of the subjects with developmentally disabled people (limited contact, considerable contact, developmentally disabled family member).

A description of the sub-populations appears as Appendix F.



Table 13. Analysis of Variance - Hypothesis XI

<u>SOURCE OF VARIATION</u>	<u>SUM OF SQUARES</u>	<u>df</u>	<u>MEAN SQUARE</u>	<u>F</u>	<u>SIGNIFICANCE of F</u>
Main Effects	2450.533	5	490.107	1.609	.157
AGE	31.901	1	31.901	.105	.746
SEX	573.665	1	573.665	1.883	.171
GRAD	182.681	1	182.681	.600	.439
CONTACT	1744.230	2	872.115	2.863	.059
2-Way Interactions	3115.510	9	346.168	1.136	.337
AGE SEX	737.352	1	737.352	2.420	.121
AGE GRAD	12.035	1	12.035	.040	.843
AGE CONTACT	611.640	2	305.820	1.004	.368
SEX GRAD	191.655	1	191.655	.629	.428
SEX CONTACT	1129.716	2	564.858	1.854	.158
GRAD CONTACT	11.376	2	5.688	.019	.982
3-Way Interactions	3131.691	7	447.384	1.468	.178
AGE SEX GRAD	1.930	1	1.930	.006	.937
AGE SEX CONTACT	58.206	2	29.103	.096	.909
AGE GRAD CONTACT	1768.166	2	884.083	2.902	.056
SEX GRAD CONTACT	1192.407	2	596.203	1.957	.143

In contrasting the scores of subjects according to the demographic variables of age, sex, educational attainment and previous contact with the developmentally disabled, no significant differences were identified. Testing was undertaken using a four-way analysis of variance at a significance level of .05

The null hypothesis was retained.

Discussion: The results of this test indicated that there was no significant difference in the attitude of groups

of students as separated by the four demographic variables or by interactions among the variables.

### Summary

The authors of the A.T.D.P. had previously found that female subjects fairly consistently exhibited more positive attitudes toward the disabled as measured by the A.T.D.P. to the point where special norms were created for females and males. Age and educational attainment are closely inter-related and have been often equivocal in other research findings as have been those studies that examined for the effects of previous contact. Previous contact can positively or negatively affect attitude formation and change depending on the structure and perception of the experience.

Finding no significant differences among demographic variables is particularly unexpected with regard to sex. No apparent explanation is available to account for the lack of significant difference among the variables in this study.

### Absolute Versus Relative Questions

An analysis was conducted to determine if there was a significant difference in the response from the total sample to questions on the revised A.T.D.P. - B that are of an absolute or relative nature. Absolute questions refer



Discussion: When the means of responses to questions on absolute versus relative nature were contrasted, the computed t value was greater than the tabular t value at the  $P < .001$  level. The difference in numbers of questions (16 versus 14) was compensated for in the statistical analysis. The overall response to questions of an absolute nature was more favorable than to relative types of questions.

Because of this finding, an analysis of variance was rerun on contrasting the long-term, short-term, developmentally disabled and control groups of students (Appendix G and H). Similar results occurred with the only significant difference remaining with the developmentally disabled group mean score as compared with the other three groups.

Table 15. Pooled Variance Estimate - Absolute Questions

<u>CONTRAST</u>	<u>VALUE</u>	<u>S. ERROR</u>	<u>t VALUE</u>	<u>d.f.</u>	<u>t PROB.</u>
Control & Short-term	-2.5940	1.5999	-1.6214	335	.106
Control & Long-term	-1.4025	1.4862	-.9436	335	.346
Short-term & Long-term	-1.1915	1.0918	-1.0913	335	.276
Dev. Disabled & Non-Dev. Disabled	16.8143	3.6666	4.5858	335	.000

Table 16. Pooled Variance Estimate - Relative Questions

<u>CONTRAST</u>	<u>VALUE</u>	<u>S. ERROR</u>	<u>t VALUE</u>	<u>d.f.</u>	<u>t</u>	<u>PROB.</u>
Control & Short-term	-2.5396	1.9126	-1.3278	335		.185
Control & Long-term	-2.8719	1.7768	-1.6164	335		.187
Short-term & Long-term	.3323	1.3053	.2546	335		.799
Dev. Disabled & Non-Dev. Disabled	18.0502	4.3833	4.1179	335		.000

### Summary

A finding apparent from this analysis is that A.T.D.P. - B consists of two subscales including absolute versus relative type questions. Absolute questions refer directly to the developmentally disabled, without comparison to non-developmentally disabled. Relative questions compare the developmentally disabled with other people.

From repeating the analysis of variance of the contrasts between groups of Fairview College students and finding similar results, it appears that the two scales do make the same discriminations.

Table 17. Summary of Findings Related to the Hypotheses

	Pooled Variance Estimates <u>CONTRAST</u>	<u>t</u> <u>PROB.</u>	<u>DECISION</u>
Hypothesis I	Female Control and A.T.D.P. Norms	.001	Reject Ho
Hypothesis II	Male Control and A.T.D.P. Norms	.303	Retain Ho
Hypothesis III	Female Short-term and A.T.D.P. Norms	.114	Retain Ho
Hypothesis IV	Male Short-term and A.T.D.P. Norms	.000	Reject Ho
Hypothesis V	Female Long-term and A.T.D.P. Norms	.000	Reject Ho
Hypothesis VI	Male Long-term and A.T.D.P. Norms	.000	Reject Ho
Hypothesis VII	Control and Short-term	.099	Retain Ho
Hypothesis VIII	Control and Long-term	.149	Retain Ho
Hypothesis IX	Short-term and Long-term	.651	Retain Ho
Hypothesis X	Developmentally Disabled and Non-Developmentally Disabled	.000	Reject Ho
Hypothesis XI	Demographic Variables	F PROB.	
	Age	.746	
	Sex	.171	
	Educational Attainment	.439	
	Previous Contact	.059	
			Retain Ho

## CHAPTER V

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The following chapter in this study is presented in the following format:

1. The compendium of the research.
2. The selected findings and conclusions of this investigation.
3. The recommendations and implications for further action and study.

#### Summary

This section outlines the purpose objectives, hypotheses and research design of the study.

The primary purpose in conducting this research was to examine the attitudes of non-disabled college students toward their developmentally disabled peers attending the same college. Specifically, it examined the attitudes of non-disabled students toward the developmentally disabled students in the Transitional/Vocational Program at the Fairview campus of Fairview College, Alberta, Canada.

Previous researchers have tended to focus on attitudes toward a wide variety of disabilities, with often contradictory results. Much of the research on mild mental disabilities has focused on pre-adult subjects. A narrowly defined object referent group consisting of seldom studied adult developmentally disabled, in a post-secondary situation, has provided a unique opportunity to contribute to solidifying an often equivocal body of knowledge.

#### Objectives of the Study

This research was undertaken with the following objectives in mind.

1. Review literature related to attitudes toward the developmentally disabled adult student.
2.
  - a. Identify and modify an existing instrument to assess attitudes toward the developmentally disabled adult student.
  - b. Present the instrument to students at Fairview College.
  - c. Examine the students' attitudes using the methodology developed.
3. Utilize findings to prepare general recommendations for the promotion of positive attitudes toward the developmentally disabled.

#### Hypotheses of the Study

- Ho<sub>1</sub> There is no significant difference between the mean score of the female control students



and the norm established for Form B of the A.T.D.P. scale.

- H02 There is no significant difference between the mean score of the male control students and the norm established for Form B of the A.T.D.P. scale.
- H03 There is no significant difference between the mean score of the female short-term students and the norm established for Form B of the A.T.D.P. scale.
- H04 There is no significant difference between the mean score of the male short-term students and the norm established for Form B of the A.T.D.P. scale.
- H05 There is no significant difference between the mean score of the female long-term students and the norm established for Form B of the A.T.D.P. scale.
- H06 There is no significant difference between the mean score of the male long-term students and the norm established for Form B of the A.T.D.P. scale.
- H07 There is no significant difference between the mean scores of the control students and the short-term students.
- H08 There is no significant difference between the mean scores of the control students and the long-term students.
- H09 There is no significant difference between the mean scores of the short-term students and the long-term students.
- H010 There is no significant difference between the mean scores of the developmentally disabled students and the non-developmentally disabled students.
- H011 There is no significant difference between the mean scores of groups with certain demographic variables.

The following characteristics were the independent variables associated with the hypotheses:

1. Age of the subjects
2. Sex of the subjects
3. Level of education of the subjects
4. Level of previous contact of the subjects with developmentally disabled people

An analysis was also conducted to determine if there was a significant difference in the response from the total sample to questions on the revised A.T.D.P. - B that are of an absolute or a relative nature.

#### Selected Findings

Findings 1, 3, and 4 showed a significant difference at the  $P < .05$  level.

1. The non-developmentally disabled students tended to have a negative attitude towards their developmentally disabled peers as compared with the norms established for A.T.D.P. - B.
2. There were no significant differences demonstrated between the various groups of non-disabled students as separated into control, short-term and long-term groupings. Nor were any significant differences identified by analyzing selected demographic vari-

ables including: age, sex, educational attainment or previous contact.

3. The developmentally disabled students have a favorable attitude towards themselves as compared to the attitude held by their non-disabled peers towards the developmentally disabled.
4. The A.T.D.P. - B consists of two subscales including absolute and relative questions. Absolute questions refer directly to the developmentally disabled, without comparison to non-developmentally disabled (i.e., "People who are developmentally disabled should not have to pay income taxes"). Relative questions compare the developmentally disabled with other people (i.e., "Developmentally disabled workers can be as successful as other workers").

### Conclusions

These conclusions interpret the selected findings resulting from the research as well as address the objectives as identified under the purpose of the study. The discussion that follows is presented in relation to the stated objectives.

Objective 1. Review the literature related to attitudes toward the developmentally disabled.

Researchers in the field of attitudes toward disabled persons have examined a variety of facets of this complex subject. Results of such studies have yielded equivocal

findings. Some important conclusions may, however, be drawn from a review of the literature.

Conclusion A. The mainstreaming movement, particularly as it applies to the mentally retarded, has encountered limited success (McCann, Semmel and Nevin, 1985).

Conclusion B. Studies on the effects of labelling the mentally retarded have demonstrated that some labels are more acceptable than others (Hollinger and Jones, 1970 and Belinkoff, 1974). More importantly, it has also been discovered that only a small percentage of the population can accurately distinguish between various levels of mental retardation (Gottlieb, 1975).

Conclusion C. Studies of professionals (particularly educators) have tended to show more favorable attitudes toward the mentally retarded (Semmel, 1959 and Goldstein, 1978). Studies of community attitudes, in general, have tended to reveal less than positive attitudes toward the mentally retarded (Gottlieb and Corman, 1975; Sandler and Robinson, 1981, and Roth and Smith, 1983).

Conclusion D. Certain tentative assumptions have been drawn from previous research in regard to selected demographic variables (more positive attitudes toward the disabled are held by females and understanding tends to increase with age, educational attainment and structured contact). These

assumptions remain largely equivocal and were not supported by the results of this research.

Conclusion E. One of the most important conclusions that may be drawn from the review of the literature is that efforts to favorably influence attitudes toward the disabled that employ contact with the disabled in the treatment, must be carefully structured (Yuker, Block and Youngg, 1970, and Yuker, 1986).

Conclusion F. Lastly, particularly in terms of future research, is the revelation of the existence of a hierarchy of disabilities (Jones, Gottfried and Owens, 1966, and Jones, 1974). This conclusion, in concert with findings of this study of an overall negative attitude towards students in the Transitional/Vocational Program, suggests the possible existence of a hierarchy of acceptability or status of programs of study in post-secondary educational institutions.

Objective 2A. Identify and modify an existing instrument to assess attitudes toward the developmentally disabled adult student.

Objective 2B. Present the instrument to students at Fairview College. (The instrument was presented to 342 Fairview College students in February/March, 1986. Demographic data were presented at the conclusion of Chapter IV on page 102, Table 17.)

Objective 2C. Examine the students' attitudes using the methodology developed.

Conclusion A. Several of the most prolific researchers in the field of attitudes toward disabled persons have concurred that using standardized instruments would benefit the consistency of study findings (Yuker, 1986, and Gottlieb, 1986). The A.T.D.P. is considered to be one of the few instruments with sufficient validity for research (Antonak, 1986). Yuker provided permission to use and alter the A.T.D.P. by allowing the substitution of the words "developmentally disabled" for "disabled" where appropriate and advised that the norms established for the instrument would remain sufficient for analysis.

Conclusion B. Yuker, Blocker and Youngg (1970) had assumed that having a general descriptor ("disabled") would tend to elicit a less inhibited response on the survey (less of an effect of social desirability) and, therefore, more negative scores. Gottlieb's (1975) call for a specific object referent was supported in the review of the literature:

- i) Mental retardation is one of the least socially acceptable of disabling conditions (Tringo, 1976).
- ii) Mildly mentally retarded (when discriminated from those more severely retarded) receive more favorable attitudes than trainable retardates (Harth, 1981).

- iii) Most people have difficulty discriminating among the various levels and causes of mental retardation (Gottlieb, 1975).

To specify the object referent the A.T.D.P. - B was revised by inserting the word "developmentally" before "disabled" where appropriate. The study also carefully identified the object referent group as educably mentally disabled adults, engaged in a program of studies designed to enable them to gain employment and lead independent lives.

Conclusion C. Based on the analysis of the data comparing the attitude of non-disabled college students towards the developmentally disabled, with the norms established for the A.T.D.P. - B, it may be concluded that there was, overall, a less than positive attitude. Scores were generally significantly lower than the norms for the Fairview College non-disabled students, thus indicating a largely unfavorable attitude held by much of the study population, as measured by the A.T.D.P.

As has been established by research over the last forty years, attitudes toward the disabled are often unfavorable. Scores on the A.T.D.P. close to the norm, then, would indicate a less than favorable attitude and a potential focus for initiatives designed to improve attitudes.

Conclusion D. The only group of Fairview College students who differed significantly from the others in

contrasting mean scores was the developmentally disabled. The developmentally disabled students scored considerably higher than the norms established for the disabled on the A.T.D.P. - B, thus indicating a higher than average self-concept. There are special norm tables for all forms of the A.T.D.P. which are six to nine points higher than the norms for the non-disabled. Though previous research has found higher scores for the disabled, caution should be used in drawing assumptions concerning the attitudes of the developmentally disabled because of the small sample size in this study of N=6.

There were no significant differences among the other three groups of students with only one point separating the group mean scores of the short-term versus the long-term students. The control group mean score was four points higher than the long-term group and five points higher than the short-term group. Although these differences were not significant at the  $P < .05$  level, the findings might suggest that the type of exposure to the developmentally disabled students at the Fairview campus, at the time of study, could be promoting negative stereotyping.

Conclusion E. No significant differences were discovered when examining the demographic variables of age, sex,



educational attainment or previous contact. The least equivocal one of these four in previous research has been the variable of sex. The A.T.D.P. has established special norms for female subjects because of consistently slightly higher scores. Explanations for the lack of significant differences discovered on these variables are unavailable.

Conclusion F. From an analysis of the data using a t-test, there is a significant difference between responses to those questions of an absolute versus a relative nature. The overall response to questions of an absolute nature was more favorable than to the relative type of questions. On absolute questions, respondents may have reflected more generally on the nature of man or the state of society than when forced into comparisons (probably of themselves) to the developmentally disabled, thus eliciting a more negative response.

Yuker, Block and Youngg (1970) acknowledged that some investigators have suggested that the A.T.D.P. scale is not factorially pure. The authors responded by saying "the criticism that the A.T.D.P. is not unidimensional is undoubtedly justified since it is questionable whether any attitude as complex as the one it attempts to measure could be unitary," (p. 38).

A number of research studies have been conducted which have attempted to determine the nature of the underlying factors.

The authors contend that a factor analytic approach to the ATDP is not particularly useful, in part because of the relatively small number of items, and in part because no attempt was made to sample the large universe of possible items relating to attitudes toward disabled persons. Because the ATDP is so short, any factors that emerged would be even shorter and would have lower reliability. It would be necessary to elaborate on the factors to develop longer scales, which would result in a different and perhaps better instrument. However, the potential gain in reliability and representativeness of items might be balanced by a loss in ease of administration and scoring. In addition, studies appear to indicate that while a number of independent factors might emerge, typically the major factor tends to account for a large proportion of total variance. Such a factor frequently represents a "general" attitude factor which is analogous to what the authors believe the ATDP measures in addition to its other factorial components. (p. 40)

An analysis of variance was undertaken to determine if separating the test into two halves on the basis of absolute and relative questions would affect the result of the group contrasts. No significant differences from the previous analysis of variance results were discovered.

Objective 3. Utilize findings to prepare general recommendations for the promotion of positive attitudes toward the developmentally disabled.

General recommendations will be presented in the following section.

### Recommendations for Action

Attitudes toward developmentally disabled adult students have not been formally studied. From a review of related literature, it was apparent that attitudes toward the disabled, particularly the mentally disabled, are generally less than favorable. Negative attitudes of Fairview College students were found to be even more pronounced than the norms established for the Attitude Towards Disabled Persons Scale - Form B. While the scope of this study was limited to examining the attitudes of students at one college, the findings do corroborate the existence of a less than favorable attitude towards the disabled. On the basis of the review of the literature and the results of this study, the following recommendations are made with a view to improving often equivocal results of mainstreaming efforts.

1. Other post-secondary institutions offering transitional/vocational programs should examine the attitudes of the college community toward the developmentally disabled student to determine if negative attitudes exist.

2. Where attitudes are found to be less than favorable, a comprehensive intervention designed to improve the attitudes of non-disabled staff and student populations toward the developmentally disabled should be instituted.

Specific Recommendations From the Review of the Literature

- A. The developmentally disabled students should be encouraged to learn to discuss their disabilities at appropriate social opportunities, in recognition of the ambivalent and uncertain feelings others in the college community are likely to have.
- B. In addition to the continuation of the growth initiatives directed at the developmentally disabled and their families, the intervention should also be targeted at associational groups, the institution and community.
- C. Remedial work may have to be undertaken through intrusive counseling for those developmentally disabled students with low self-esteem using the A.T.D.P. as a measure of self-concept.
- D. Remedial work may have to be undertaken through intrusive counseling with students identified as having particularly negative attitudes (via discipline incident reports, residence, reports, etc.).

- E. Preventative efforts should include self-help improvement groups that encourage cooperative and creative problem solving for the developmentally disabled. Staff involved with the program must feel confident and comfortable in working with the students. Special professional development opportunities should be made available. Student leaders in governance, residences and activities should be provided information and structured opportunities for contact early in their tenure. Their acceptance of the worth and appropriateness of the Transitional/Vocational Program could assist in creating a more receptive atmosphere for developmental efforts.
- F. Selected student leaders could be trained to act as consultants in briefing incoming classes about the program or to assist with cooperative, structured events. These events must: 1) engage developmentally disabled students who portray competence (to avoid negative stereotyping), 2) emphasize abilities rather than disabilities, 3) be cooperative and directed toward common goal achievement, and 4) take place where social norms promote equal status.
- G. Available media should be employed in an effort to educate all college personnel and, where possible, the community as well. A ten to fifteen minute videotape describing the transitional/vocational program emphasizing the

abilities and successes of developmentally disabled students could be effective. Newspaper articles, institutional publications, radio interviews, et cetera should also emphasize the skills and potential of the transitional/vocational students.

#### Recommendations for Further Study

1. The developmentally disabled students should be given the A.T.D.P. as a measure of self-concept as a pre-enrollment and post-graduation test. The long-term effects of transitional/vocational programs on self-concept should also be examined.
2. Attitudinal examination (such as was undertaken in this study) should be extended to faculty, support and administrative staff. In particular, personnel who are involved with the transitional/vocational program as instructors, student services staff and those who work with the students in the placements and practica should be given the revised A.T.D.P. - B in an effort to identify any less than favorable attitudes toward the developmentally disabled.
3. More extensive and specific demographic descriptors should be used in an effort to identify groups of students

with particularly negative attitudes, though such results were not forthcoming in this study.

4. Similar attitudinal studies should occur at other institutions that offer transitional/vocational programs to augment the results of this study.

5. A multi-trait multi-method research design should be employed with a social distance scale or opinionnaire to measure the perceived appropriateness of transitional/vocational programs at post-secondary institutions. This method would also be used to further establish the validity of the Revised A.T.D.P. - B.

6. The A.T.D.P. should be given to non-disabled students as a pre- and post-test with an extensive intervention serving as the treatment. A longitudinal study testing for long-term change would be an important contribution to the field of the study of attitudes toward the disabled.

7. Studies that include a behavioral element in the research design would assist in furthering the understanding of the nature of the attitude-behavior connection. (How does

attitude affect behavior? How is attitude reflected in behavior?)

8. A study that examined the effect of using a general descriptor such as "disabled" as compared to a specific descriptor such as "developmentally disabled" would contribute to establishing the most appropriate instrument for this type of attitudinal study.

9. Further study should be undertaken to identify the underlying factors contributing to the unusually unfavorable attitudes of Fairview College students toward their developmentally disabled peers (i.e., a study examining the attitudes of a rural student population toward the developmentally disabled as contrasted to the attitudes of an urban student population).

10. A study that compared the attitudes of cohorts who attended school since the onset of the mainstreaming movement with older cohorts could make an important contribution toward establishing whether or not an overall positive change has occurred in society's perception of disabled people.



11. Additional research should be undertaken which further explores the extent of the existence of a hierarchy of acceptability or status of certain types of programs compared to others in post-secondary institutions (i.e., university transfer, technical, vocational, skill upgrading, literacy, transitional/vocational, etc.). The awareness of such hierarchies by various sectors of the college community and the resulting impact of such awareness should also be the focus of further study.

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## APPENDICES

## APPENDIX A

FORM B 12/20/64

ATDP SCALE

READ EACH STATEMENT AND PUT AN "X" IN THE APPROPRIATE COLUMN ON THE ANSWER SHEET. DO NOT MAKE ANY MARKS ON THE QUESTION SHEETS.

PLEASE ANSWER EVERY QUESTION

---

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 persons 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 people are harder to get along with than are 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.

## APPENDIX A (CONTINUED)

PAGE 2

ATDP SCALE

FORM B

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 B (CONTINUED)

(1) I agree very much (2) I agree pretty much (3) I agree a little  
 (4) I disagree a little (5) I disagree pretty much (6) I disagree very much

11. Developmentally disabled people are often less aggressive than normal people.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
12. Most developmentally disabled persons get married and have children.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
13. Most developmentally disabled persons do not worry any more than anyone else.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
14. Employers should not be allowed to fire developmentally disabled employees.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
15. Developmentally disabled people are not as happy as non-developmentally disabled ones.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
16. Severely mentally disabled people are harder to get along with than those with minor disabilities.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
17. Most developmentally disabled people expect special treatment.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
18. Developmentally disabled should not expect to lead normal lives.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
19. Most developmentally disabled people tend to get discouraged easily.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
20. The worst thing that could happen to a person would be for him to be very severely injured.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
21. Developmentally disabled children should not have to compete with non-disabled children.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
22. Most developmentally disabled people do not feel sorry for themselves.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
23. Most developmentally disabled people prefer to work with other developmentally disabled people.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
24. Most severely disabled persons are not as ambitious as other people.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
25. Developmentally disabled persons are not as self-confident as normal persons.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
26. Most developmentally disabled persons don't want more affection and praise than other people.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
27. It would be best if a developmentally disabled person would marry another developmentally disabled person.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
28. Most developmentally disabled people do not need special attention.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
29. Developmentally disabled persons want sympathy more than other people.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>
30. Most developmentally disabled persons have different personalities than normal people.	1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J <input type="radio"/>

THANK YOU FOR PARTICIPATING  
 HEAR PAGE (SIDE NO. 2)

Appendix C Table 18. Analysis of Variance - Female Subjects

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	3	1432.7431	477.5810	1.696	.1709
WITHIN GROUPS	135	38018.8828	281.6214		
TOTAL	138	39451.6259			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR
LONG-TERM	83	-9.8114	16.8665	1.8513
SHORT-TERM	12	-7.7000	15.2740	4.4092
DEV. DISABLED	2	17.0500	24.7487	17.5000
CONTROL	42	-9.1405	16.7572	2.5857
TOTAL	139	-9.0399		

  

GROUP	MINIMUM	MAXIMUM	95 PCT CONF INT FOR MEAN
LONG-TERM	-53.4500	64.5500	-13.4943 TO -6.1286
SHORT-TERM	-34.4500	14.5500	-17.4046 TO 2.0046
DEV. DISABLED	-.4500	34.5500	-205.3085 TO 239.4085
CONTROL	-43.4500	18.5500	-14.3624 TO -3.9186
TOTAL	-53.4500	64.5500	

Appendix D Table 19. Analysis of Variance - Male Subjects

SOURCE	D.F.	SUM SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEENGROUPS	3	6622.7655	2207.5885	7.356	.000L
WITHINGROUPS	195	58518.0887	300.0928		
TOTAL	198	65140.8543			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR
LONG-TERM	103	-13.3542	17.5795	1.7322
SHORT-TERM	90	-12.2156	16.6230	1.7522
DEV. DISABLED	4	28.0900	22.8236	11.411
CONTROL	2	-12.6600	28.9914	20.5000
TOTAL	199	-11.9992		

  

GROUP	MINIMUM	MAXIMUM	95 PCT CONF INT FOR MEAN
LONG-TERM	-63.1600	24.8400	-16.7899 TO -9.9184
SHORT-TERM	-50.1600	25.8400	-15.6972 TO -8.7339
DEV. DISABLED	-1.1600	51.8400	-8.2269 TO 64.4069
CONTROL	-33.1600	7.8400	-273.1371 TO 247.8171
TOTAL	-63.1600	51.8400	



Appendix E Table 20. Analysis of Variance - Contrasting Long-term Short-term, Developmentally Disabled and Control Groups

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	3	8303.0814	2767.6938	9.316	.0000
WITHIN GROUPS	335	99530.5882	297.1062		
TOTAL	338	107833.6696			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR
LONG-TERM	187	99.8235	17.5102	1.2805
SHORT-TERM	102	98.8627	16.5918	1.6428
DEV. DISABLED	6	135.6667	21.2383	8.6705
CONTROL	44	104.0000	17.0103	2.5644
TOTAL	339	100.7109		

GROUP	MINIMUM	MAXIMUM	95 PCT CONF INT FOR MEAN
LONG-TERM	47.0000	178.0000	97.2974 TO 102.3497
SHORT-TERM	60.0000	136.000	95.6038 TO 102.1217
DEV. DISABLED	109.0000	162.0000	113.3787 TO 157.9546
CONTROL	70.0000	132.0000	98.8284 TO 109.1716
TOTAL	47.000	178.0000	

Appendix F Table 21. Description of Sub-populations

CRITERION VARIABLE		SUM				
BROKEN DOWN BY		AGE				
		SEX				
		GRAD				
		CONTACT				
VARIABLE FOR ENTIRE POPULATION		SUM	MEAN	STD DEV	VARIANCE	N
		34026.0000	100.6686	18.0070	324.2519	338
AGE		11171.0000	103.4352	20.2859	411.5191	108
SEX		6363.0000	109.7069	16.6386	276.8424	58
	GRAD	5079.0000	110.4130	16.4945	272.0700	46
	CONTACT	3426.0000	110.5161	16.9939	288.7914	31
	CONTACT	1556.0000	111.1429	16.1524	260.9011	14
	CONTACT	97.0000	97.0000	0	0	1
	GRAD	1284.0000	107.0000	17.6481	311.4545	12
	CONTACT	529.0000	105.8000	13.8094	190.7000	5
	CONTACT	429.0000	109.7500	28.0045	784.2500	4
	CONTACT	316.0000	105.3333	11.5036	132.3333	3
SEX		4808.0000	96.1600	21.8178	476.0147	50
	GRAD	3183.0000	96.4545	18.0487	325.7557	33
	CONTACT	1714.0000	95.2222	15.8803	252.1830	18
	CONTACT	1094.0000	99.4545	24.3038	590.6727	11
	CONTACT	375.0000	93.7500	4.9917	24.9167	4
	GRAD	1625.0000	95.5882	28.3859	805.7574	17
	CONTACT	850.0000	85.0000	20.3142	412.6667	10
	CONTACT	775.0000	110.7143	32.8010	1075.9048	7

Appendix F (Continued)

VARIABLE FOR ENTIRE POPULATION	SUM	MEAN	STD DEV	VARIANCE	N
AGE	22855.0000	99.3696	16.7209	279.5877	230
SEX	7942.0000	100.5316	16.3510	267.3548	79
GRAD	4383.0000	101.9302	15.5064	240.4474	43
CONTACT	2482.0000	99.2800	17.9037	320.5433	25
CONTACT	1721.0000	107.5625	9.6814	93.7292	16
CONTACT	180.0000	90.0000	5.6569	32.0000	2
GRAD	3559.0000	98.8611	17.3784	302.0087	36
CONTACT	2697.0000	99.8889	17.2121	296.2564	27
CONTACT	445.0000	89.0000	19.4679	379.0000	5
CONTACT	417.0000	104.2500	15.5000	240.2500	4
SEX	14913.0000	98.7616	16.9331	286.7294	151
GRAD	9709.0000	100.0928	16.9902	288.6684	97
CONTACT	7689.0000	98.5769	16.4400	270.2732	78
CONTACT	1505.000	107.5000	19.9567	398.2692	14
CONTACT	515.0000	103.0000	13.5462	183.5000	5
GRAD	5204.000	96.3704	16.7200	279.5584	54
CONTACT	3832.0000	95.8000	15.7711	248.7282	40
CONTACT	1098.0000	99.8182	20.1585	406.3636	11
CONTACT	274.0000	91.3333	20.4042	416.3333	3
TOTAL CASES	=	341			
MISSINGCASES	=	3 DR .9 PCT.			

Appendix G Table 22. Analysis of Variance - Absolute Questions

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	3	1935.5598	645.1866	8.200	.0000
WITHIN GROUPS	335	26357.7910	78.6800		
TOTAL	338	28293.3507			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR
LONG-TERM	187	-6.2467	8.9900	.6574
SHORT-TERM	102	-5.0551	8.6228	.8538
DEV. DISABLED	6	-23.1250	9.2174	3.7630
CONTROL	44	-7.6491	8.8800	1.3387
TOTAL	339	-6.3689		

GROUP	MINIMUM	MAXIMUM	95 PCT CONF INT FOR MEAN
LONG-TERM	-44.0625	26.2500	-7.5436 TO -4.9497
SHORT-TERM	-28.1250	15.9375	-6.7488 TO -3.3615
DEV. DISABLED	30.0000	-6.5625	-32.7979 TO 13.4521
CONTROL	-25.3125	13.1250	-10.3489 TO -49.494
TOTAL	-44.0625	26.2500	

Appendix H Table 23. Analysis of Variance - Relative Questions

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	3	2343.2166	781.0722	6.946	.0002
WITHIN GROUPS	335	37669.6898	112.4468		
TOTAL	338	40012.9064			

  

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR
LONG-TERM	187	-3.3862	10.6603	.7796
SHORT-TERM	102	-3.7185	10.2974	1.0196
DEV. DISABLED	6	-22.5000	14.8461	6.0609
CONTROL	44	-6.2581	10.4773	1.5795
TOTAL	339	-4.1972		

  

CONTROL	MINIMUM	MAXIMUM	95 PCT CONF INT FOR MEAN
LONG-TERM	-43.9286	24.6429	-4.9241 TO -1.8483
SHORT-TERM	-34.2857	20.3571	-5.7411 TO -1.6959
DEV. DISABLED	-45.0000	-4.2857	-38.0798 TO -6.9202
CONTROL	-25.7143	15.0000	-9.4435 TO -3.0727
TOTAL	-45.0000	24.6429	