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Nonhandicapped Students Attitudes towards Deaf Students

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NONHANDICAPPED STUDENTS ATTITUDES TOWARDS DEAF STUDENTS

by

Patricia D. Buckney

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School of Loyola University of Chicago in
Partial Fulfillment of the Requirements for the Degree of
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VITA

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CHAPTER I

INTRODUCTION

The impact of mainstreaming upon the social development and adjustment of hearing impaired children has received only moderate emphasis in the literature (Blood, Blood, & Danhaour, 1977; Elser, 1959; Frick, 1973; Kennedy, McCauley & Williams, 1976). Many teachers and parents of hearing impaired children have expressed concern over the relative paucity of practical articles in the field's professional journals. In a review of social/personal skills research spanning 15 years, over 25 basic reports were identified as describing the nature, extent or theoretical bases of social/personal problems among hearing impaired students, yet few applied studies were noted (Schlass, 1982).

Vernon (1984) indicated that one of the most serious problems facing the American Annals of the Deaf is the limited number of articles of direct practical value to teachers and administrators, in spite of the fact that numerous investigators have documented the impact of auditory impairment on cognitive, social, and emotional development (Altschulu, 1962; Kennedy, 1973; Knapp, 1968; Myklebust, 1966; Reivich & Rolhrock, 1972). Unfortunately, these investigations have not served as impetus for developing and documenting teaching strategies practitioners can use to

enhance the social development of hearing impaired children in the regular grades.

In view of the relative scarcity of actual research on mainstreaming hearing impaired children, emphasis on integrating deaf students necessitates a closer look at all aspects of the mainstreaming process as much remains to be learned about its effects on important student outcomes such as academic achievement and social-personal development (Zegler & Muenchow, 1979).

Public Law 94-142 mandates that every handicapped child must be provided a free and appropriate educational program in the least restrictive environment. The term mainstreaming generally refers to a variety of practices intended to provide handicapped students to greater exposure to "normal learning" environments; thus for many, the least restrictive environment has been interpreted as being integrated into regular education classes (Gresham, 1982; MacMillan & Semmel, 1977). This concept was advanced on the assumption that placement of handicapped students with nonhandicapped peers would result in increased academic and social development for handicapped students (Birch, 1976; Kaufman et al., 1975), and ultimately lead to (a) increased and more positive interaction and acceptance between handicapped and nonhandicapped students; (b) a decrease in social rejection of handicapped students; and (c) handicapped students modeling socially appropriate behavior. In addition,

according to Dunn (1968), a reduction in the stigma associated with being educated in segregated special education classes.

However, the research indicates that mainstreaming, as it is typically practiced, results (a) in handicapped children being more poorly accepted and/or socially rejected by nonhandicapped peers (Ballard, Corman, Gottlieb, & Kaufman, 1977; Bryan, 1974; Morgan, (1977)); (b) in low or negative rates of social interaction between handicapped and nonhandicapped students (Bryan et al., 1976; Ray, 1974); and (c) in little, if any, beneficial modeling effects for mainstreamed handicapped children (Appoloni & Cooke, 1977; 1978; Marburg, Houston & Halmer, 1976).

Gresham (1982) concluded that the positive aspects of mainstreaming are not realized because handicapped students lack the social skills necessary for peer acceptance. In addition, Gottlieb (1980), stated that handicapped students frequently engage in social behaviors that engender negative social interaction with their nonhandicapped peers and diminish social acceptance.

Deaf students repeatedly display social skill deficits. Many parents and teachers frequently express concern about their seemingly inability to understand cause and effect relationships. Hoskins (1978) found social adjustment factors to be the biggest problems faced by most deaf students, and noted that (a) they generally have negative

concepts of themselves and hearing people (as compared to the hearing population); (b) lack the ability to anticipate consequences and construct a series of steps to plan actions towards a goal; and (c) feel the least responsible for their successes or failures (as compared to hearing populations). According to Kennedy (1973), deaf students have the rudiments of social understanding but lack the knowledge and skills important for the development of effective school and work related social competencies (adaptive behavior); positive outcomes are expected to "just happen" and the belief that they have little to do with these outcomes generally affects the development of a sense of self-efficacy.

Rosenblum (1975) indicated that social interactions with peers may be the primary relationship within which development and socialization takes place. Peer relationships provide expectations, models, reinforcement, and role playing experiences that shape a wide variety of social behaviors, attitudes and perspectives. Through interactions with peers, children directly learn attitudes, values and information unobtainable from adults, such as the nature of sexual relationships, how they are to be developed and managed, athletic activities, going to dances, fashions, etc. The majority of deaf students are segregated academically, socially, and emotionally from their hearing peers and have not been given the opportunity for more expanded and normalized learning experiences (Yates, 1979);

however, Mecham and Van Dyke (1971), concluded that deaf children can and do pick up subtleties in an environment in which they feel accepted, and free to express their true feelings.

Solutions to some of the problems related to educating deaf children were expected to emerge from mainstreaming mandates (Public Law 94-142), however, it appears that needs emanating from the effects of deafness and isolation upon the psychosocial development of these students are not being adequately met by legal and/or ethical arguments favoring mainstreaming. The results of many studies indicate that simple physical placement of handicapped children into regular classrooms does not automatically lead to social integration and acceptance by their nonhandicapped peers (Richardson & Emerson, 1970; Rosenberg & Gaier, 1977; Sheare, 1978; Shears & Jenesma, 1969); therefore, perhaps a more pragmatic justification for mainstreaming deaf students stems from social learning principles and research which emphasizes the importance of providing handicapped children with both vicarious and direct experience with normal developing peers.

According to this view, children profit by observing social behaviors and slightly more advanced social competencies (Hartup & Louge, 1975). Opportunity for social interaction with normally developing peers benefits handicapped students by providing them with an experiential context in which to develop, elaborate, modify and regulate

the expression of various interpersonal behaviors (Asher, 1978; Furman, Rahe & Hartup, 1977). Thus, the essential condition for "normal" socialization (according to social learning principles, includes vicarious experience (i.e. observation, modeling, carefully planned in sequence (Stephens, 1978)) and direct participation with normal peers; conversely, the absence of one or both of these conditions can be seen as a constraint that is likely to result in substantially altered development.

Many researchers have agreed that nonhandicapped students can be instrumental in determining the success or failure of mainstreaming efforts (Gottlieb, 1980; Westervelt & McKinley, 1980). In fact, research by Abramson (1980), Kilburn (1983), and Salend (1984) indicates that the efficacy of mainstreamed educational programs for the handicapped is related to the attitudes of the teachers and the nonhandicapped students involved in the mainstreaming process. Nonhandicapped students can facilitate the process by interacting positively and aid their handicapped peers' adjustment and ability to function in the mainstream by serving as role models, peer tutors, and friends; but, their ability to perform these roles may be affected by their attitudes towards handicapped students. Although several studies have indicated that nonhandicapped students often have less favorable attitudes towards the handicapped (Goodman et al., 1972; Parich et al., 1978; Raper et al.,

1972), most efforts to enhance the success of mainstreamed students are usually only directed towards preparations for the teachers, and not preparation of the people with whom the handicapped students spend the majority of their time (Chaffin, 1974). Ultimately, the unfavorable attitudes, feelings, and behaviors of nonhandicapped students need not exist as recent studies indicate that it is possible to change attitudes about handicaps from negative to positive at all levels of education from preschool to college (Larson, 1978; Rover, 1979; Sipple & D'Alonzo, 1977).

Apparently placing handicapped students into regular classrooms can be the beginning of an opportunity that carries with it the risk of making things worse as well as the possibility of making things better. If the integration goes badly (i.e., lack of adequate preparation of nonhandicapped peers), handicapped students could be more severely and directly stigmatized, stereotyped and rejected, ... on the other hand, if with adequate preparation, the integration goes well, ... true friendship and constructive relationships may develop between handicapped and nonhandicapped students, as mainstreaming appears to be successful only to the extent that it integrates handicapped students into constructive relationships with nonhandicapped peers.

In view of these findings, this study was designed to investigate the general valance of attitudes (positive or

negative) of hearing students towards their deaf peers, and to examine the circumstances and conditions under which the most positive attitudes are fostered in the following four groups.

1. Hearing students housed in close proximity with deaf students receiving treatment A (information and contact).
2. Hearing students housed in close proximity with deaf students receiving treatment B (information only).
3. Hearing students housed in close proximity with deaf students receiving treatment C (contact only).
4. Hearing students housed separately (no association).

The results of this investigation could provide basic information that can be used to help create regular classroom environments in which deaf students are not merely present, but are acknowledged and incorporated as members of the group with all the opportunity for human growth that such membership offers.

Long term goals relate to generating information that can be utilized to (a) ease and promote the mainstreaming of deaf students into regular classrooms, and ultimately to all realms of life, and (b) develop an awareness that all people are unique, and foster acceptance and respect for differences as exemplified by disabilities.

CHAPTER II

REVIEW OF THE LITERATURE

The philosophy of mainstreaming, which was originally articulated with respect to children who are educably mentally handicapped, has spread to include all categories of exceptional children, including those who are deaf and hard of hearing (Jones & Murphy, 1972). Mainstreaming can be accomplished through legal and administrative endorsements; integration, on the other hand, is an ongoing process of interaction that cannot be mandated, nor can it be expected to happen naturally. Educating handicapped students in the mainstream creates an opportunity for integration, but it offers little assurance that integration will actually occur.

Although school programs currently reflect an increasing emphasis on assimilating children with hearing handicaps into regular education settings, much more information about their social acceptance by nonhandicapped peers is needed for assessing the effectiveness of current programs, as well as for planning interventions to insure that the integration is accompanied by psychological acceptance by normally hearing peers.

Many researchers have expressed concerns related to the efficacy of mainstreaming efforts. Gresham's (1982b) review

of 40 studies demonstrated that, for the most part, integrated placement of handicapped children result in poor peer acceptance thus setting handicapped children up for rejection, ridicule and failure.

One major complaint has been that most of the attention related to integrating deaf students has focused upon educational requirements for mainstreaming (Emertor & Rothman, 1978), however, Levine et al. (1982) suggested that unfavorable outcomes of mainstreaming may be partially due to the values and priorities schools hold regarding academics. According to this position, mainstreaming as a social policy creates conditions that might be at odds with the predominant value schools place on the academic attainment of all students. Since the majority of mainstreamed handicapped students will generally always lag behind their nonhandicapped peers academically, it may be necessary for educators and parents to rethink the hierarchy of values for the classroom. Gresham (1982b) expressed similar views, as well as indicated that current trends regarding accountability, and minimal academic competence for all students, are not realistically applicable to all maintained handicapped children.

Ultimately, integration into the mainstream is measured by the economic independence on the part of the adult who is free to move socially and culturally among those persons whom he/she chooses, including those who are deaf and those who

are hearing. Seemingly, if educator's top priority continues to be academic attainment for all students, and given that the majority of deaf students will almost always fail to achieve at grade level (Myklebust, 1966), repeated academic failure in the regular grades will not likely result in deaf children developing a sense of self-efficacy, as according to Festinger (1954) people typically develop a view of themselves on the basis of individuals in their immediate peer group.

Integration occurs on the basis of competence and competence is acquired on the basis of early and continued success both in school and out. Bandura (1977) reconceptualized the idea of competence or mastery into his self-efficacy theory which focuses on individuals' perceptions that they can produce and regulate events in their lives. Gresham (1984) indicates that personal competence functions as a primary motivator of human behavior, however, mainstreaming, as it is typically practiced, does not appear to consider the notion of efficacy. Handicapped children are either reintegrated into regular classrooms where they have experienced academic and/or social failure, or they are placed for the first time in an environment where they have no basis for efficacy (i.e., they have no learning history in the regular classroom). The likely result is that the handicapped child will experience failure, a low sense of self-efficacy, and

exhibit behavior to avoid demands placed upon him/her in the regular class (e.g. acting out).

In the self-efficacy theory, expectations of personal efficacy or competence are based on four major sources of information: (a) performance accomplishments, (b) vicarious experiences, (c) verbal persuasion and (d) emotional arousal; of these, performance accomplishments and vicarious experiences are the most relevant for social training with handicapped children. Gresham (1983a) felt that performance accomplishments are particularly influential because they are based on personal mastery experiences and, according to Bandura (1977), repeated successes in any setting or situation heightens self-efficacy, whereas repeated failure, particularly early on, lowers efficacy. Gresham (1984) also felt that social training procedures based on a direct instructional model provide the strongest basis for promoting self-efficacy because they are based on direct performance accomplishments or mastery in the regular classroom. These include participant modeling, behavioral rehearsal, and peer initiation strategies (Cartledge & Milhern, 1978; Stephens, 1978; Strain et al., 1984).

Almost all deaf children need to be taught to be more independent and to be made more aware of accepted social behavior. Obviously, steps could and should be taken to increase their belief that they can perform behaviors that would result in beneficial outcomes in the mainstreamed

setting. If performance accomplishments provide the strongest basis for self-efficacy, then educators should schedule opportunities in the regular grades for deaf children, to repeatedly demonstrate appropriate social behaviors crucial for social acceptance in mainstreamed settings if they are to develop a strong sense of self-efficacy.

The key, however, is that these teaching strategies take place in a regular classroom climate that promotes positive interaction and acceptance of deaf students. Strain, Odom, and McConnel (1984) pointed out that nonhandicapped peers may impede the exhibition of appropriate social behaviors by handicapped students by ignoring or punishing these social behaviors; therefore, we must first focus on the behavior of nonhandicapped students in the mainstreamed classroom in terms of getting these students involved in initiating, continuing, and reinforcing positive social interactions with deaf children (Strain et al., 1984).

Attitudes

It has been shown that negative attitudes based on the general stigmatization of handicaps by society at large do exist (Bowe, 1978; Kutner, 1971). In a survey of research on attitudes towards the handicapped, Kutner (1971) concluded that "there exists a considerable residue of fear, hostility and aversion." From the beginning handicapped students are given labels such as mentally retarded, learning disabled,

deaf, emotionally disturbed, blind, etc. that have negative connotations and the negative impressions set up the strong possibility that handicapped students will be rejected by their nonhandicapped peers (Johnson, 1980).

A study by Klick, Ono, and Hastoif (1966) indicated that nonhandicapped individuals react strongly in initial encounters with handicapped peers. Hoffman (1963) stated that a handicap conjures up derogatory qualities and characteristics in the nonhandicapped individual, wherein, the handicapped person is stereotyped and the handicap may therefore serve as a "stigma" in initial and often in subsequent encounters. Other studies have noted that when given a preference for social encounters, nonhandicapped children consistently select other nonhandicapped children instead of handicapped peers (Centers & Centers, 1963; Richardson, Goodman, Hastoif & Dornsbash, 1963). In the educational environment, perhaps traditional views relative to the belief that something was wrong with the child that did not succeed in a regular academic setting, ... thus isolation in separate classes with no provision or attempts made to foster acceptance and respect for differences as exemplified by disabilities, may have fostered some negative attitudes towards handicaps.

In addition to general negative attitudes towards handicaps, specific unfavorable attitudes also exist towards deafness. Baker (1953) pointed out that although studies of

stereotypes of the deaf and hard of hearing were lacking, familiar jokes and stories about them attest that such stereotypes were wide spread. Bender (1970) has decried the ignorance in the general population about deaf people as reflected in the persistence of terms such as deaf-mutes and deaf and dumb in most languages and countries. Studies of attitudes suggest that the American population tends to be rather indifferent towards deaf people. Strong (1951) found that 50% of his subjects felt indifferent towards deaf people, while 25% disliked and 16% liked deaf people. Schroedel and Scheff (1972) found that attitudes towards deafness tended to be neutral or slightly positive across several populations.

In other studies where attitudes towards various disabilities were compared (Murphy, 1979; Murphy, Dickstein & Dripp, 1960), deafness was regarded more negatively than other disabilities. Rackway and Stevenson (1968) found attitudes toward the deaf and the blind were almost identical both in magnitude and direction, and inferred that "attitudes toward disability conditions share some generalized common elements with attitudes towards minority groups."

Deaf people report generally negative attitudes toward deafness. Schroedel and Schiff (1971) reported that the deaf people sampled in their study were consistently more negative in their attitudes towards deafness than comparable samples of hearing people. They suggested that possibly, the

attitudes of deaf people may reflect actual experiences while normal hearing persons may not have thought about their feelings towards deafness and give spuriously positive reactions. Subjective accounts written by deaf people about their experiences living in a society where most people can hear lends support to this idea (Greenmun, 1958; Stewart, 1972); thus, perhaps the tremendous handicap of deafness may be little realized except by those afflicted.

Overall, there appears to be some differences of opinions about the nature of the normal-hearing populations' attitudes towards acceptance of deaf people, however, with increased emphasis on mainstreaming deaf children into regular classrooms, it has become imperative that the normal population gain a greater understanding of the problems encountered by these students, particularly in view of the fact that these attitudes (positive, negative, or neutral) are a primary ingredient in the success or failure of mainstreaming efforts (Kilburn, 1983; Salend, 1984).

The concept of deafness is a broad and inclusive condition which encompasses a wide variety of problems, however, for the purpose of this project, deafness is defined as: a severe to profound hearing loss that was present at birth or acquired shortly after birth. To understand the handicap one must realize that deafness means more than not hearing, for the principal handicap is one of communication which is brought about by the lack of language. A profound

loss at birth or acquired shortly thereafter limits the world of experience and the normal acquisition of language.

Language enhances mental growth, social maturity, emotional stability and autonomy. The problem of learning all aspects of language as well as the social implications through senses other than hearing presents great difficulties.

The few studies which have addressed the social aspects of mainstreaming have focused primarily on the deaf students (Craig, 1965; Kennedy & Burininks, 1973). Although some consideration has been given to studying the attitudes of the normal hearing students who play a vital role in the social setting (Jacobs, 1976), much more research is needed as educators have found attitudes to be an obstacle to integrating handicapped students, and in educating handicapped children to their full potential (Bowe, 1978; Vermey, 1977).

In earlier studies of social acceptability of deaf students, Force (1956) found that deaf children were chosen less often as playmates than those with any other handicap except cerebral palsy.

The results of a similar study by Juctman and Maskowitz (1957) indicated that after six months, hearing impaired children were not any more accepted in terms of friendship nominations than they were during the first month of the school year. They concluded that reactions from hearing peers toward a deaf child are likely to be negative or

neutral than positive. In another study Force (1966), concluded that hearing aids reduce the child's status in the group; however, Elser (1959) found that children without hearing aids, i.e., those with the least visible abnormality, were significantly less accepted than those with hearing aids. None of the hearing impaired children were as acceptable as normally hearing children. Shears and Jensema (1969) also found that a visible handicap may actually reduce awkwardness between disabled and normal peers, but a communication handicap produces strain and subsequent negative reactions.

Klick, Ono, and Hastoif (1966) found that high school students' feelings toward the hearing impaired person were more distorted, ambivalent and more rigid than toward the nonhandicapped. As a result, the researcher believed that hearing impaired individuals received ambiguous social feedback about themselves, and therefore it becomes more difficult to develop more appropriate social skills and objective self-evaluation skills.

Reich et al. (1977) indicated that within hearing-impaired populations, profoundly deaf children may have more integration difficulties than hard of hearing children; in addition, mainstreaming may more negatively affect deaf children's mental health than their academic performance (Kennedy & Burininks, 1974; Reich et al., 1977).

According to Brill (1975), concern has also been

expressed that problems of communication will hamper social interactions between hearing and hearing impaired children, making the social integration of the hearing impaired child a difficult goal to attain. Results of a study by Vandell and George (1981) indicated that profoundly deaf children (although without speech) have considerable communication skills and frequently tried to initiate interactions using gestures, pantomime, and sounds. Hearing partners, on the other hand, were more likely to ignore or reject deaf children's attempt to interact, and were also unlikely to modify their initiations to take into account their deaf partners lack of hearing. They continued to talk (sometimes to the back of a deaf children) with a minimum of gestures, touches, or signs.

Shirin's (1982) study of the social interaction of partially mainstreamed hearing-impaired children with hearing peers found that the hearing-impaired interacted more frequently with hearing impaired peers and teachers than with normally hearing students (mode of communication did not appear to affect frequency of interaction). Shirin concluded that physical proximity was necessary but not a solely sufficient condition for interaction and that opportunities for social interaction between hearing and hearing-impaired students needed to be carefully planned by teachers. In an examination of the socialization process of hearing impaired students integrated with hearing groups in a summer day camp,

Hus (1979), noted a low overall interaction frequency for the hearing-impaired children. Hus concluded that the results may have been due to the lack of adequate experience in an integrated situation by both hearing-impaired and hearing children in the study.

A six month study of the attitudes held by hearing adolescents towards deafness on an integrated deaf-hearing campus was mixed. Pretested attitudes held by entering students were generally positive towards deaf people. After six months Emerton and Rothman (1978) found that there was a downward trend in effect. The study showed no difference in attitudes accounted for by proximity in dormitory residence or by known student background variables.

There can be little doubt that mainstreaming is not being conducted presently to promote a process of acceptance between deaf students and their nonhandicapped peers. Overall, the data related to the socio-adaptive climate within the mainstreamed setting of deaf students suggest that normal hearing group attitudes towards their hearing impaired peers are not positive. The result of that lack of acceptance seemingly has influenced the social isolation of deaf students as they often occupy a social position of neutrality and/or rejection; in addition, Mosley (1978) has stressed the fact that these negative attitudes have further implications for the "modeling" that is assumed to operate in the mainstreamed environment. Thus, we can conclude that

where as physical proximity is essential, it is not synonymous with meaningful interaction. In order to promote the integration of deaf students being mainstreamed into peer friendship networks and constructive interactions, there is a need for a set of practical strategies educators can use to structure cooperative learning activities.

The results of some empirical studies can provide useful guidelines for developing such strategies, as according to Agness (1980), the research indicates that as the amount of exposure to handicapped students increased, nonhandicapped peers in the regular grades have significantly more positive perceptions of the handicapped when compared with students with no exposure to handicapped students. The following studies substantiate this position.

Bursor (1981) noted that younger children reacted more positively after receiving tutoring from a handicapped student. Results from a questionnaire designed to elicit differences in perceived competencies of handicapped and nonhandicapped people, indicated that the students assigned different competencies to handicapped and nonhandicapped persons, however these differences decreased after the children were provided opportunity to interact with the handicapped tutor. A study by Ladd et al. (1984) explored the interpersonal experiences of 48 deaf adolescents attending two year occupational education programs with nonhandicapped peers. Classroom interactions between deaf

and hearing students and classmates' perceptions of mainstreamed peers were assessed for students entering the program during three consecutive academic years. Ladd et al. concluded that a climate conducive to integrated interactions and friendships did emerge in the mainstreamed program.

Kennedy and Burininks (1974) conducted a study of peer status and self-perceived status of hearing-impaired children enrolled in regular grades and found that hearing-impaired students received a higher degree of social acceptance from normally hearing peers than had earlier studies. A longitudinal study of peer acceptance and self-perceived status of severely to profoundly hearing-impaired students by Kennedy et al. (1976), also found that the children received a high degree of social acceptance by hearing peers, and were as perceptive as their normally hearing peers in estimating their own status. Other studies (Fleming, 1979; Friedman, 1975; Weinberg, 1978) indicate significant positive relationships between contact with handicapped peers and more favorable attitudes toward handicapped persons. Overall findings suggest that negative stereotypes of the handicapped decrease and perceived similarity increased with intensified contact, thus, resulting in significant positive shifts in attitudes. Results of research by Ballard (1977) and Fleming (1979) also support the notion that increased contact with handicapped leads to more positive attitudes.

A review of available data relating to the effects of

specific educational experiences on attitudes towards the handicapped reveals that, in many instances, information and training courses pertaining to knowledge of handicaps have proven to be related to the development of more positive attitudes (Meyers, 1963; Schwartzwald, 1981). Youdelman (1984) evaluated the effectiveness of two program strategies (lectures and books) for providing nonhandicapped peers information about problems related to deafness. An analysis of the pretest, posttest scores indicated (a) superiority of lecture and book methods over control group performance, (b) superiority of female over male performance with greater retention of information by lecture group students, however, Youdelman concluded that the authenticity of the speaker and/or the novelty of the presentation may have accounted for the superiority of the lecture method. Lazar, Orpet, and Demas (1976) found a sequenced instructional program with positive reinforcement for a strong cognitive approach in group discussion affective for positive attitude change. Studies by Marsh et al. (1972) and Scheffers (1977) provided support for the notion that increased knowledge about the handicap results in the development of more positive attitudes towards the handicapped.

Other results (Felty, 1965) indicated that specific training courses are not significantly related to the development of positive attitudes toward the handicapped, but that upper elementary school students' attitudes towards

their handicapped peers could be significantly changed in a positive direction through a combination of cognitive and affective interventions. Shein (1978) studied the effects of lectures and sign language instructions on changing attitudes towards the hearing impaired in an elementary school population. His findings indicated that hearing students who had experienced increased levels of knowledge positively changed their attitudes towards the hearing impaired, and that the children in the group that were exposed to both lecture and instruction experienced the lowest levels of anxiety in anticipation of contact with the hearing-impaired students.

A study by Lehrer (1981) describes how mainstreaming affects the nonhandicapped student's cognitive schema of the handicapped student. Results indicated that mainstreamed exposed students made significantly fewer errors on the memory recognition test and confirmed the prediction that mainstreaming results in a less stereotypic handicap schema among nonhandicapped students. Multi-media strategies (including role playing activities) have also been found to contribute to gains in positive attitudes on the nonhandicapped students towards their handicapped peers (Westervelt, 1981). Clore and Jeffreys (1972) conducted a study of the effects of disability simulation on attitudes, and found a significant difference between the positive attitudes of the experimental and control groups on attitudes

towards disability scale; in addition, no significant differences on any measures were found between the role players, and the vicarious observers. These results suggest that both role playing, and the vicarious experience of observing the role players were effective methods of modifying some dimensions of attitudes towards handicaps.

A major implication of this review is the suggestion that stereotypic attitudes and/or discomforts in the presence of handicapped persons can be modified through structured experiences utilizing one, or a combination of the following techniques: (a) direct, or indirect (media) contact with, or exposure to handicapped persons; (b) information about handicaps; (c) disability simulation; and, (d) group discussions. Although some of the review focuses on modification of attitudes towards "handicaps" in general, it seems plausible to hypothesize that factors contributing to positive attitude formation are similar for many groups of handicapped people; thus, suggested techniques might be used to modify attitudes towards persons who are labeled "deaf", as well as those of other handicaps.

Assessment Technique

Many authors (Northcott, 1973; Salend, 1974) agree that much preparation before mainstreaming is necessary for the socialization of both hearing-impaired and hearing students in order for the program to be effective. A number of techniques have been used to assess the attitudes of

nonhandicapped students towards their handicapped peers, as early in a child's life his peers form an impression of him, and on the basis of such impressions he is assigned status within a group (Wisley, 1981). A common means of assessing social status of children in classroom settings is through the use of peer ratings or peer preference nominations involving potential social interactions in play and work activities.

Elser (1959) used a Moreno peer nomination scale to evaluate the social position of 45 hearing impaired children (ages 9-12) in grades third through seventh. Elser found that hearing-impaired children were less accepted than children with normal hearing.

Hus (1979) used a 20 item questionnaire on hearing impairment to measure the attitudes of the counselors towards hearing impaired students. The counselors were asked to indicate whether they agreed or disagreed with statements such as "Hearing-Impaired people worry a great deal" using a scale from 3 (agree very much) to -3 (disagree very much). A high score indicated a favorable attitude with a maximum possible score of 120. The results indicated a positive change in counselors' attitudes after four weeks of actual contact with hearing-impaired children.

Bateman (1962) used a rating scale to rate the activities nonhandicapped children felt the handicapped children could master. His results indicated that the total

test scores and the percentages of positive responses in each area covered have a direct relationship to the amount of contact that the students experienced with the particular handicapping area involved. These results are consistent with other findings e.g., Agness (1980), Burson (1981), and Ladd et al. (1984). Knittle (1963) utilized a five point likert type scale to assess attitudes of subjects who had contact with disabled siblings. Knittle found more positive attitudes among subjects who had contact with disabled siblings than those who had no contact.

In a study developed to examine the peer status and the self-perceived peer status of hearing impaired children in the regular primary grades, Kennedy and Burininks (1974) used three sociometric tests to assess the peer acceptance for both normally hearing and hearing impaired students. Results indicated that the hearing impaired children received a higher degree of social acceptance than reported in previous studies. Szuhay (1961) used the Children's Picture Sociometric Attitude Scale, and found that female children showed more positive attitudes towards the handicapped than did males. Moed et al. (1963) found similar results using the Children's Seashore Picture Story Test; girls had more positive attitudes towards the handicapped; boys responded more negatively to peers who appeared to be academically incompetent but were not "labeled" as having a problem. DeGrella (1981) concluded that bias against disabilities

appear to increase with age; and that chronological age is a better predictor of prejudice against the disabled than mental age.

Ballard et al. (1977) experimentally assessed the social status of a group mainstreamed handicapped students. In the experimental group, handicapped students worked in small cooperative group with nonhandicapped classmates on highly structured, manipulative tasks using multiple types of materials. The treatment was provided in two cycles lasting a total of eight weeks. Sociometric testing which was administered before and after treatment indicated that nonhandicapped children's social acceptance of their handicapped peers improved significantly more than that of the control children.

Theoretical Rational

Theoretical assumptions can provide explanations about the process of attitude change, and help educators understand successful attitude change projects.

Social psychologists use the term attitude to refer to a learned and relatively enduring perception (expressed or unexpressed) influencing a person to think or behave in a fairly predictable manner towards objects, persons, or situations. An attitude is composed of a cognitive (conceptual) component and an emotional (motivational) component; both factors are involved when behavior is directed.

Kelman (1963) indicates that identification and internalization are the two processes by which attitudes are formed. Children identify with persons or groups important to them and adopt their views; however, attitudes adapted through identification are based upon the person's emotional attachment to another person or group, rather than on their own merit, and are not always well integrated into his/her other attitudes and values. If the emotional attachment to the person or group loses its importance, the attitude will also likely fade.

On the other hand, when a person adapts an attitude through internalization, it is because the attitude is congruent with his system of values. Any emotional attachment to the influencing person or groups is not nearly so important as his belief that the influencing person or group is knowledgeable and trustworthy. Attitudes acquired through internalization are usually the most durable, and persist not only in the absence of the influencing agent, but even when one's relationship to him/her becomes irrelevant.

The research indicates that negative attitudes based on general stigmatization of handicaps at large do exist (Bowe, 1978; Kutner, 1971); thus, some negative attitudes of regular students may have been adopted through identifying with or internalizing society's attitudes towards handicaps.

Festinger's theory of cognitive (1957) dissonance has frequently been used to explain the dynamics of attitude

change. According to Festinger people are strongly motivated to achieve consistency between their attitudes and their behavior. He states that two or more concurrent mutually dissonant ideas, attitudes, or facts of knowledge (cognitions in general) will "drive people to resolve their contradictions because they cannot tolerate the status of tension that exists"; the drive is towards consistency and away from dissonance, such drive occurring because of an actual cognitive attitudinal change. In actuality, people tend to reject or deny information that may be in conflict with their prior beliefs. Festinger lists some source of dissonance as, new information, logical inconsistency, uncontrollable circumstances, cultural mores, events inconsistent with past experiences, and states that this dissonance can be reduced by changing behavior, attitudes and/or conditions of the environment, etc.

Kelman has indicated that the extent to which attitudes are changed depends upon whether it is believed that the influencing person knows the truth about a situation (knowledgeability) and the degree to which it is believed that he/she will give it straight (trustworthy).

Classroom teachers are generally highly influential persons. In addition, Cohen (1978) concluded that teachers can help foster positive and accepting attitudes of nonhandicapped students towards their handicapped peers through a curricular approach to the understanding of

disabilities and an understanding of the people who have them. Children generally believe that their teachers are knowledgeable and trustworthy, and are also likely to identify with, as well as, internalize some of their values and beliefs. New information about the handicap, emphasis on the notion that nonhandicapped students are more similar to deaf students than they are dissimilar, coupled with previous stereotyped perceptions about deaf students represent concurrent mutually dissonant ideas and/or facts; thus, nonhandicapped students will be motivated to resolve these contradictions so as to remove the state of tension that exist. According to Festinger, this drive towards consistency and away from dissonance occurs because of an actual cognitive attitudinal change. Also, hopefully, interacting with deaf students within a context of positive goal interdependence will provide the experiential opportunity for nonhandicapped students to examine logical inconsistencies relative to previous stereotyped belief, fears, etc., as well as provide positive reinforcement of new attitudes of acceptance and expectations for rewarding future interactions with all their classmates.

Summary

A major concern of many educators and parents of deaf children has centered around their social skill deficiencies. Although these children have the rudiments for social understandings they lack the knowledge and skills necessary

for displaying social competencies (Kennedy, 1973). In fact, there are indications that hearing impaired children may be rejected more by normal classmates than children with other handicaps such as learning disabilities or orthopedic difficulties (Asher, 1981; Force, 1966). This phenomena needs to be addressed as the need to be accepted by others is a critical psychological need all individuals have, including the hearing impaired. Feelings of being unwanted, isolated, or rejected by others are not only serious stumbling blocks towards normal social and personality development, but can result in a poor self-concept, a low level of aspiration and a dislike for school. Rosenblum (1975) indicated that social interaction with peers may be the primary relationship within which development and socialization takes place as healthy peer relationships provide expectations, models, reinforcement and role playing experiences that shape a wide variety of social behaviors, attitudes, values, and information unattainable from adults; however, the majority of deaf students are segregated academically, socially, and emotionally from their hearing peers, and have not had the opportunity for meaningful interactions (Yates, 1979).

Seemingly, one of the most important school resources is provision for interaction with nonhandicapped peers who provide entry into normal life experiences as members of our society. Experience with a broad range of peers should not be a superficial luxury to be employed by some students and

not by others, but rather an absolute necessity for maximal achievement and healthy cognitive and social development. Because deafness precludes the development of so called normal communication skills, there is a great need for educators to provide maximum opportunities for social development.

Several researchers have reported that mainstreaming, as it is typically practiced has not resulted in significant educational and social growth in handicapped children (Gottlieb, 1980; Gresham, 1982). Anticipated outcomes related to social interaction, peer acceptance and modeling have not been realized. Recent social learning theory suggest that handicapped children can imitate appropriate social behavior and develop a positive sense of self-efficacy as long as modeling is carefully planned in sequence (Cartledge et al., 1980; Gresham, 1981b, 1982b; Stephens, 1978). However, results of studies related to attitudes towards handicaps indicate an overall pattern of negative attitudes among nonhandicapped students towards their handicapped peers. Thus, a major barrier to acceptance and freedom for deaf students appears to exist in the minds of their nonhandicapped peers.

Unfavorable attitudes, feelings and behaviors of nonhandicapped students towards deaf students need not exist. Research indicates that it is possible to change attitudes about handicaps from negative to positive at all levels of

education from preschool to college (Larson, 1978; Northcott, 1973; Orlansky, 1979; Raver, 1979; Sipple & D'Alonzo, 1977). Although some differences in studies has been noted, it is generally agreed that as the amount of contact with handicapped students increased, nonhandicapped students' perceptions of their handicapped peers increased in a positive direction (Agness, 1980; Fleming, 1979; Lehrer, 1981); in addition, exposure to information and/or training courses pertaining to knowledge of the handicap have proven to be related to the development of more positive attitudes towards the handicap (Shortridge, 1982; Terrelle, 1981; Westervelt & Turnball, 1980).

In the present investigation participants were assessed relative to increase in positive attitudes towards deaf students that resulted from the presence or absence of exposure to Project Treatment A (information and contact), Project Treatment B (information only), Project Treatment C (contact only), or no Project Treatment.

A common means of assessing social status of children in classroom settings has been through the use of peer ratings (including Likert scales) or peer preference nominations involving potential social interactions in play and work activities. These type of instruments have yielded consistent data relative to attitudes as they pertain to age and gender. In view of these findings an attitude survey specifically designed to investigate hearing students'

attitudes towards deaf students was developed for this investigation.

Using Kelman's model of attitude formation and Festinger's Theory of Cognitive Dissonance as theoretical constructs, it was hypothesized that direct experience with deaf students and/or knowledge about the handicap should lead to increased positive attitudes towards the deaf on the part of nonhandicapped students participating in the program.

CHAPTER III

METHOD

Hypotheses

1. There will be no significant difference in the performance among Treatment Groups I, II, III and IV as measured by the Nonhandicapped Students Attitudes Toward Deaf Students Survey.

2. There will be no significant difference in the performance of the males and the females among Treatment Groups I, II, III and IV as measured by the Nonhandicapped Students Attitudes Toward Deaf Students Survey.

These hypotheses will be analyzed using a 2 X 2 MANOVA repeated measures design (Norusis, SPSSx, 1983).

Sample

A sample of 160 students was selected through stratified randomization from four elementary schools. Group I (N=40) subjects were randomly selected from the sixth, seventh and eighth grades of an elementary school where deaf students are housed in close proximity and participate in the communication arts mainstreamed program. Group I subjects received Project Treatment A (information and contract). Group II (N=40) subjects were randomly selected from the sixth, seventh and eighth grades of an elementary school where deaf students are housed in close proximity but are not

mainstreamed. Group II subjects received Project Treatment B (information only). Group III (N=40) subjects were randomly selected from the sixth, seventh and eighth grades of an elementary school where deaf students are housed in close proximity but are not mainstreamed. Group IV (N=40) subjects were randomly selected from an elementary school where there are no deaf students (no association) and did not receive any project treatment. Project participants were of middle socioeconomic status and comparable reading levels.

Description of the Project Change Treatment Conditions

The Communication Arts Program used in this study has been operating in the school district for three years. The overall purpose of the program is to foster positive attitudes toward deaf students, and to develop respect and appreciation for differences as exemplified by disability. In pursuit of this goal, utilizing Festinger's (1957) theory of attitude change as a theoretical construct, nonhandicapped students were provided with first-hand knowledge and experience through sequentially structured cooperative learning activities, as Festinger indicated that new information and/or events inconsistent with past experiences are sources of dissonance that people may be driven to reduce by changing attitudes or behaviors. Thus, suggesting that negative attitudes toward deaf students can be reduced and replaced by positive attitudes if a logical and organized body of information about the handicap and exposure through

first hand experience are provided. The Nonhandicapped students Attitude Toward Deaf Students Survey, developed specifically for this investigation, was used for pre and post testing of participants' attitudes in order to assess if any attitude change occurred, and to compare this change in attitude with any change that may be related to the exposure to various project treatments.

Five specific activities were utilized to provide participants with a sequential program for becoming more aware, more informed, more empathic, more sensitive, and finally more accepting of deaf students.

Information:

A four week mini unit focusing on the ramifications of deafness, was used to provide information about the handicap through a series of lectures and discussions of the following:

Activity 1

- (a) What is a hearing loss? A brief concise list of words and easy to understand definitions that relate to hearing loss.
- (b) A cross section drawing of the ear with its parts labeled.
- (c) What are some causes of hearing problems?
- (d) How may deaf students' needs be met through specific equipment and communication skills?
- (e) Books devoted to sensitizing participants to the

handicap, and the kinds of barriers and problems encountered by deaf students, e.g. Can You Hear Me?

- (f) Information regarding human similarities and differences.

Activity 2

Students are taught American Sign Language: basic vocabulary and conversational expressions.

Activity 3

Pairs of students participate in simulation activities to directly experience a variety of limitations imposed by deafness, e.g. one student may not be allowed to talk, but is required to figure out how to communicate through gestures, painting, signs, etc.

Activity 4

Role playing positive and negative ways to help or not help a deaf student.

Contact

Activity 5

Direct contact, first hand experiences and an opportunity to get in touch with their attitudes is provided through subjects participating in structured mainstreamed activities with deaf students (for a four week period) that include:

- (A) Cooperative work projects where the nonhandicapped participants and deaf students would be jointly responsible for actually planning and carrying out projects under the guidance of the teacher. Such

projects include:

- (1) Story dramatizations: characterizations, playing a story
- (2) Conventional Drama: one act plays
- (3) Art: related to drama, costumes, scenery
- (4) Written Compositions: poetry
- (5) Mime: sensory impressions, character development
- (6) Rhythms: creative dance, expanded signs.

(b) Prearranged Joint Play:

This method involves organized play situations in which nonhandicapped participants and the deaf students cooperatively plan positive group games and activities that both can jointly participate in at least some of their recess periods.

For maximum interaction during cooperative learning activities Johnson and Johnson (1980) recommends group assignments of three nonhandicapped students and one handicap student; thus, Group I and II were subdivided into two groups of 20 nonhandicapped students and seven deaf students for Activity 5 (contact exercise).

Group I subjects receiving Project Treatment A (information and contact) participated in the four week mini information units followed by the four week contact activities. Group II subjects receiving Project Treatment B (information) participated in the eight week mini information unit. Group III subjects receiving Project Treatment C

(contact) participated in the eight week cooperative learning contact activities.

Treatment activities were presented two times a week for a 40 minute period.

Instrumentation

The Nonhandicapped Students Attitudes Toward Deaf Students Survey (see Appendix A) was developed specifically for this study. Clear concise questions that sample aspects of the handicap and its ramifications were carefully constructed to assure content validity. After inspecting the bivariate relationships between the various questions, and removing items that were ambiguous or redundant, the survey was reviewed by a panel of six deaf education specialists who attested to both face and content validity of the instrument.

The four scales are comprised of 38 questions that reflect a cross section of various types of school situations and other activities that are used to elicit information about the following variables relative to attitude formation:

	alpha
1. Opinions ... (feelings, values, predispositions)	.7756
2. Behavior ... (how people think they should act)	.8243
3. Information ... (what they know/don't know about deafness)	.7297
4. Social Distance ... (degree of acceptance, association)	.8195
5. Demographics ... (age, sex, grade etc.)	

An attitude score is calculated directly from students' responses utilizing a five-point Likert-type scale that reflects degrees of direction and intensity.

Choices	Score
Strongly agree	5
Agree	4
Undecided	3
Disagree	2
Strongly disagree	1

The possible range of scores is from 180 (being the most favorable attitude) to 36 (the most unfavorable attitude). The total sum of choices a participant makes on the survey is viewed as an estimate of his/her overall attitude towards deaf students.

Procedure

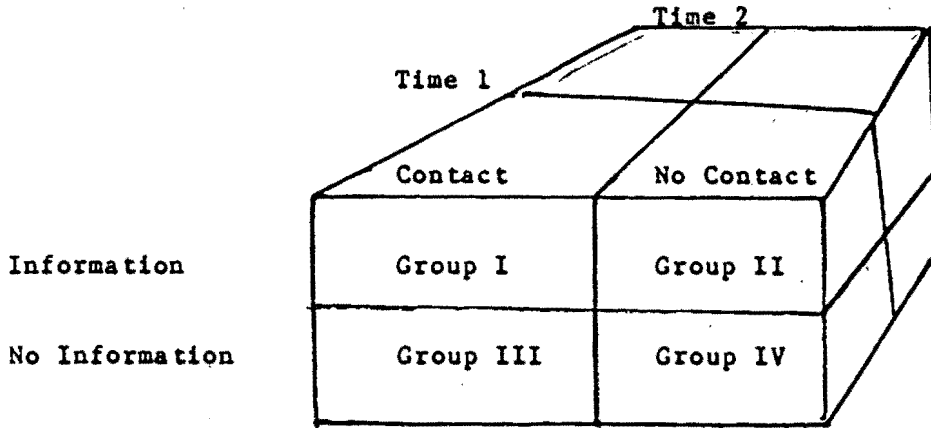
Arrangements were made with the principal of each school for the investigator to administer the survey to previously selected participants. Prior to the administration of the questionnaire, demographic information related to the socioeconomic status and reading levels of the participants was obtained, and a code number recorded on each answer sheet. The pre-test survey was administered, within the same week for all four groups. Directions for taking the survey and completing the answer sheet were discussed before the test was administered (see Appendix A for further details). A post-test survey was administered to each group after the

assigned project treatment was completed.

Statistical Procedure

The analytic paradigms (see Figures 1 and 2 for details) is relevant to testing the null hypotheses and compares the difference in performance of the participants on the Nonhandicapped Students Attitudes Toward Deaf Students Survey scores among Groups X1 (Project Treatment A), X2 (Project Treatment B), X3 (Project Treatment C), and X4 (No Project Treatment).

Figure 1

Analytic Paradigm Related to Testing Null Hypothesis 1

Statistical Analysis

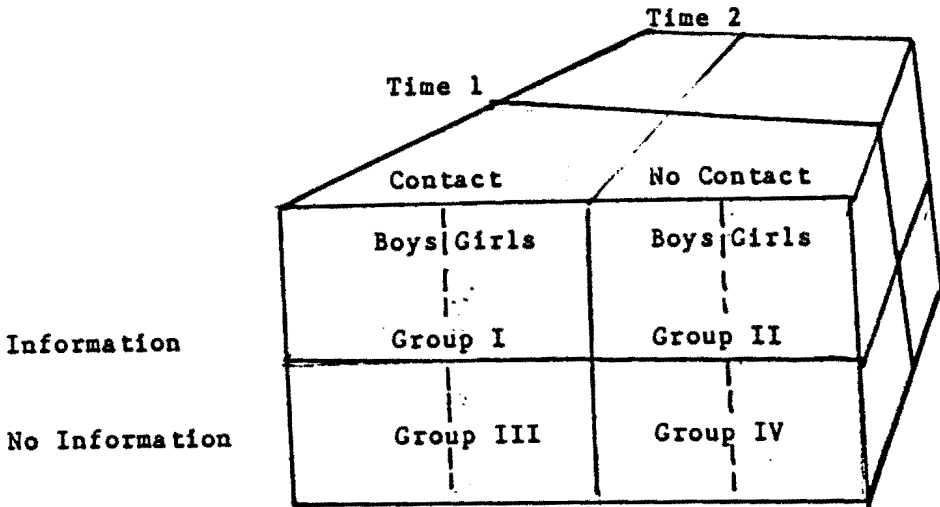
2 X 2 X 2 repeated measured MANOVA

Independent Variables
 Information
 Contact

Dependent Variables
 Attitudes

Figure 2

Analytic Paradigm Related to Testing Null Hypothesis 2



Males (N = 80)

Females (N = 80)

Statistical Analysis

2 X 2 X 2 repeated measures ANOVA

Independent Variables
information
contact
gender

Dependent Variable
attitudes

CHAPTER IV

RESULTS RELATED TO TESTING NULL HYPOTHESIS

The following null hypotheses will be tested:

Hypothesis 1: There will be no significant difference in the performance among treatment groups I, II, III and IV as measured by the Nonhandicapped Students Attitudes Toward Deaf Students Survey.

Hypothesis 2: There will be no significant difference in the performance of the males and the females among treatment groups I, II, III and IV as measured by the Nonhandicapped Students Attitudes Toward Deaf Students Survey.

Cronbach's coefficient alpha was used to determine the internal consistency of each of the four subscales comprising the Nonhandicapped Students' Attitudes Towards Deaf Students. Previously established reliabilities for the pilot study were:

Scales	Alpha
Opinion	.7756
Behavior	.8243
Information	.7297
Social Distance	.8195

Reliability coefficients for this study are:

scales	Alpha
Opinion ... (feelings, values, predispositions)	.7261
Behavior .. (how people think they should act)	.7830
Information (what students know/don't know about deafness)	.6203
Social Distance (degree of acceptance, association)	.7898

The above alphas were within acceptable ranges, thus, the data from the four subscales was considered reliable.

Although the 160 students participating in this project were selected through stratified random sampling plan, preliminary inspection of the attitude survey data revealed significant pre-test differences (see Appendices B and C). These scores were reviewed for outliers; participants with scores two standard deviations above and below the means on three of the four subscales were removed. Removing the outliers reduced the sample to 141 students. The cell size distributions were not radically effected by this sample reduction, however, the pre and post-test means did not change sufficiently to remove the significant pre-test differences (see Appendices D and E). Consequently, the original multivariate 2 (contact) X 2 (information) X 2 (sex) X 2 (time) analysis approach was considered not capable of being used to determine if significant post-test differences may be related to the various treatment conditions, and a decision was made to use gain scores instead of the time dimension.

Careful inspection of the gain scores indicated a clear pattern on all the scales except Social Distance (SDA) which had a different pattern from the other three scales (see Table 1). Additionally, when scale SDA was included in the MANOVA, homogeneity-of-variance assumptions (Box M test) were not met. Consequently, the three scales that showed strong positive intercorrelations, Opinion (OPA), Behavior (BHA), and Information (INA) were grouped into one cluster and analyzed utilizing a MANOVA that did meet the Box M test of homogeneity. Scale SDA was analyzed separately using an ANOVA.

Table 1

Nonhandicapped Students Attitude Toward Deaf Students Survey
Multiple Analysis of Variance - Gain Scores
Scale Means and Standard Deviations

Survey Scales		Group I		Group II		Group III		Group IV	
		X	SD	X	SD	X	SD	X	SD
OPA	Girls	6.500	3.823	4.000	3.967	3.789	3.37	1.737	2.903
	Boys	4.786	2.945	5.333	5.236	3.056	4.45	.105	1.941
BHA	Girls	6.167	4.162	2.562	3.444	5.158	2.583	.211	2.616
	Boys	5.429	3.817	4.056	4.696	1.889	3.954	-.368	2.338
INA	Girls	3.233	2.531	2.750	4.465	7.263	3.871	.474	2.098
	Boys	5.214	4.710	4.778	4.421	4.389	4.023	.472	2.808
SDA --- Analysis of Variance - Gain Scores									
SDA	Girls	12.389	6.490	8.125	6.632	12.000	9.519	.947	4.453
	Boys	13.429	7.460	8.778	5.197	8.684	8.505	1.105	2.208

Group I = Inform and Contact

Group II = Inform only

Group III = Contact only

Group IV = Control

A 2 (contact) X 2 (information) X 2 (gender) MANOVA was performed on the gain scores for differences in attitudes towards deaf students on three dependent scales: Opinion (OPA), Behavior (BHA), and Information (INA). A similar procedure was used to analyze scale Social Distance (SDA) separately utilizing an ANOVA.

Analysis of the data revealed significant overall treatment effects beyond the .01 level for independent variables contact ($p < .000$), with scales OPA ($p < .022$), BHA

($p < .000$) and INA ($p < .026$) all making significant contributions, and information ($p < .000$) with all three scales, OPA ($p < .000$), BHA ($p < .000$) and INA ($p < .000$) making significant contributions beyond the .01 level. Scale SDA's main effects for Contact ($p < .000$) and information ($p < .000$) were also significant beyond the .01 level. Main effects for gender was not significant for any of the four scales (see Table 2).

Table 2

Multivariate Test of Significance Main Effects

Source of Variance	Contact		Information			Gender
	Df	P	Df	P	Df	P
Attitude Scales	3	.000*	3	.000*	3	.450
OPA		.022**		.000*		.147
BHA		.000*		.000*		.200
INA		.026**		.000*		.334
Analysis of Variance - SDA						
SDA		.000*		.000*		.330

* $p < .01$

** $p < .05$

The two-way interaction of information and gender was significant ($p < .004$) with scales BHA ($p < .051$) and INA ($p < .019$) both making significant contributions (see Table 3).

Mean gain scores for the boys on both scales [BHA (boys $X = 4.056$; girls $X = 2.562$) and INA (boys $X = 4.778$; girls $X = 2.752$)] were greater than for the girls. Comparison by t-test indicates that the difference in the boys and girls gain scores for scale INA approaches significance ($t < .056$) (see Table 4). Scales OPA and SDA were not significant.

The two-way interaction effect for contact and gender did not approach significance.

Table 3

Multivariate Test of Significance Two-Way Interaction
Information X Gender

		Df	F	P
Source of Variance	Inf X Gender	3		.004*
	OPA		.146	.702
	BHA		3.67	.051**
Attitude Scales	INA		5.67	.019**
Analysis of Variance - SDA				
	SDA	1		.675

*p < .01

**p < .05

Table 4

T-Test - Gain Scores Information X Gender
Means and Standard Deviations

Attitude Scales		X	SD	Df	t	P
OPA	Girls	4.00	3.96	32	1.74	.411
	Boys	5.33	5.23			
BHA	Girls	2.56	3.44	32	1.86	.304
	Boys	4.05	4.96			
INA	Girls	2.75	4.46	32	1.78	.056
	Boys	4.77	4.21			
SDA	Girls	8.12	6.63	32	1.63	.865
	Boys	8.77	5.19			

*p < .01

**p < .05

There was a significant three-way interaction of information, by contact by gender for the MANOVA ($p < .033$) with scale INA ($p < .019$) making significant contributions (see Table 5). A difference in boys and girls gains on scale INA ($t = .051$) was significant with boys ($X = 5.214$) benefitting more from information than the girls ($X = 3.233$). There was also a significant three-way interaction of information, by contact, by gender for the ANOVA analysis of scale SDA ($p < .029$) (see Table 5). However, t-test comparisons did not reflect significant differences in boys and girls scores (see Table 6). Scale OPA ($p < .056$) approaches making a significant contribution (see Table 5).

T-test comparisons between the gain scores for the girls and boys on this scale ($t = .055$) also approaches significance with the girls reflecting more positive opinions of their deaf peers (girls $X = 6.500$; boys $X = 4.786$) (see Table 6). Scale BHA was not significant.

Table 5

Multivariate Test of Significance Three-Way Interaction
Information X Contact X Gender

	Df	F	P
Source of Variance: Inf X Cont X Gender	3		.033**
OPA		3.70	.056
BHA		.036	.849
INA		5.57	.019**
Analysis of Variance - SDA			
SDA			.029**

*p < .01

**p < .05

Table 6

T-Test - Gain Scores Information X Contact X Gender
Means and Standard Deviations

Attitude Scales		X	SD	Df	F	P
OPA	Girls	6.50	3.82	30	1.56	.055
	Boys	4.78	2.94			
BHA	Girls	6.16	4.16	30	1.19	.610
	Boys	5.42	3.81			
INA	Girls	3.23	2.53	30	1.80	.051**
	Boys	5.21	4.17			
SDA	Girls	12.389	6.49	30	1.32	.581
	Boys	13.42	7.46			

*p < .01

**p < .05

In general, it can be stated that based on the findings of the present investigation, significantly more positive attitudes towards deaf students were expressed by those who had experience or contact with deaf students and/or participated in a training course designed to increase knowledge about the handicapping condition. Overall inspection of the means and standard deviations of gain scores on the Nonhandicapped Students Attitudes Toward Deaf Students survey indicated that all experimental groups surpassed the control group with unique patterns of differences between boys and girls also indicated. In addition, an indepth analysis of the survey questions reflect

definite positive attitude shifts on all four scales (see Appendix F). Consequently, null hypothesis I is rejected.

Although the significant three-way interaction included gender, the main effect for gender itself was not significant; therefore, null hypothesis II was not rejected. Distinct patterns of obvious differences between boys and girls (see Table 1, Group II and III) will be discussed in Chapter V.

CHAPTER V

DISCUSSION

The present investigation produced a number of interrelated findings. It can be noted that course instructions were effective in attitude modification. An in-depth analysis of the data for participants receiving project treatment B (information) reveals that students provided with information about the handicap expressed more favorable attitudes towards deaf students than those in the control group. Knowledge about deafness was found to be directly related to the attitudinal change reflected by the pre and post test scores on the information scale (INA) of The Attitude Towards Deafness Survey. All INA pre-test scores were negative or undecided, however, all post INA scores were positive except for one question which changed from a negative position to undecided (see Appendix E) and boys achieved significantly higher gains than the girls.

These findings support the notion that new cognitive information (inconsistent with past information), perhaps created the dissonance necessary to change attitudes, and are consistent with research by Shein (1978) which indicated that nonhandicapped students who increased their knowledge about deaf students through lectures and instruction, positively

changed their attitudes towards deaf students. Apparently when hearing students revised their perceptions about their deaf peers (due to increased information about the handicap over a period of time), they did so in favorable ways.

Structured or controlled exposure to deaf students was also an important factor in the development of nonstereotypic attitudes. Positive attitude scores were found to be related to experience/contact with deaf students. Students who were in treatment group III C (contact only) expressed more willingness to interact with deaf students within interpersonal situations than control group students. Scales Behavior (BHA) and Social Distance (SDA) both reflect a change from an overall ambivalent (pretest) attitude about personal acceptance and/or association with deaf students to a definite positive (post-test) willingness to choose deaf students as group partners, teammates and friends (see Appendix E).

In group III, all four attitude scales, girls achieved greater gains than the boys with gains on the BHA scale significantly greater than the boys. Consistent with the theory of cognitive dissonance, structured experiences with deaf students perhaps provided the dissonance necessary to change behavior. With intensified contact, negative stereotypes of deaf students apparently decreased and perceived similarity increased, thus, resulting in significant positive shifts in attitudes.

There also appears to be a positive relationship between information about deafness and the development of positive attitudes about the handicap, as well as the development of positive side-effects related to actual contact with deaf students. That is to say, students who were provided opportunities to analyze constructs of prejudice through discussions based on information (rather than based on opinions and emotions) along with first hand experience through structured mainstreamed activities, gained significant knowledge about the handicap and expressed more positive opinions about their deaf peers (Group I: information and contact).

All pre-test Opinion (OPA) scores were negative or undecided, however, all positive post-test scores indicated hearing students' opinions of their deaf peers were changed to believe that they could achieve the same grades, play the same sports, become friends, and expressed a desire to learn to communicate with deaf peers (see Appendix E). In addition, comparable to the process by which children typically form friendships (Asher & Gottman, 1981), hearing students interactions with deaf classmates became more frequent, more reciprocal with respect to interactive roles (i.e., seeking out as well as being sought after by deaf classmates) and more social in orientation.

The boys in Group I appear to have benefitted from these structured cognitive and social activities. Their means for

three subscales [Behavior (BHA), Information (INA), and Social Distance (SDA)] all indicate greater gain scores than the mean scores for boys in Groups II, III and IV on the same three scales (see Table 1). The Group I mean for scale Opinion (OPA $X = 4.786$) was slightly lower than the Group II mean for scale Opinion (OPA $X = 5.333$); comparison by t-test indicate that this difference is not significant. Overall, it appears that new information about the handicap, and experiences with deaf students (inconsistent with past information and experiences) provided the dissonance necessary for changing attitudes (dissonance reduction).

A similar benefit may have occurred for the girls, but not to the same degree as there was a substantial difference between the girls of Group I and the girls of Group III on the Information Scale (INA). Apparently when the girls of Group I ($X = 3.233$) were provided information along with contact experiences with deaf students their gain was much less than the gain achieved by the girls in Group III ($X = 7.263$) who only participated in contact experience with deaf students. The mean difference in gain scores was 4.030 and this difference is significant ($t = .004$). In this instance, it appears that the addition of informational experiences to contact experience had a negative effect on the Information Scale (INA). Group I girls' means for the other three scales, Opinion (OPA), Behavior (BHA), and Social Distance (SDA) indicated greater gain scores than the means for the

girls in Group II, III, and IV; however, overall, the girls in Group I did not appear to benefit from these structured cognitive and social activities to the same degree as the boys of Group I.

Although the literature documents differences in boys' and girls' attitudes towards the handicapped (Budoff et al., 1978; DeGrella, 1981; Mode et al., 1963; Szuhoy, 1961), the main effect for gender was not significant, but, the interaction of sex with treatment is significant and potentially important. Overall results of this study indicate that in the presence of contact only, girls did better than boys; additionally, if only information was used as a treatment, boys achieved greater gains than girls. This means that boys profited more from information, and girls gained more from contact.

Perhaps the girls seemingly increased sensitivity to interpersonal relations may be reflecting attitudes that are more subject to the influence of society as a whole, and they tend to behave in a more democratic manner as the result of influence of teaching at home and at school (DeGrella, 1981). Since the girls benefitted more from contact, these findings suggest that providing girls with structured experiences/contact with deaf students may be a prerequisite to attitude change.

Boys, on the other hand, tend to respond more negatively particularly as related to perceptions of incompetencies

(Bursar, 1981). Jensema (1981) indicated that a communication handicap produces strain and hampers social interactions; consequently, adolescent males may be more influenced by the importance of physical capability and may find it uncomfortable/frightening to be confronted with a person who lacks control of his/her capacity to communicate his/her needs in a more customary or typical manner. The boys in this study benefitted more from information, thus suggesting that providing them with knowledge about the ramifications of deafness may be an important factor in the development of positive nonstereotypic attitudes.

These sex interaction with treatment differences have important implications for planning future mainstreamed programs. The data not only indicate that girls may not benefit from a combination of cognitive and social experiences to the same degree as boys; but in fact, it appears that girls benefit more from structured contact experiences with deaf students, while boys achieve greater gains when provided information about the handicapping condition. Thus, if budgetary constraints dictated a program that provides for a choice between contact or informational experiences it would be more than just economical as it would allow educators to focus on specific needs of the nonhandicapped students. If the nonhandicapped male students' attitudes are more negative than the females' attitudes, the structured cognitive experiences would be

included first; on the other hand if the nonhandicapped students' female attitudes are more negative towards deaf students, a program designed to provide structured social experiences with deaf peers would be more beneficial.

Summary

Many investigators have determined that nonhandicapped students' attitudes are closely tied to the effectiveness of education for the handicapped learner. Limited research findings in this area have shown that hearing students have negative attitudes towards deaf students. In the present study, it was assumed that if mainstreaming, as mandated by Public Law 94-142, is to succeed, nonhandicapped students first would need to develop positive attitudes towards deaf students.

One hundred and sixty students were selected as participants in this investigation from the sixth, seventh, and eighth grades of four different schools. These subjects were matched on gender, reading levels, exposure or nonexposure to deaf students, and the participation or non-participation in three project treatment conditions and a control condition.

An eight week training program provided information about deafness through a series of lectures and discussions, and/or direct contact with deaf students through structured activities. The Non-Handicapped Students' Attitude Towards Deaf Students Survey was used to assess participants'

attitude change as influenced by the three project treatment conditions, and in the control condition.

Overall, a major implication of these results is the suggestion that stereotype attitudes and/or discomforts in the presence of deaf students can be modified through planned activities. Course instruction providing information about the ramifications of deafness, and/or structured experiences with deaf students were effective in short term attitude modification in a positive direction.

Based on the findings of this investigation, it can be stated that significantly more positive attitudes towards deaf students were expressed by those who had experience or contact with deaf peers and/or participated in a training course designed to increase their knowledge about the handicapping condition. The relationship between increased knowledge about deafness and/or exposure to deaf students and a favorable attitude towards them was confirmed. These results were found to relate positively to positive attitudes towards deaf students for participants in all three experimental groups. Participants' pre and post-test scores confirmed the acquisition of more information about the handicap, revealed more positive opinions of their deaf peers, as well as expressed a willingness to associate with deaf students and learn to communicate with them. Furthermore, for this study, differences in gender were indicated where boys were found to benefit more from

information while girls benefitted more from contact. A significant relationship between favorable attitudes towards deaf students and the amount and kinds of information about the handicapped was found for the boys; as well as, a significant relationship between positive attitude modification and contact experiences with deaf students for the girls. These sex interactions with treatment differences have important implications for selecting the kinds of attitudinal modification experiences for a nonhandicapped student population.

Implications for Future Research

This study focused on the effects of direct contact with deaf students through structured experiences on attitudes; however, in reality, the majority of non-handicapped students are not provided opportunities for structured experiences with deaf peers. Future studies about the effects of direct or indirect contact with or exposure to deaf students can be further subdivided into those that assess the effects of nonstructured direct experiences with deaf students (i.e., such contact may have occurred in a live situation or indirectly through audiovisual media). It is possible that specific factors contributing to positive attitudinal shifts in structured experiences are not present or controlled for in unstructured social situations. In addition, in unstructured situations, there may be inadvertent experiences that reinforce stereotypes of deaf students.

Simulation studies have been found to be effective in modification of attitudes (Clore & Jeffrey, 1972). A study involving simulation experiences would be beneficial when done in a manner that allows the role player to observe the reactions of the nonhandicapped students i.e., movement through a largely unfamiliar group of people as a single role player may further enhance realism, allowing the role player to experience the possible frustrations of having a communication handicap, but perhaps more importantly, to experience the reactions of the hearing strangers.

Questions as to whether or not eliciting responses indicating more positive attitudes towards deaf students results in subsequent behavior change that has long term effects need further investigation. Findings from such a longitudinal study might not be consistent with the findings of the present investigation.

Most importantly, research that explores the complex systemic forces that operate in creating and maintaining devaluation in our culture may provide information that could be used to promote attitudes that foster acceptance and respect for differences as exemplified by disabilities.

REFERENCES

- Abramson, M. (1980). Implications of mainstreaming: A challenge for special education. In J. Dunn & D.A. Sabatino (Eds.), Review of special education. New York: Grune and Stratton.
- Agness, P. (1980). Effects of bibliotherapy on fourth and fifth graders' perceptions of physically disabled individuals. Unpublished doctoral dissertation, Ball State University.
- Almond, P., Rodgers, S., & Kung, D. (1979). Mainstreaming: A model for including elementary students in regular grades. Teaching Exceptional Children.
- Altshuier, K.Z. (1962). Psychiatric considerations in the school age deaf. American Annals of the Deaf, 107, 553-559.
- Apolloni, T., & Cooke, S.A. (1977). Establishing a normal peer as a behavioral model for developmentally delayed children. Perceptual and Motor Skills, 44, 231-241.
- Apolloni, T., & Cooke, T.P. (1978). Integrated programming at the infant, toddler and preschool levels. Early Intervention and the Integration of Handicapped and Nonhandicapped Children. Baltimore: University Park Press.
- Asher, S.R. (1978). Children's peer relations. Socio-personality development. New York: Rinehart and Winston.
- Asher, S.R., & Taylor, A.R. (1981). The social outcomes of mainstreaming: Sociometric assessment and beyond. Exceptional Education Quarterly, 1, 13-30.
- Austin, K., & Handlers, A. (1980). Improving attitudes of high school students towards handicapped peers. Exceptional Children, 47.
- Baker, R.G. (1953). Social psychology of physique and disability. New York: Social Science Research.
- Ballard, M., et al. (1977). Improving the social status of mainstreamed retarded children. Journal of Educational Psychology, 69, 605-611.

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. Psychological Review, 84, 191-215.
- Bateman, B. (1962). Sighted children's perceptions of blind children's abilities. Exceptional Children, 29, 42-46.
- Bender, R.E. (1970). The conquest of deafness (2nd ed.). Cleveland, OH: Press of Western Reserve University.
- Birch, J. (1976). Mainstreamed education for hearing impaired pupils: Issues and interviews. American Annals of the Deaf, 121, 69-71.
- Birch, J.W. (1976). Mainstreaming: Definition, development and characteristics. The Council for Exceptional Children.
- Blood, G.W., Blood, I.M., & Danhauer, J.L. (1977). The hearing aid "effect". Hearing Instruments, 28, 12.
- Bowe, F. (1978). Handicapping America: Barriers to disabled people. New York: Harper and Row.
- Brill, R.G. (1975). Mainstreaming: Format or quality. Audiology and Hearing Education, 2.
- Brim, O.G. (1969). Socialization through the life cycle. Handbook of socialization theory and research. Chicago: Rand McNally and Company.
- Bryan, T.S. (1976). Peer popularity of learning disabled children. Journal of Learning Disabilities, 9, 307-311.
- Bryan, T.S., & Bryan, J.H. (1978). Social interactions of learning disabled children. Learning Disabilities Quarterly, 1, 33-38.
- Budoff, M., & Siperstein, G.N. (1978). Low-income children's attitudes towards mentally retarded children: Effects of labeling and academic behavior. American Journal of Mental Deficiency, 82, 474-479.
- Bursor, D., et al. (1981). The effects of a disabled cross-age tutor on the perceptions of normal kindergarten children. Journal for Special Educators, 17, 166-173.
- Carlberg, C., & Kavale, K. (1980). The efficacy of special versus regular class placements for exceptional children. Journal of Special Education, 14, 295-309.

- Cartledge, G., & Milburn, J. (1978). The case for teaching social skills in the classroom: A review. Review of Educational Research, 48, 133-156.
- Cartledge, G., & Milburn, J. (Eds.) (1980). Teaching social skills to children: Innovative approaches. New York: Pergamon Press.
- Centers, L., & Centers, R. (1963). Peer group attitudes towards the amputee child. Journal of Social Psychology, 61, 127-132.
- Chaffin, J.D. (1974). Will the real "mainstreaming" program please stand up? Focus on Exceptional Children, 11, 101-104.
- Christophos, R., & Renz, P.A. (1969). A critical examination of special education programs. Journal of Special Education, 3, 371-380.
- Clore, G., & Jeffrey, K.M. (1972). Emotional role playing: attitude change and attraction towards a disabled person. Journal of Personality and Social Psychology, 23, 105-111.
- Cohen, S. (1978). Improving attitudes towards the handicapped. Education Digest, 43, 16-19.
- Craig, H.B. (1965). A sociometric investigation of the self-concept of the deaf child. American Annals of the Deaf, 110, 458-478.
- DeGrella, L.H. (1981). Children's attitudes towards orthopedic and sensory disabilities: Knowledge, evaluative beliefs, and expressed preferences at ages three to six. Unpublished doctoral dissertation, Florida State University.
- Donaldson, J. (1980). Changing attitudes towards handicapped persons: A review and analysis of research. Exceptional Children, 46, 504-512.
- Donaldson, J., & Martinson, M.C. (1977). Modifying attitudes toward physical disabled persons. Exceptional Children, 43, 337-343.
- Dunn, L.M. (1978). Special education for the mildly retarded - Is much of it justifiable? Exceptional Children, 3, 371-379.

- Elser, R. (1959). The social position of hearing handicapped children in the regular grades. Exceptional Children, 25, 305-309.
- Emerton, R.G., & Rothman, G. (1975). Attitudes of hearing students towards deafness on a deaf-hearing college campus. Rochester, NY: National Technical Institute for the Deaf.
- Felty, J.E. (1965). Attitudes to physical disability in Costa Rica and their determinants: A pilot study. Unpublished doctoral dissertation, Michigan State University.
- Festinger, L. (1954). A theory of social comparison process. Human Relations, 7, 117-140.
- Festinger, L. (1957). The theory of cognitive dissonance. Stanford, CA: Stanford University Press.
- Fleming, E.P. (1979). Acceptance of self and others: A study of students' attitudes towards physically disabled persons. Unpublished doctoral dissertation, The Medical College of Pennsylvania.
- Force, D. (1966). The social position of hearing handicapped children in the regular grades. Exceptional Children, 23, 132-135.
- Force, D.G., Jr. (1956). Social status of physically handicapped children. Exceptional Children, 23, 104-107.
- Foster, S.L., & Ritchey, W.L. (1979). Issues in the assessment of social competence in children. Journal of Applied Behavior Analysis, 12, 625-638.
- Frick, L. (1973). Adjusting to integration: Some difficulties hearing impaired children have in public schools. The Volta Review, 75, 36-46.
- Friedman, R.S. (1975). The peer-peer program: A model project for the integration of severely physically handicapped youngsters with nondisabled peers. New York: Human Resource School.
- Furman, W., Rake, D., & Hartup, W. (1977). Rehabilitation of socially withdrawn preschool children through mixed-age and same-age socialization. Child Development, 50, 915-922.

- Goodman, H., Gottlieb, J., & Harrison, R. (1972). Social acceptance of EMRs integrated into a nongraded elementary school. American Journal of Mental Deficiency, 76, 412-417.
- Goodman, N., Richardson, S.A., Dornsbash, S.M., & Hastoif, A.H. (1963). Variant reactions to physical disabilities. American Sociological Review, 28, 429-435.
- Gottlieb, J. (1980). Improving attitudes towards retarded children by group discussion. Exceptional Children, 47, 106-111.
- Gottlieb, J. (1981). Mainstreaming: Fulfilling the promise? American Journal of Mental Deficiency, 86, 115-126.
- Gottlieb, J., Cohen, L., & Goldstein, L. (1974). Social contact and personal adjustment on variables relating to attitudes towards EMR children. Training School Bulletin, 71, 9-16.
- Gottlieb, J., & Leyser, Y. (1981). Facilitating the social mainstreaming of retarded children. Exceptional Quarterly, 1, 57-70.
- Gottlieb, J., Semmel, M.I., & Veldman, D.J. (1978). Correlates of social status among mainstreamed mentally retarded children. Journal of Educational Psychology, 70, 396-405.
- Greenberg, J., & Dootlittle. (1977). Can schools speak the language of the deaf? The New York Times Magazine, December 11, 1977, Section 6.
- Greenmun, R.M. (1968). Society's attitudes and popular conceptions and concerns of the deaf. American Annals of the Deaf, 103.
- Gresham, F.M. (1981a). Social skill training with handicapped children: A review. Review of Educational Research, 51, 139-176.
- Gresham, F.M. (1981b). Assessment of children's social skills. Journal of School Psychology, 19, 120-133.
- Gresham, F.M. (1982a). A mode for the behavioral assessment of behavior disorders in children. Measurement considerations and practical applications. Journal of School Psychology, 20, 131-141.

- Gresham, F.M. (1982b). Misguided mainstreaming. The care for social skills training with handicapped children. Exceptional Children, 48, 422-433.
- Gresham, F.M. (1983). Social skills assessment as a component of mainstreaming placement decisions. Exceptional Children, 49, 331-336.
- Gresham, F.M. (1984). Social skills and self-efficacy for exceptional children. Exceptional Children, 51, 253-261.
- Haring, N.G., & Krug, D.A. (1975). Placement in regular programs: Procedures and results. Exceptional Children, 41, 413-417.
- Hartup, W.W., & Lougee, M.D. (1975). Peers as models. School Psychology Digest, 4, 11-22.
- Hoffman, E. (1963). The American public schools and the deviant child: The origins of their involvement. Journal of Special Education, 9, 415-416.
- Hoskin, J. (1978). Deaf students in post secondary schools and implications for section 504. American Annals of the Deaf, 123.
- Hus, Y. (1979). The socialization process of hearing impaired children in a summer day camp. Volta Review, 150-156.
- Jacobs, L.R. (1976). Attitudes of normal-hearing college students towards their hearing impaired classmates. Center on Deafness Publication Series #1, California State University, Northridge.
- Johnson, D.W. (1980). Group processes: Influences on student-student interaction on school outcomes. In J. McMillan (Ed.), The social psychology of school learning. New York: Academic Press.
- Johnson, R., & Johnson, D.W. (1980). The social integration of handicapped students into the mainstream. In M. Reynolds (Ed.), Social acceptance and peer relationships of the exceptional child in the regular classroom. The Council for Exceptional Children.
- Johnson, R., & Johnson, D. (1980). Integrating handicapped students into the mainstream. Exceptional Children, 47.

- Jones, R.L., & Murphy, H.J. (1972). The Northridge plan for higher education of the deaf. American Annals of the Deaf, 117, 612-616.
- Justman, J., & Maskowitz, L. (1957). The integration of deaf children in a hearing class. New York: Bureau of Education Research, Board of Education.
- Kaufman, M.J., Gottlieb, J., Agard, J.A., & Kukic, M.B. (1975). Mainstreaming: Towards an explication of the construct. Focus on Exceptional Children, 7, 1-12.
- Kelman, H.C. (1961). Processes of opinion change. Public Opinion Quarterly, 25, 57-78.
- Kelman, H.C. (1963). Attitude change and social influence. Psychology Today.
- Kennedy, A.E. (1973). The effects of deafness on personality. Journal of Rehabilitation of the Deaf, 6, 22-23.
- Kennedy, P., & Burininks, R.H. (1974). Social status of hearing impaired children in regular classrooms. Exceptional Children, 40, 336-342.
- Kennedy, P., Northcott, W., McCauley, R., & Williams, S. (1976). Longitudinal sociometric and cross-sectional data on mainstreaming hearing impaired children: Implications for preschool programming. Volta Review.
- Kilburn, J. (1983). Changing attitudes. The Council for Exceptional Children.
- Klick, R., Ono, H., & Hastorf, H.H. (1966). The effects of physical deviance upon face to face interaction. Human Relations, 19, 425-436.
- Knapp, P. (1968). Emotional aspects of hearing loss. Psychosomatic Medicine, 10, 203-209.
- Knittle, M.G. (1963). A comparison of attitudes towards the disabled between subjects who had a physically disabled sibling. Unpublished doctoral dissertation, State University of South Dakota.
- Kutner, B. (1971). The social psychology of disability. Rehabilitation Psychology, 143-167.
- Ladd, G., Munson, H., & Miller, J. (1984). Social integration of deaf adolescents in secondary-level mainstreamed programs. Exceptional Children.

- Larson, E.D. (1978). A successful secondary school program dealing with disaffected youths. Exceptional students in secondary schools. The Council for Exceptional Children, 32-38.
- Lazar, A.L., Orpet, R., & Demas, G. (1976). The impact of class instruction on changing student attitudes. Rehabilitation Counseling Bulletin, 20, 66-68.
- Lehrer, A.J. (1981). Cognitive effects of mainstreaming. Unpublished masters thesis, Claremont Graduate School, Department of Psychology.
- Levine, M., Hummel, J.W., & Salzer, R.T. (1982). Mainstreaming requires something more. The person-environment fit. Clinical Psychology Review, 2, 1-25.
- MacMillan, D.L., & Semmel, M.I. (1977). Evaluation of mainstreaming programs. Focus on Exceptional Children, 9, 1-14.
- Madden, N.A., & Slavin, R.E. (1983). Mainstreaming students with mild handicaps: Academic and social outcomes. Review of Educational Research, 53, 519-569.
- Marburg, C.C., Houston, B.K., & Holmes, D.S. (1976). Influences of multiple models on the behavior of retarded children. Journal of Counseling and Clinical Psychology, 44, 514-519.
- Marsh, V., & Friedman, R. (1972). Changing public attitudes towards blindness. Exceptional Children, 38, 426-428.
- McCarthy, R., & Stodden, R. (1979). Mainstreaming secondary students: A peer tutoring model. Teaching Exceptional Children.
- Mecham, R., & Van Dyke, R.C. (1971). Pushing back the walls between hearing and hearing-impaired children. Volta Review.
- Myers, P. (1963). The effect of group counseling upon certain educative and emotional factors of first year students in an associate degree program in ministry. Unpublished doctoral dissertation, New York University.
- Moed, G., Wright, B., Feshback, S., & Sandry, M. (1963). A picture story test for the use in physical disability. Perceptual and Motor Skills, 17, 483-497.

- Monson, D., & Shortleff, C. (1979). Alerting attitudes towards the physically handicapped through print and non-print media. Language Arts, 56, 163-174.
- Morgan, S.R. (1977). A descriptive analysis of maladjusted behavior in socially rejected children. Behavioral Disorders, 3, 23-30.
- Mosley, J.L. (1978). Integration: The need for a systematic evaluation of the socio-adaptive aspect. Education and Training of the Mentally Retarded, 1, 4-8.
- Murphy, A.T., Dickstein, J., & Dripps, E. (1960). Acceptance, rejection, and the hearing impaired. Volta Review, 62, 208-211.
- Murphy, H. (1979). Psycho-social aspects of integration at California State University, Northridge. Volta Review, 81, 50-52.
- Myklebust, H.R. (1966). Psychology of Deafness. New York: Grune and Stratton.
- Northcott, W.H. (Ed.) (1973). The hearing impaired child in a regular classroom. Washington, DC: A.G. Bell Association for the Deaf, Inc.
- Orlansky, M.D. (1979). Active learning and student attitudes toward exceptional children. Exceptional Children, 46, 49-52.
- Parish, T.S., & Ohlsen, R.L. (1978). A look at mainstreaming in light of children's attitudes towards handicapped. Perceptual and Motor Skills, 46, 1019-1021.
- Rackway, A.M., & Stevenson, J. (1968). An evaluation of an attitude towards deafness. Journal of Personality and Social Psychology, 2, 183-191.
- Rapier, J., Adelson, R., Carey, R., & Croke, K. (1972). Changes in children's attitudes toward physically handicapped. Exceptional Children, 6, 261-265.
- Raver, S.A. (1979). Preschool integration: Experiences from the classroom. Teaching Exceptional Children, 12, 22-26.
- Ray, J.S. (1974). Behavior of developmentally delayed and non-delayed toddler-age children. Unpublished doctoral dissertation, George Peabody College.

- Reich, C., Hambleton, D., & Houldin, B. (1977). The integration of hearing impaired children in regular classrooms. American Annals of the Deaf, 122, 534-543.
- Reivich, R.S., & Rothrock, J.A. (1972). Behavior problems of deaf children and adolescents. A factor analytic study. Journal of Speech and Hearing Research, 15, 98-104.
- Richardson, S.A., & Emerson, P. (1970). Race and physical handicap in children's preference for other children. Human Relations, 23, 31-36.
- Rosenberg, B.S., & Gaier, E.L. (1977). The self-concept of the adolescent with learning disabilities. Adolescence, 12, 489-498.
- Rosenblum, L. (1975). Friendship and peer relations. New York: John Wiley.
- Salend, S. (1984). Factors contributing to the development of successful mainstreaming programs. Exceptional Children, 50.
- Sarfaty, L., & Katz, S. (1978). The self-concept and adjustment patterns of hearing-impaired pupils in different school settings. American Annals of the Deaf, 123, 438-441.
- Scheffers, W.L. (1977). Sighted children learn about blindness. Journal of Visual Impairment and Blindness, 6, 258-261.
- Schlass, P., Smith, M., & Stokes, R. (1982). Applied study of education and treatment strategies for hearing impaired children. Volta Review.
- Schroedel, J., & Schiff, W. (1972). Attitudes toward deafness among several deaf and hearing populations. Rehabilitation Psychology, 19, 59-70.
- Schwartzwald, F.R. (1981). A study of the effect of cognitive and affective intervention on attitudes of upper elementary children toward physically disabled children. Unpublished doctoral dissertation, Texas Worman University.
- Semmel, M.I., Gottlieb, J., & Robinson, N.M. (1976). Mainstreaming: Perspectives on educating handicapped children in the public schools. Review of Research in Education. Washington, DC: American Educational Research Association.

- Sheare, J.B. (1978). The impact of resource programs upon the self-concept and peer acceptance of learning disabled children. Psychology in the Schools, 15, 406-412.
- Shears, L., & Jensema, C. (1969). Social acceptability of anomalous persons. Exceptional Children, 36, 91-96.
- Shein, E.W. (1978). The effect of lecture and sign language instruction on changing attitudes towards the hearing impaired in an elementary school population. Unpublished doctoral dissertation, Hofstra University.
- Shirin, A. (1982). Social interaction of partially mainstreamed hearing impaired children. American Annals of the Deaf, 20-25.
- Shortridge, S.D. (1981). Facilitating attitude change towards the hearing impaired in an elementary school population. Unpublished doctoral dissertation, Hofstra University.
- Sipple, H., & D'Alonzo, B.J. (1977). Changing attitudes towards T.M.R. through an integrated recreational program. Mental Retardation, 15, 64.
- Stephens, T.M. (1978). Social skills in the classroom. Columbus, OH: Cedars Press.
- Stewart, L. (1972). A truly silent minority. Volta Review, 205-211.
- Strain, P.S., Odom, S.L., & McConnell, S. (1984). Promoting social reciprocity of exceptional children. Identification, target behavior selection, and intervention. Remedial and Special Education, 5, 21-28.
- Strong, E.K. (1951). Charge of interest with age. Stanford, CA: Stanford University Press.
- Szuhay, J.A. (1961). The development of attitudes towards the physically disabled. Unpublished doctoral dissertation, University of Iowa.
- Terrell, L.W. (1981). Children's attitudes toward visual impairment: The effects of a teaching unit. Education of the Visually Handicapped, 3, 68-76.
- Vandell, D.L., & George, L.B. (1981). Social interaction in hearing and deaf preschoolers: Successes and failures in initiations. Child Development, 52, 627-635.

- Vermeij, J.A. (1977). A blind teacher speaks out on teaching the blind student. Today's Education, 67, 77-78.
- Vernon, M. (1984). Your journal apologizes (editorial). American Annals of the Deaf, 129, 398.
- Vernon, M., & Pickett, H. (1976). Mainstreaming issues and a model plan. Audiology and Hearing Education, 2, 5-11.
- Weinberg, N. (1978). Perceived similarity of the disabled: A function of degree of contact. Paper presented at American Psychological Association, Toronto, Canada.
- Westervelt, V.D. (1981). Intervention with peers of physically handicapped children. Unpublished doctoral dissertation, The University of North Carolina.
- Westervelt, V.D., & McKinney, J. (1980). Effects of a film on nonhandicapped children's attitudes toward the handicapped. Exceptional Children, 46, 294-296.
- Westervelt, V.D., & Turnbull, A.P. (1980). Children's attitudes towards physically handicapped peers and intervention approaches for attitude change. Physical Therapy, 7, 896-901.
- Wisley, D.W., & Morgan, S.B. (1981). Children's ratings of peers presented as mentally retarded and physically handicapped. American Journal of Mental Deficiency, 3, 281-286.
- Yates, V. (1979). Mainstreaming of children with a hearing loss. Charles Thomas Publishers.
- Youdelman, K.S. (1984). Increasing peer information about problems related to severe hearing impairment. Columbia University Teachers College.
- Zigler, E., & Muenchow, S. (1979). Mainstreaming: The proof is in the implementation. American Psychologist, 34, 933-966.

APPENDIX A

Nonhandicapped Students' Attitudes Towards Deaf Students

Patricia D. Buckney

March 1987

Introduction

The purpose of this questionnaire is to help us learn something about peer relationships between deaf students and other students of the school population.

The survey will take approximately 30 minutes, but there is no time limit for completing the questions. Do not put your name on the paper. The teachers here will not see your individual choices. There are no right or wrong answers, simply select one of five possible choices according to how you feel. Read the following example and mark an "X" by the choice that comes closest to how you feel:

"Madonna is the best "pop" singer today!"

strongly agree,

agree,

undecided,

disagree,

strongly disagree.

(Do You Have Any Questions?)

Please honestly and thoughtfully select an answer for each statement. Remember your answers will be treated with the strictest confidence, so please choose exactly the way you "feel." When you cannot answer a statement on the basis of actual experience, mark the statement according to what you would be most likely to do, if the situation should arise. Please do not omit any of the statements. Your cooperation will help us plan ways to improve student relationships.

Nonhandicapped Students' Attitudes Towards Deaf Students

1. Deaf students can get the same grades in school as other students.
 - strongly agree
 - agree
 - undecided
 - disagree
 - strongly disagree

2. Some deaf students can play the same games as other students.
 - strongly agree
 - agree
 - undecided
 - disagree
 - strongly disagree

3. It would be easy for me to make friends with a deaf student.
 - strongly agree
 - agree
 - undecided
 - disagree
 - strongly disagree

4. I am not uneasy with someone who wears a hearing aid.
 - strongly agree
 - agree
 - undecided
 - disagree
 - strongly disagree

5. Teachers are more caring and patient with deaf students than with other students.
 - strongly agree
 - agree
 - undecided
 - disagree
 - strongly disagree

6. I would enjoy learning to communicate with a student who is deaf.
 - strongly agree
 - agree
 - undecided
 - disagree
 - strongly disagree

7. It takes a while for me to warm up to a deaf student.
 - strongly agree
 - agree
 - undecided
 - disagree
 - strongly disagree

8. Most teachers try to give the same kind of help to all students including deaf students.
- strongly agree
 agree
 undecided
 disagree
 strongly disagree
9. I wouldn't mind working on a class project with a deaf student in my group.
- strongly agree
 agree
 undecided
 disagree
 strongly disagree
10. In the beginning I am friendly and polite towards deaf students, but later I tend to withdraw from being with them.
- strongly agree
 agree
 undecided
 disagree
 strongly disagree
11. Deaf students can become good friends with students who are not deaf.
- strongly agree
 agree
 undecided
 disagree
 strongly disagree
12. I would try to help a deaf student if he/she needed it.
- strongly agree
 agree
 undecided
 disagree
 strongly disagree
13. I would play with a deaf student even if he/she cannot talk the same as other students.
- strongly agree
 agree
 undecided
 disagree
 strongly disagree

14. I would invite a deaf friend to my birthday party dance.
_____ strongly agree
_____ agree
_____ undecided
_____ disagree
_____ strongly disagree
15. I would choose a student who is deaf for my team if he/she could play the game.
_____ strongly agree
_____ agree
_____ undecided
_____ disagree
_____ strongly disagree
16. I would share a locker with a deaf student.
_____ strongly agree
_____ agree
_____ undecided
_____ disagree
_____ strongly disagree
17. Deaf people can compete with others for many different types of jobs.
_____ strongly agree
_____ agree
_____ undecided
_____ disagree
_____ strongly disagree
18. A hearing aid is used to make sounds louder.
_____ strongly agree
_____ agree
_____ undecided
_____ disagree
_____ strongly disagree
19. All deaf students get poor grades.
_____ strongly agree
_____ agree
_____ undecided
_____ disagree
_____ strongly disagree
20. Deaf people can enjoy music.
_____ strongly agree
_____ agree
_____ undecided
_____ disagree
_____ strongly disagree

21. Deaf people have the ability to become lawyers or doctors just as people with normal hearing.
 _____ strongly agree
 _____ agree
 _____ undecided
 _____ disagree
 _____ strongly disagree
22. Deaf people can see better than people who can hear.
 _____ strongly agree
 _____ agree
 _____ undecided
 _____ disagree
 _____ strongly disagree
23. Many deaf people can hear loud noises.
 _____ strongly agree
 _____ agree
 _____ undecided
 _____ disagree
 _____ strongly disagree
24. Deaf people are as smart as people with normal hearing.
 _____ strongly agree
 _____ agree
 _____ undecided
 _____ disagree
 _____ strongly disagree
25. Some deaf people graduate from college.
 _____ strongly agree
 _____ agree
 _____ undecided
 _____ disagree
 _____ strongly disagree
26. Very loud noises bother some deaf people.
 _____ strongly agree
 _____ agree
 _____ undecided
 _____ disagree
 _____ strongly disagree
27. A hearing aid cannot cure a deaf person's hearing loss.
 _____ strongly agree
 _____ agree
 _____ undecided
 _____ disagree
 _____ strongly disagree

Please read the student descriptions below, decide how you feel about him/her,...then select where you think he/she should work.

28. Your school is planning a Christmas program. The students will sing and dance. Although Lisa is deaf she takes dancing lessons and is a good dancer. Lisa wants to be in the program. She should work with:
- my class
 - another class
 - undecided
 - a special class
 - at home
29. Charles is partially deaf in one ear, and wears a hearing aid. He is a hall monitor and gets along well with all the students. Charles wants to join the scout team. Charles should join:
- my class team
 - another class team
 - undecided
 - a special class team
 - no team
30. William has a hearing problem and wears two hearing aids. Although he is very smart, he is shy about making friends because his speech sometimes sounds different. He should work with:
- my class
 - another class
 - undecided
 - a special class
 - at home
31. Jane is a good student and draws very beautiful pictures. She wants to participate in the art fair but has difficulty explaining her project. Jane is deaf. She should work with:
- my class
 - another class
 - undecided
 - a special class
 - at home
32. Math is Walter's favorite subject; he wants to join the math club. He can work any problem the teacher gives, therefore he gets good grades. Walter is deaf and does not talk clearly but he uses some signs and gestures to explain his work. Walter should work with:
- my class
 - another class
 - undecided
 - a special class
 - at home

33. The science club is awarding a \$100.00 prize to the class that has the best space diorama. Rudell has a collection of space ships that he made, and wants to participate in the contest. Rudell is partially deaf and wears a hearing aid. He should work with:

my class
 another class
 undecided
 a special class
 at home

34. The school's relay race is next month. John is deaf, but he is a very fast runner and has been practicing every day to increase his speed. John has qualified to be a member of a relay team. He should work with:

my class team
 another class team
 undecided
 a special class team
 no team at all

35. Valda is deaf in one ear and is having a difficult time in the reading class. She seems to understand the stories, but has trouble discussing the questions because some of the students laugh at the way she sounds when she talks. She should work with:

my class
 another class
 undecided
 a special class
 at home

36. Harold enjoys writing stories. Last year he won a prize for writing the school poem and the words for our school song. Harold wants to join the drama club but is worried that some may object because he is deaf in one ear and wears a hearing aid. Harold should work with:

my class
 another class
 undecided
 a special class
 at home

37. The P.T.A. is sponsoring a beach party. The older students are organizing safety patrol teams. Each team has five ground patrol members (all good swimmers). Another member watches the beach from the lookout stand and pulls the emergency alarm if needed. Todd has volunteered to work on the lookout stand. He is deaf in one ear and wears a hearing aid, but he is also very alert, and he knows most of the younger children from monitoring the lunch room. Todd should join:

my team
 another team
 undecided
 a special team
 no team at all

38. Your school's open house is next week and all parents are expected to come. Carol is partially deaf; she wears a hearing aid but most people can understand her speech. Carol wants to be a member of the student's reception committee. They will escort the parents to rooms and answer any questions about the various activities. Carol should work with:

my committee
 another committee
 undecided
 a special committee
 no committee

APPENDIX B

Nonhandicapped Students Attitudes Towards Deaf Students Survey
 Girls & Boys Pre and Post Test Scale Scores
 Means and Standard Deviations (N = 160)

	Group I N=20		Group II N=20		Group III N=20		Group IV N=20		N=160	
	X	SD	X	SD	X	SD	X	SD	X	SD
O Pre	35.750	4.789	34.950	5.031	36.050	3.426	33.250	3.462	34.256	4.901
P Post	45.750	2.918	42.450	3.845	42.350	3.558	34.050	3.845	40.081	5.228
A										
O Pre	32.050	6.345	33.200	5.890	34.550	3.252	33.250	4.887	34.256	4.901
P Post	41.550	3.940	40.950	2.585	39.400	3.589	33.150	4.120	40.081	5.228
A										
B Pre	19.800	3.037	20.300	3.496	19.650	1.663	19.350	2.059	19.344	3.299
H Post	24.200	1.436	22.700	2.536	23.200	1.852	19.100	2.808	21.931	2.997
A										
B Pre	17.000	5.161	20.100	3.110	19.400	2.349	19.150	3.617	19.344	3.299
H Post	23.450	1.468	22.500	1.933	21.450	2.585	18.850	3.689	21.931	2.997
A										
I Pre	16.050	3.804	14.900	3.447	17.100	2.222	15.000	3.728	15.631	3.377
N Post	22.100	1.586	19.450	2.139	18.550	2.946	14.700	3.130	18.506	3.380
A										
I Pre	15.800	3.847	15.100	3.386	15.650	3.646	15.650	2.265	15.631	3.377
N Post	19.900	2.360	19.450	2.946	18.450	2.564	15.450	2.564	18.506	3.380
A										

Nonhandicapped Students Attitudes Towards Deaf Students Survey
 Girls & Boys Pre and Post Test Scale Scores
 Means and Standard Deviations (N = 160)

	Group I N=20		Group II N=20		Group III N=20		Group IV N=20		N=160	
	X	SD	X	SD	X	SD	X	SD	X	SD
S Pre	38.200	4.432	40.300	5.420	34.850	6.177	37.700	4.680	36.575	6.109
D Post	49.050	2.064	48.000	2.555	44.850	3.829	38.550	5.671	44.344	5.892
A										
S Pre	32.500	7.287	37.350	4.660	36.550	7.876	35.150	4.923	36.575	6.109
D Post	47.300	3.373	45.200	3.847	45.650	4.171	36.150	5.842	44.344	5.892
A										

APPENDIX C

Nonhandicapped Students Attitudes Towards Deaf Students Survey
 Boys Pre and Post Test Scale Scores
 Means and Standard Deviations (N = 80)

	Group I N=20		Group II N=20		Group III N=20		Group IV N=20		Scales N=160	
	X	SD	X	SD	X	SD	X	SD	X	SD
O Pre	32.050	6.345	33.200	5.890	34.550	3.252	33.250	4.887	34.256	4.901
P Post	41.550	3.940	40.950	2.585	39.400	3.589	33.150	4.120	40.081	5.228
A										
B Pre	17.000	5.161	20.100	3.110	19.400	2.349	19.150	3.617	19.344	3.299
H Post	23.450	1.468	22.500	1.933	21.450	2.585	18.850	3.689	21.931	2.997
A										
I Pre	15.800	3.847	15.100	3.386	15.650	3.646	15.650	2.265	15.631	3.377
N Post	19.900	2.360	19.450	2.946	18.450	2.564	15.450	2.564	18.506	3.380
A										
S Pre	32.500	7.287	37.350	4.660	36.550	7.876	35.150	4.923	36.575	6.109
D Post	47.300	3.373	45.200	3.847	45.650	4.171	36.150	5.842	44.344	5.892
A										

Nonhandicapped Students Attitudes Towards Deaf Students Survey
 Girls Pre and Post Test Scale Scores
 Means and Standard Deviations (N = 80)

	Group I N=20		Group II N=20		Group III N=20		Group IV N=20		N=160	
	X	SD	X	SD	X	SD	X	SD	X	SD
O Pre	35.750	4.789	34.950	5.031	36.050	3.426	33.250	3.462	34.256	4.901
P Post	45.750	2.918	42.450	3.845	42.350	3.558	34.050	3.845	40.081	5.228
A										
B Pre	19.800	3.037	20.300	3.496	19.650	1.663	19.350	2.059	19.344	3.299
H Post	24.200	1.436	22.700	2.536	23.200	1.852	19.100	2.808	21.931	2.997
A										
I Pre	16.050	3.804	14.900	3.447	17.100	2.222	15.000	3.728	15.631	3.377
N Post	22.100	1.586	19.450	2.139	18.550	2.946	14.700	3.130	18.506	3.380
A										
S Pre	38.200	4.432	40.300	5.420	34.850	6.177	37.700	4.680	36.575	6.109
D Post	49.050	2.064	48.000	2.555	44.850	3.829	38.550	5.671	44.344	5.892
A										

APPENDIX D

Nonhandicapped Students Attitudes Towards Deaf Students Survey
 Girls Pre and Post Test Scale Scores
 Means and Standard Deviations (N = 72)

	Group I N=17		Group II N=17		Group III N=19		Group IV N=19		Scales N=141	
	X	SD	X	SD	X	SD	X	SD	X	SD
O Pre	26.944	3.74	27.000	2.96	27.737	2.70	24.842	3.00	26.170	3.493
P Post	33.444	1.61	31.000	2.09	31.526	2.50	26.579	3.15	29.660	3.824
A										
B Pre	27.778	3.40	28.875	3.000	27.263	2.28	27.053	2.34	27.504	3.237
H Post	33.944	1.89	31.437	3.01	32.421	2.58	27.263	2.94	30.553	3.750
A										
I Pre	22.211	1.32	19.687	2.27	18.474	3.00	15.105	2.62	18.567	3.276
N Post	25.444	3.29	22.437	3.70	25.737	2.64	15.579	2.28	24.199	3.413
A										
S Pre	42.167	5.40	44.375	6.45	38.000	6.14	42.167	4.785	41.021	6.289
D Post	54.167	2.03	52.500	2.73	50.389	4.20	54.167	5.69	48.965	6.071
A										

APPENDIX E

Nonhandicapped Students Attitudes Towards Deaf Students Survey
 Boys Pre and Post Test Scale Scores
 Means and Standard Deviations (N = 69)

	Group I N=15		Group II N=17		Group III N=18		Group IV N=19		Scales N=141	
	X	SD	X	SD	X	SD	X	SD	X	SD
O Pre	26.286	2.58	25.667	4.51	26.611	3.38	24.474	3.73	26.170	3.49
P Post	31.072	3.82	31.000	1.91	29.667	3.08	24.579	3.56	29.666	3.82
A										
B Pre	26.857	3.86	27.556	4.03	27.722	2.74	27.053	4.05	27.504	3.23
H Post	32.286	1.68	31.611	2.25	29.611	3.34	26.632	4.19	30.553	3.75
A										
I Pre	19.929	2.09	19.833	2.78	19.667	2.40	15.105	2.61	18.567	3.27
N Post	25.143	3.59	24.611	3.26	24.056	3.25	15.577	2.77	24.199	3.41
A										
S Pre	38.286	6.01	42.333	4.89	41.421	9.17	40.053	5.00	41.021	6.28
D Post	51.714	3.93	50.111	4.17	50.105	3.97	41.158	6.03	48.965	6.07
A										

APPENDIX F

Nonhandicapped Students Attitudes Toward Deaf Students Survey

Pre-Post Test Questions

Means and Standard Deviations

Scale: Opinion (OPA)	Pre-test		Post-test	
	X	SD	X	SD
1 - D.S. can get same grades	3.9	.921	4.5	.661
2 - D.S. can play same games	3.8	.94	4.3	.84
3 - D.S. easily to make friends	2.9	1.05	3.6	1.07
6 - Will learn to communicate with D.S.	3.8	1.19	4.4	.831
9 - Would work with D.S. on class project	3.4	1.12	4.1	.949
10 - Friendly but later withdraw	3.4	1.04	4.0	1.03
Average Item X	3.6		4.2	

Scale: Behavior (BHA)

11 - Would make friends with D.S.	3.4	1.1	4.4	.949
12 - Would help D.S. with project	4.1	1.0	4.5	.809
13 - Would play with D.S. if couldn't talk	3.9	.99	4.4	.770
14 - Would invite D.S. to my birthday party	3.4	.88	4.0	.661
15 - Would chance D.S. for my team	4.2	1.01	4.6	.955
16 - Would share lockers with D.S.	3.6	.91	4.2	.695
Average Item X	3.5		Post 4.4	

Scale: Information (INA)

17 - D.S. can compete for jobs	3.5	.92	4.1	.932
20 - D.S. can enjoy music	2.8	1.07	3.5	1.11
21 - D.S. can become lawyers and doctors	3.2	1.2	4.0	1.00
23 - D.S. can see better than hearing people	2.8	1.1	4.2	1.15
24 - D.S. are as smart as hearing people	3.5	1.1	4.3	1.00
25 - D.S. can graduate from college	3.1	1.6	4.0	1.02
27 - Hearing aids cannot cure deafness	3.0	.88	4.3	.937
Average Item X	3.1		4.2	

Scale: Social Distance (SDA)	Pre-test		Post-test	
	X	SD	X	SD
I would choose...				
28 - Lisa for my Xmas dance	3.8	1.10	4.6	.895
29 - Charles for Scout team	4.1	1.00	4.6	.865
30 - Wm for classmate	3.1	1.07	4.1	1.20
31 - Jane for drawing project	3.2	1.89	4.2	1.18
32 - Walter for Math Club	4.0	1.57	4.6	.954
33 - Rudell for Science Project	3.9	1.12	4.7	.765
35 - Valda for Reading	4.0	1.11	4.0	1.20
36 - Harold for Writing Contest	3.0	1.62	4.4	1.01
37 - Todd for Patrol Team	3.6	1.78	4.6	.865
38 - Carol on Reception Committee	3.5	1.24	4.5	.932
Average Item X	3.4		4.3	

APPROVAL SHEET

The dissertation submitted by Patricia D. Buckney has been read and approved by the following committee:

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

6-26-89
Date

Martha Ellen Wynne
Director's Signature