

Academically Gifted Deaf Students Attending Regular Four-Year Colleges and Universities

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Abstract

Recent research has indicated that there are approximately 2,000-3,000 deaf students attending regular four-year colleges and universities. The research has indicated that these students are academically gifted and have certain characteristics that contribute to their success in a mainstreamed postsecondary environment. It has been found that the students are integrated with their hearing peers and participate in the academic and social activities of their schools. Furthermore, interviews with both the students and the service providers shows that the adequacy and quality of services for these students varies from campus to campus.

INTRODUCTION

Academically Gifted or Academic High Achiever

A great deal of attention has been focused on meeting the educational needs of gifted students; however, we do not know if the same attention is being given to what we could call "gifted deaf students." The educational system in schools for the deaf is generally focused on meeting the needs of the average deaf student, or those most in need of special efforts. It is not to say that the bright deaf students are left out; there are many schools taking the needs of these students into consideration and providing an educational setting that meets their needs. We do not know, however, if "gifted" deaf students in the mainstream are receiving the same kind of support and attention that is focused on hearing students. It can only be assumed that each school may approach this issue in a different way,

It is also difficult to define what is meant by a gifted student, much less a gifted deaf student. There is no criteria to determine how deaf students could be classified as gifted or not gifted. Thus, it would be reasonable to state that, like any other student, some deaf students demonstrate the same academic ability and high achievement that some hearing students demonstrate.

This study, although not designed for the purpose of identifying gifted deaf students, discovered that some characteristics of these students clearly indicate they are "academically gifted" or "high academic achievers." It was felt, for the sake of clarity, that the latter term is more appropriate and there are several reasons for this. First, the term gifted is highly overused in education today. Second, a student, either deaf or hearing, can be gifted in one area of accomplishment, but may not do well in another academic area. For example, a student may excel in the domain of music, but do very poorly in the domain of mathematics. Third, the use of IQ tests to determine the academic placement or achievement of a student is a poor indicator of the student's ability in light of recent research on intelligence, especially that of Gardner (1993) and others in the field of multi-intelligence and cognitive development. Finally, each student is an

individual; the student's background characteristics, secondary education, socioeconomic status (SES), parental encouragement, and other factors all contribute in some way to their academic success.

Before going into a discussion of the research and its findings, it is important to understand the growth of postsecondary education for the deaf which, outside of Gallaudet University, has occurred over a relatively short span of time. There is also a need to understand the influence of mainstreaming, in elementary and secondary education, on postsecondary education. Finally, an understanding of the size of the population we are dealing with and some of the problems that support services have faced in meeting the needs of these students is important in forming a picture of the current situation.

Historical Background

To understand the growth of postsecondary education for deaf students, a brief background of the general growth of postsecondary education in the United States after World War II needs to be understood. Three major factors contributed to the rapid expansion of postsecondary education in the years following World War II. First, the federal legislation commonly known as the "G. I. Bill" provided postsecondary educational opportunities to students who might otherwise not have gone to college. Second, the creation and growth of community colleges, which started in the late 1940's and reached a peak in the late 1960's, created new opportunities for postsecondary education. Finally, the "baby boom" generation, the large number of sons and daughters of WW II veterans, swelled the enrollment of students to a record number in the 1960's. These three factors contributed to the massive expansion in postsecondary enrollment, staffing, and construction of new facilities. It is more than likely there will be a further expansion in postsecondary education as the influx from the current large elementary and secondary population reaches college age.

During this growth in postsecondary education another boost came in the form of societal changes in attitudes regarding college attendance. This centered on issues of college opportunities for children from low-income families, leading to increased financial support on the state and federal levels in a variety of forms (Stuckless & Frisina, 1976). Support ranged from the already low tuition available within the state university systems and in newly established community colleges, to direct loans and financial aid that allowed children from low-income families access to, and choice of, a postsecondary institution.

The societal movement also brought attention to the needs and aspirations of minority sectors of our society, including the needs of those who were deaf. It is well known that, in the early years of this nation's history, postsecondary educational opportunities for deaf people were virtually nonexistent. There were scattered examples of deaf individuals attending traditional colleges and universities in the 18th and 19th centuries; however, opportunities for postsecondary education for deaf students in the United States in significant numbers did not begin to occur until 1864 with the creation of the Columbia Institution for the Deaf, now known as Gallaudet University.

However, despite the size of the deaf population nationally, the creation of this specialized college did not result in large numbers of deaf students enrolling either there or in other postsecondary institutions. Part of the reason for this continuing small enrollment was that higher education was not widely considered

appropriate for deaf people until well into the 20th century. Edward Miner Gallaudet, the first president of Gallaudet, wrote in 1893 that Gallaudet College could have doubled its enrollment at that time were it not for factors which included "the mistaken impression, more or less deeply seated in the minds of many instructors of the deaf, that higher education does not really promote the happiness of this class of persons" (Gallaudet, 1893, p. 2).

A survey, conducted by Bigman (1961) in 1955, of 1,857 institutions led to the estimate that there were only 65 deaf students in regular colleges and universities throughout the country. He estimated that between Gallaudet, which had 299 students in 1955, and all other postsecondary institutions, only 364 deaf students were enrolled in postsecondary institutions in the United States in 1955.

In 1965, 101 years after the founding of Gallaudet, Congress passed, and President Johnson signed into law, the bill establishing the National Technical Institute for the Deaf (NTID) as one of the nine colleges of Rochester Institute of Technology (RIT); this gave the country its second national postsecondary institution for deaf students. The first 70 students were enrolled in 1968; today, there are approximately 1,000 students enrolled at NTID.

The period of 1964 to 1970 saw a rapid growth of many other special regional and local postsecondary programs for deaf students. Today, the number of deaf students served by such programs is estimated to total around 5,500. However, it is noted that most of these programs have been established within existing two-year community colleges or vocational/technical institutions. In fact, Schroedel and Watson (1991) have reported that there is a predominance of two-year colleges over four-year colleges as host institutions for the 150 special postsecondary programs for deaf students which exist throughout the country today (Rawlings, Karchmer, DeCaro & Allen, 1991). Schroedel and Watson (1991) noted that, in 1985, "48% of the 140 programs were based at community colleges, 28% at universities, 13% at vocational-technical institutes and 10% at two-year or four-year liberal arts colleges." Therefore, it is seen that 71% of the special programs are based in two-year institutes. The reason for such a large number of deaf students in two-year programs is due partly to the open enrollment policies of these institutions, and partly to depressed academic performance among deaf high school students (Allen, 1994).

Influence of Mainstreaming

Although the establishment of these programs provided a wider choice for deaf students, access to the full range of colleges and universities in the United States was still limited. On the one hand, deaf students had a choice of attending established programs with adequate support services such as interpreters, notetakers and tutors, and often with specially designed curricula and instruction; on the other hand, if qualified, they could seek admission to regular colleges and universities of their choice, but with few or no special services in place to facilitate their academic success. Furthermore, from the information above, it is obvious that the number of special programs for deaf students in four-year colleges or universities was very limited. However, because of the influence of mainstreaming, more and more deaf students were opting for enrollment in regular four-year colleges and universities whether or not they had specially designed

programs for deaf students, appropriate support services, or were devoid of services. To understand the reason for this shift in enrollment at the postsecondary level, we need to understand the influence of mainstreaming in the elementary and secondary levels of education.

Mainstreaming in Elementary and Secondary Education

Prior to the 1970's, most professionals considered special schools and classes to be the most appropriate placement option for students with severe disabilities. Such segregated schooling began to be questioned in the early 1960's and, by the 1970's, the concept of mainstreaming had moved to the forefront in the education of exceptional children. Supporters of mainstreaming believed that children with disabilities would benefit educationally by being placed in regular schools rather than in separate institutions (Winzer, 1993).

One of the agents for the transformation from segregated to integrated education was the passage of supportive legislation. Contemporaneous research indicated that four million out of seven million exceptional children were being inadequately served in separate institutions (Meadows, 1980). To address this inequity, PL 94-142, the Education for All Handicapped Children Act, was passed. A declining enrollment in residential schools for the deaf has been attributed to this law. While this decline really began before the law was passed, nevertheless PL 94-142 did have a powerful influence on the relative number of deaf students enrolled in schools for the deaf and in regular public schools. Today we are seeing even more powerful influences on schools for the deaf in the general form of governmental budget cutting; this is forcing states to reevaluate where deaf children will be taught.

Educators in the field of deaf education were aware that successful mainstreaming of deaf students required more than their mere placement in regular classrooms. Therefore, research focused on the relationship between successful mainstream placement and the degree of hearing loss, age at onset of loss, reading and language ability, and communication skills. Other factors such as race, sex, and economic status of the children were also investigated (Allen & Osborn, 1984; Karchmer & Trybus, 1977; Kluwin & Stinson, 1993; Moores & Kluwin, 1986; Northcott, 1971; Wolk, Karchmer, & Schildroth, 1982). All of this research focused on deaf students in elementary or secondary schools. However, we do not find any considerable amount of, or current, research on successful deaf students in regular postsecondary institutes, especially in regular four-year colleges or universities. What research there is on postsecondary education has been undertaken in special programs for deaf students.

Mainstreaming at the College Level

It needs to be taken into consideration that PL 94-142, while not directly applying to postsecondary education, has had an indirect impact on deaf students enrolling in regular postsecondary institutions in increasing numbers. Because a large number of them had been mainstreamed throughout elementary and secondary school, it was to be expected that many of them would decide to continue their education in a mainstream postsecondary setting rather than enroll in one of the special programs.

Another major factor in the increase in enrollment of deaf students in regular colleges and universities was the passage of Public Law 93-112: Section 504, better known as the Rehabilitation Act of 1973, and amended in 1974. This law provided federal guidelines and requirements regarding access to postsecondary educational institutions, including special services as needed, by individuals with disabilities. Also contributing to the increase in the enrollment of deaf students in regular colleges and universities was the fact that postsecondary institutions, faced with declining enrollments, were more willing to accept students with disabilities (Chickering & Chickering, 1978; Frankel & Sonnenberg, 1978; Gjerdingen, 1977; Hurwitz, 1983, 1991; Kirk & Gallagher, 1981; Lane, 1976; Mandell & Fiscus, 1981; Opperman, 1993; Rawlings & King, 1986).

Even with expanded access to postsecondary institutions, and the fact that the Rehabilitation Act of 1973 required postsecondary institutions to provide special services for disabled students, in the early years following this ruling, deaf students were often reluctant to make their needs known to the faculty and administrators of these institutions. It was not uncommon for deaf students to refrain from indicating that they were hearing impaired on their applications, or even after they had been admitted to their college or university (Chickering & Chickering, 1978; Hallahan & Kauffman, 1978). As a result, students sometimes did not obtain the needed support services and struggled through their programs, missing much of the information their hearing classmates received. Although many of them did complete the course work and obtain their degrees, the process was much more difficult and time consuming.

It needs to be remembered that, unlike the provision of other services for disabled students such as the installation of a ramp, providing special services such as interpreting and notetaking for deaf students is an ongoing expense. The expense of providing these special services for deaf students in regular colleges was often borne fully by these institutions, whereas virtually all the special programs were supported with federal, state, or local public funding. However, it should be added that state vocational rehabilitation agencies often paid for some or all of the cost of services; in fact, they continue even today to provide financial support for many deaf students attending regular postsecondary institutions. In addition, many deaf students are enabled to further their postsecondary education through Social Security Insurance (SSI) benefits.

Providing Support Services

Although the passage of PL 93-112: Section 504 helped open regular colleges and universities to students with disabilities, deaf students faced two obstacles. The first was that, despite the law requiring postsecondary institutions to provide special services to disabled students, the institutions were ill-prepared to provide them with an appropriate range of services (Chickering & Chickering, 1978; Hallahan and Kauffman, 1978; Mandell & Fiscus, 1981; Menchel, 1978; Redden, 1979).

A related problem was that, even if the institutions were prepared to provide services, the influx of deaf students into regular institutions was not matched by a supply of individuals who could provide the needed services for these students. One reason for this shortage was that, while the number of deaf

students in postsecondary institutions had been increasing, the training of staff required to provide adequate special services for them had not been keeping pace.

The shortage of interpreting services for the general public is also reflected in postsecondary institutions. Stuckless, Avery and Hurwitz (1989) note that "the demand for educational interpreting services currently exceeds the supply" (p. 2). This example of a shortage in one area may also extend to other areas of special services such as notetaking, tutoring, and counseling. Current research confirms that there is still a personnel problem in providing support services to deaf and hard of hearing students. A report by the National Center on Education Statistics (NCES) (1994) has stated that:

About one in five (18 percent of the institutions that enrolled any deaf or hard of hearing students in the last four academic years) had been unable to provide one or more requested support services to deaf and hard of hearing students. Fourteen percent of the institutions that had enrolled any deaf or hard of hearing students in the last four academic years had been unable to provide sign language interpreters (p. 22).

This report stated that the reason these institutions could not meet the demand for interpreters was there were not enough qualified personnel to meet the needs of deaf or hard of hearing students.

Furthermore, although it is known that interaction in extracurricular activities is an important part of life for any student (Tinto, 1987), research indicates that, approximately 20 years after the Rehabilitation Act of 1973, deaf students still do not have the support services they need to participate fully in extracurricular activities (Green, 1990; Strong, Charlson & Gold, 1987; Hurwitz, 1992; Walter, 1989).

It is an amazing fact that, with the shortage of interpreters, untrained notetakers, and other barriers to their education, the deaf students who are enrolled in regular four-year colleges and universities have done as well as they have under often very taxing circumstances. Nevertheless, this research indicated that the students who participated in this study do not regret their decision to attend a regular postsecondary institute rather than a program for deaf students.

Number of Deaf Students in Regular Postsecondary Institutions

As stated earlier, there are a large number of deaf students in regular postsecondary institutions; however, the actual number of deaf students enrolled full time in regular four-year colleges and universities is uncertain. There are several explanations for the difficulty in identifying the actual number of deaf students in regular postsecondary institutions. All students who identify themselves as having a hearing impairment, even a mild hearing loss, are counted in most of these studies as being hearing impaired. The exact number of deaf students who actually fit the definition of deaf as defined in this research (70 dB) is open to question; therefore, any comparisons among the various studies are very tenuous. Also, because regular colleges and universities do not require students to identify themselves as having a hearing impairment, there are many deaf or hard of hearing students on college campuses who have not been identified.

Nevertheless, there are several studies that provide a close estimate of the number of deaf students enrolled in postsecondary institutes. In 1988, Rawlings, Karchmer, and DeCaro identified 157 postsecondary programs that provided services for approximately 7,500 deaf students. It was estimated that an additional 30 to 40% of deaf students were enrolled in other colleges and universities (Rawlings & King, 1986). Around the same time, data obtained from 447 colleges and universities by the Association for Handicapped Student Services Programs in Postsecondary Education, now known as the Association on Higher Education and Disability, (1987) led to an estimate that, beyond the 7,500 deaf students enrolled in the special postsecondary programs, approximately 3,000 - 4,000 deaf students were enrolled in regular two and four-year institutions in the United States. Walter (1992) estimated that there were an additional 3,000 deaf students enrolled in regular colleges and universities who were not listed in the guide published by Rawlings, et al. (1988). These various estimates suggest that, as of 1987, the total number of deaf students in postsecondary institutions in the United States was between 10,500 and 11,000. It was stated earlier that around 5,500 deaf students were in special programs. If we include Gallaudet University and NTID, it is then estimated that between 3,000 to 4,000 deaf students were enrolled in regular two and four-year postsecondary institutions.

The most current data available from the NCES (1994) indicates that 20,040 students, enrolled in two and four-year colleges and universities, have been identified by their postsecondary institutions as deaf or hard of hearing. It should be noted that the 2,500 deaf students enrolled at NTID and Gallaudet University are not included in this survey. Among the groups identified by the NCES, 4,520 students were deaf, 7,770 were hard of hearing, and 7,750 were hearing-impaired students whose actual levels of hearing loss were unknown. If we assume that 50% of the last group are deaf, then the total number of deaf students rises to 8,395. Adding the 2,500 students at Gallaudet and NTID to this number yields a total of 10,895 which is very close to the independent estimate of 10,500-11,000 discussed earlier. Even in the NCES study, it should be noted that the number of deaf students is only estimated; the institutes reported only those students who have identified themselves as being deaf, hard of hearing, or having a hearing impairment. Students who preferred not to identify themselves or ask for support services may not have been counted.

Several other independent estimates suggest there are at least 3,000 deaf students enrolled full time in regular two and four-year colleges and universities. However, how many of these students are enrolled full time in four-year colleges or universities remains conjectural.

METHODOLOGY AND DEFINITION OF TERMS

Methodology

The foundation of the research methodology used in this study is based on the importance of *working with* the research participants as *informants* rather than *subjects*. Spradley (1979) stated:

Informants are a source of information; literally, they become teachers for the ethnographer Investigators are not primarily interested in discovering the cultural knowledge of the subjects; they seek to confirm or disconfirm a specific hypothesis by

studying the subject's response. Work with the subject begins with preconceived ideas; work with informants begins with a naive ignorance. Subjects do not define what it is important for the investigator to find out; informants do (p. 25, 29).

Criteria for Selection of Students

The students selected for this study met the following criteria: (1) had a hearing loss of 70 dB or greater as measured in the better ear; (2) were sophomores or above in college; (3) were enrolled full time in four-year, accredited, undergraduate institutions within the New England region; and (4) were willing to participate in the study on a voluntary basis.

The reason for setting the criterion for the students to be in their sophomore class or above, was that by the sophomore year a student is less likely to drop out of college. Also, by the sophomore year, students have or have not developed friendships with their peers, are either participating or not participating in extracurricular activities, have made the adjustments to college life, have become comfortable with the college environment in general, and are able to evaluate their decision in terms of their satisfaction or dissatisfaction. Thus, by setting this criterion, the students in this study are fairly stable in their views and likely to persist to graduation, even if faced with difficulties, either of an academic or social kind.

No more than three students were interviewed at any one college or university in order to include as large a number of four-year postsecondary institutions as possible in the study. Each student was a voluntary participant in the study.

Criteria for Selection of Institutions

The institutions from which the student participants were selected met the following criteria: (1) did not have a program specifically designed for deaf students; (2) had fewer than 15 full-time deaf students enrolled; (3) did not have a coordinator of services for deaf students who devotes a minimum of 25% of his or her time to directing the program; (4) had an office or person responsible for disabled students services; and (5) were located within the New England region. Eighteen institutions, comprised of four-year colleges, and state and private universities, were selected on the basis of these criteria.

Inclusion of Service Providers

The coordinators of services for disabled students in these institutions were informed in an initial contact letter that the researcher also wished to interview them, during my visit to their campuses, in order to obtain their perspectives regarding the quality and adequacy of special services for deaf students. Upon confirmation of an interview appointment with a deaf student at each institution, an appointment was also arranged with the coordinator.

Locating the Students

Several methods were used to locate student informants:

First, letters were sent to members of the Association on Higher Education and Disability (AHEAD) who were located at institutions within the New England region. These letters were also sent to the offices of disabled student services of institutions in the New England region who were not affiliated with AHEAD. The letter stated the purpose of the research, inquired if any deaf students were attending their institution, if there were less than 15 deaf students, and asked if they would put the investigator in contact with these students through their office.

After confirmation that there were deaf students at these institutions, a "Dear Student" letter was sent to the institutions' coordinators to pass on to the appropriate students. The letter explained how the investigator obtained their names, the purpose of this research, and a request for permission to contact them directly to arrange an interview if they were willing to participate.

Second, contacts were made with deaf students attending colleges in the Boston area, with the understanding that they might be able to identify other deaf college students in the New England region.

Third, interpreters were asked if they were interpreting for other deaf students at institutions in this region. To protect the interpreters' code of ethics, no names were requested, but the interpreters were asked to inform the students of the research through a letter that was provided.

Fourth, assistance from the A. G. Bell Association for the Deaf was used to identify deaf students who had applied for scholarships over the past five years and were in four-year postsecondary institutions in the New England region. A letter was sent directly to the students explaining how the investigator obtained their name and the nature of this research. The letter was similar to the "Dear Student" letter sent to the service providers.

Through these methods, 80 deaf students from 32 four-year postsecondary institutions were identified. From this group, 33 students from 18 institutions were qualified and willing to participate in the study. The other students did not participate because: (a) they did not meet one or more of the criteria, e.g., they were freshman, or did not have a 70 dB or greater hearing loss; (b) they did not wish to participate in the study; or (c) the pre-determined criteria limited the number of deaf students being interviewed at each institution to three in order to provide a better cross section of students for the study from a variety of different kinds of postsecondary institutions.

Types of Postsecondary Institutions Attended

The students were enrolled full time in 18 different institutions, of which nine were private and nine were public. These 18 institutions had a total enrollment of 66 deaf students. The median was 3 with a range of 1 to 14 students. One large public university had 10 deaf students, and a small private college reported 14 deaf students. Two colleges, both of them small private institutions, had only one deaf student each.

The Interview

Introduction to the Interview

Prior to the interview, an informal meeting was arranged with the researcher and the student in an informal setting, such as in the lounge over coffee. Rapport was developed between the student and the researcher prior to the interview by sharing of experiences as deaf students and answering any questions they had.

The Interview Process

Audiotapes were used to record the interviews and interpreters were used during the interviews when necessary as a deaf person's voice does not always register well on audiotape; thus, the interpreter would voice for the student when necessary. The use of an interpreter also insured that valuable information given by each informant was not lost, and that probing questions could be asked for clarification.

An student interview *guide* (Appendix A), a service provider interview *guide* (Appendix B) and a demographic data sheet (Appendix C) were used during the interview. The interviews were structured so that each part of the interview referred to one of the specific questions which guided this research. During the interviews, interviewing techniques including reconstruction, open ended questions, reinforcement of responses, and probing were utilized (Bogdan & Biklen, 1982; Mishler, 1986; Seidman, 1991).

There were some variations from a typical interview in this research study. In a typical recorded interview, the researcher employs an audiotape recorder to record the interviewer's and the informant's voices. In this research, however, since both the student and the researcher were deaf, it could not be assumed that the quality of our recorded voices would be intelligible when played back on tape.

Therefore, in addition to voicing for the deaf person when applicable, it was also necessary to have an interpreter present for most sessions in the event that the informant or the researcher had difficulty understanding each other from speechreading alone. These variations from the typical interview led to several problems and several strategies were employed to overcome these problems; nevertheless, some information may have been lost.

Analyzing the Data

Transcribing and Coding the Data

The interviews were transcribed verbatim, with no grammatical corrections, and entered into a data base. The interviews were coded and analyzed following a series of qualitative methods in common use (Agar, 1980; Bogdan & Taylor, 1975; Mishler, 1986; Marshall & Rossman, 1989; Patton, 1978, 1990; Spradley, 1979). Coding was derived to obtain recurring patterns and themes for each research question.

Background Information

The demographic data (Appendix C) provided information on each student's degree of hearing loss, age at onset of the hearing loss, and the student's description of his/her hearing loss. The mean and range of the students' hearing losses were determined and the students were grouped by severity and age at

onset of their hearing loss. The SES of the family was indicated by the family income and education of the parents. The families were grouped by family income and parents' education. The students' pre-college experiences were defined by their mainstreaming experiences as indicated in their interviews and the information on the demographic data sheet, by their GPA's, and by their Scholastic Aptitude Test (SAT) scores, including the mathematics and verbal test scores. Finally, the number of students who used support services in high school was noted.

Interview Data

Within the context of the interviews, the analysis sought recurring patterns in relation to the questions which guided this research. Data analysis was ongoing as the data were collected, through reflection, discussion, and memo writing. This ongoing activity helped direct the focus of the analysis when the transcribed interviews were coded for recurring patterns.

The intent of the analysis of the interview data was not to interpret what the students were saying, but to form a narrative summary of the students' responses which would allow the "voices" of the students to describe their own experiences. A procedure described by Seidman (1991) was followed which allowed the interview transcripts to be marked, reduced, and shaped into a form which could be reported in the context of the research so others could share and understand the experience of the students. Profiles of the students' experiences were formed through this method.

It was not possible to put all of the students' or service providers' "voices" in the final research report. Instead, a sample of the responses showing similar trends throughout particular sections of the interviews was utilized.

Definition of Terms

For the purposes of this research the following selected terms are defined:

Deaf: The most common definitions of deafness are based on the degree of hearing loss as measured in decibels (dB) of pure-tone sounds necessary to hear across the 500-2000 cycles per second frequency range of speech, usually reported for the ear with the better hearing (Stuckless, 1987, pp. 368-9). For the purpose of this investigation, students with a loss at or beyond 70 decibels (dB) are considered deaf.

Interpreting/Interpreters: The use of a skilled intermediary to facilitate communication between hearing individuals and deaf individuals through the use of sign language and/or speech. As used in this research the term can refer to sign language, oral, or simultaneous interpreting.

Mainstreaming: The term "mainstreaming" came into being in the late 1960's when leaders in special education began to question the efficacy of residential or special class placement of handicapped children. In elementary and secondary education, mainstreaming means that a deaf student is placed full or part time in a regular classroom with hearing peers. Appropriate support services are provided for the student in the classroom, and resource rooms and other extra assistance are available for the student as needed.

All the students interviewed for this research were mainstreamed with hearing peers in a regular college setting and their support services vary. The literature review will also discuss deaf students in special programs who are mainstreamed with hearing peers, again with support services. The significance of the special program for these students includes the following: (a) support services tend to be more extensive than for the deaf students mainstreamed in regular colleges; and (b) there is an opportunity for social interaction with fellow deaf students.

Regular Colleges and Universities: These are accredited four-year undergraduate institutions, with or without graduate offerings, that do not include a special program for deaf students as defined below.

Special Programs: The 150 postsecondary institutions listed in Colleges and Careers for Deaf Students (Rawlings, et al., 1991) share the following criteria: (1) an academic unit specifically designed for deaf students; (2) an enrollment of 15 or more full-time deaf students; and (3) a coordinator who devotes a minimum of 25% of his or her time to directing the activities of the unit. Programs such as those at the National Technical Institute for the Deaf and Gallaudet University together serve more than 3,000 deaf students; most others serve between 15 and 100 deaf students.

Service Providers: As used here, this term applies to personnel who are in charge of providing support service to disabled students enrolled in regular four-year postsecondary institutions. They act in an administrative, supervisory role over persons who provide direct services to students, such as interpreters and notetakers.

Support Services: Services that are provided to deaf students in postsecondary institutions, such as interpreting, notetaking, tutoring, provision of speech amplification systems, reserved seating in classes, and other special provisions offered to deaf students in the academic and social environments within postsecondary institutions.

STATEMENT OF THE PROBLEM, THE PILOT STUDY AND RESEARCH QUESTIONS

Statement of the Problem

It is obvious from the data that more than 10,000 deaf students are presently enrolled in two and four-year colleges and universities in the United States. Because of their special needs, some of these deaf students choose to attend postsecondary programs for deaf students such as Gallaudet University or the National Technical Institute for the Deaf (NTID), or smaller programs that have been established throughout the country within local community colleges or four-year institutions. Other deaf students choose to attend regular postsecondary institutions where support services may or may not be available to meet their special needs. The number of deaf students whose choice is to attend regular colleges and universities appears to be larger than expected and may still be underestimated due to the inability to identify all deaf students who are enrolled at these institutes. Another factor that contributes to the uncertainty of the number of deaf students enrolled in regular four-year colleges and universities is the tendency to lump students with different degrees of hearing loss into a single category labeled "hearing-impaired."

The number of deaf students who will be attending regular postsecondary institutes perhaps will increase over the next decade. Several factors are indicative of projected growth: the influence of mainstreaming; the increased frequency of open door policies on the part of regular four-year colleges and universities to admitting handicapped students; the decline in the college age pool of students making institutions more willing to accept students they would not have accepted before; the increase in older students, some who will be deaf, returning to college for retraining or because of career change; and the increasing number of deaf students who are interested in a postsecondary education. Moreover, with the decrease in federal funding for special programs and the office of vocational rehabilitation, there is a possibility that more deaf students will be enrolled in postsecondary institutes near their home or within their home state rather than sent to special programs such as NTID or Gallaudet.

Although there is a large number of deaf students in regular colleges and universities, less was and is known about these students than about deaf students who enroll in the special two and four-year programs. The little that is known is more than 25 years old, and perhaps not applicable to the current situation in postsecondary education. The original purpose of this study was to gather information about salient characteristics of deaf students who enroll in regular four-year colleges and universities, why they choose these colleges over special programs, how they function in these environments, and the adequacy of the support services being provided to them in the regular college setting.

The information that has been obtained through this investigation should help deaf students, their parents, teachers, and high school counselors to better understand what is involved in a deaf high school student's decision to apply for enrollment in a regular four-year institution. This information should also be helpful to service providers and administrators in regular colleges and universities by providing a better understanding of the special needs of deaf students and how these needs can be met through careful planning for, and provision of, needed services.

In addition, during the course of the study, it became obvious that certain background characteristics began to emerge that were common among the deaf students who participated in this research. These characteristics will be described within the contents of this paper and may be useful for identification of deaf students who have potential for high academic achievement.

A Pilot Study

Prior to initiating the present investigation, the researcher conducted a pilot study (Menchel, 1993). The most important fact to come out of this initial research was the finding of the degree of deafness of these students. Prior to undertaking the pilot study, it was assumed that most hearing impaired students who were enrolled in regular four-year postsecondary institutes were either hard of hearing or had a mild hearing loss. It was not foreseen that profoundly deaf students would be found among this population. The fact that all eight participants in the pilot study were profoundly deaf with a hearing loss of 90 dB or greater was an important finding and a major reason to widen the research to a larger group of participants.

Research Questions

This study as originally designed was guided by four questions.

1. Why do some deaf students decide to attend a regular college or university instead of a special program?
2. After a year or more of enrollment in a regular college or university, what reasons do these students give for being satisfied or dissatisfied with their decision?
3. How do they describe their academic and social experiences in college and what, if any, adaptive strategies have they developed in relation to their deafness?
4. How do their descriptions of the quality and adequacy of support services match or differ from the descriptions provided by the service providers in their colleges?

BACKGROUND OF DEAF STUDENT PARTICIPANTS AND A COMPOSITE STUDENT PROFILE

In the following section, the background data of the participating students is presented. It was noticed during the data analysis that similar patterns began to emerge among the participants. It was a striking fact that almost all of the students who participated in this study share all, or most, of the characteristics given here. This pattern led the researcher to classify them as high academic achievers. These characteristics could conceivably be used as predictors of potential academic success; furthermore, they can help counselors, secondary school teachers, and parents to identify and encourage academic development of these deaf students for a postsecondary education.

Vital Information

First, it is important to state vital information about these students and some of the similarities that were found among the participants.

Thirty-three deaf students enrolled at colleges and universities within the New England region participated in this study. All were Caucasian, except one student who was Hispanic, and all were single. Of the 33 students, 16 were in their sophomore year, 4 were in their junior year, and the remaining 13 were in their senior year. Ten of the students were male and 23 were female. The mean age of the students was 22 years (*SD* 3.02) with a range from 19 to 30 years of age. The oldest student in the sample had been out of college for several years before deciding to return full time to obtain an undergraduate degree. Of the 33 sets of parents of these students, 2 sets of parents were deaf.

Hearing Loss, Age at Onset and Description of Loss

Hearing Loss and Age at Onset

The distribution of the students' hearing losses in decibels (dB) as measured in the unaided better ear is as follows: one student had a moderate hearing loss of 70 dB, 5 students had severe hearing losses

between 80 and 89 dB, and 27 had profound hearing losses of 90 dB or greater. Their mean hearing loss was 95 dB (*SD* 9.57) with a range of 70 to 110 dB. This is comparable to the degree of hearing loss that is found in the population at NTID and Gallaudet.

With regard to their ages at onset of deafness, 20 students reported that they were born deaf, 9 became deaf at age 4 or under, 2 became deaf at 18 years of age or older, and 2 reported that their deafness was progressive.

Students' Description of Their Hearing Loss

When the students were asked how they described themselves in terms of their hearing loss, 26 said they identified themselves as "deaf," 6 identified themselves as "hard of hearing," and 1 student used the term "hearing impaired." When questioned about using the term "hard of hearing" or "hearing impaired," one student quite strongly maintained that, even though she had a hearing loss of 90 dB, she was not deaf; instead, she considered herself hearing impaired as illustrated in the following quotation from her interview:

No. I'm not deaf. I do not refer to myself as deaf. I am hearing impaired and I refer to myself as hearing impaired because I am able to hear everybody. I may not get everything 100% of the time, but I wear a hearing aid and if I can be helped by a hearing aid and I can hear you, I'm not deaf. I'm not deaf. I'm not deaf. If I can use a hearing aid, and I can hear people. I do not consider myself deaf. My friends do not consider me deaf. My teachers do not consider me deaf. Alexander Graham Bell Association does not consider me deaf. A lot of people are always surprised to find out that I wear a hearing aid. I think there's a distinction between being deaf and being hearing impaired. A deaf person cannot make a phone call. A deaf person cannot hear a bird.

Although this student is prelingually, profoundly deaf, one needs to respect the identification that individual students prefer. None of the students said they were trying to conceal their deafness; some simply said they did not feel comfortable using the term "deaf" when they saw themselves functioning more as a hard of hearing person than as a profoundly deaf person. Some said also that they identified themselves as either hard of hearing or hearing impaired and, since they did not know or use sign language, they did not see themselves as deaf in the sense of communication.

Oral and Sign Communication

Elementary and High School

Thirty-two of the 33 deaf students indicated they used speech and speechreading as their primary mode of communication throughout elementary and high school. Twenty-nine of the 33 students did not know or use any sign language prior to college. Four of these students reported that they also used a form of signing in elementary and high school, and used sign interpreters in class.

College

It was noted that all of the 33 students were wearing hearing aids during the interview. They indicated a dependence, at least in part, on amplification systems and the use of their hearing aids for

communication inside and outside of the classroom. The fact that all of the students wore hearing aids is surprising. While statistics on the use of hearing aids by students across postsecondary special programs are not available, it is unlikely that the percentage exceeds 50%.

As previously stated, four students entered college with signing skills. Ten others were either learning or using sign language when the investigator met them for the interviews. The reasons these students gave for learning sign language included: (a) it was easier to follow a sign language interpreter in class than try and obtain information totally from speechreading; (b) the student may have developed a relationship with another deaf student who uses sign language; and (c) due to the change in attitudes toward sign language, they felt that there was no longer any stigma attached to using it and were free to express themselves as deaf people using this form of communication.

Socioeconomic Status of Their Families

The students were asked about their family income and parents' education. The results were as follows:

Family Income

The income of the families was distributed as follows: four families had incomes of less than \$50,000, nine families were between \$51,000 and \$70,000, nine families were between \$71,000 and \$110,000, seven families had incomes of between \$111,000 and \$150,000, and three families had incomes greater than \$150,000. One student was unable to furnish information on family income as he/she no longer had family contact. The fact that, of the 33 students' families, 19 had incomes equal to or greater than \$71,000 indicates that there is a tendency for these students to come from upper middle and upper SES families.

Education of the Parents

In general, their parents were very well educated as the following distribution indicates: within eleven families, one or both parents had a doctoral degree; there were eight sets of parents where one or both parents had a master's degree; ten sets of parents consisted of one or both parents having a bachelor's degree; and there were four sets of parents where neither parent had an education beyond high school.

The upper SES of most of these families probably enabled these parents to provide more material advantages for their children than would be found in lower or middle SES families. Of the 33 deaf students, 6 went to private elementary schools and 8 went to private non-sectarian or Catholic high schools. Three of the students attended private schools for the deaf prior to entering a regular mainstreamed public high school.

Pre-College Education

Mainstreaming Experiences

Twenty-eight of the students had been mainstreamed in public or private schools for their entire elementary and secondary education. Three had attended an oral school for the deaf for their elementary education and then were mainstreamed into regular high schools. One student had attended a residential school for the deaf for both elementary and secondary school where signing was used in and outside of the classroom, and one student went to a special program for deaf children in a regular elementary school where an interpreter used sign language in the classroom.

High School GPA Scores

The students' GPA's in high school were well above average. Thirty-one of the students had GPA's of 3.00 or higher, and two students had GPA's between 2.00 and 2.93. Their mean GPA was 3.56 (*SD* 0.357) with a range of 2.43 to 4.00. Twenty-eight of the students reported having taken honor and advanced placement courses in high school, and they were all enrolled in college preparation courses. All of the students were accepted by at least 75% of the colleges to which they applied. Eight of the 33 students used early decision selection to enroll at the college of their choice; these eight students applied to only one college or university without considering any other institutions.

College Entrance Scores (SAT's)

The students had a mean combined mathematics and verbal SAT test score of 1120 (*SD* 232.48) with a range of 700 to 1450. Their mean verbal test score was 551 (*SD* 113.9) with a range of 340 to 710. Their mean mathematics test score was 593 (*SD* 134.5) with a range of 340 to a perfect 800. Considering the fact that the average combined SAT score for the four-year college entering class nationally in 1993 was 903 (Statistical Abstract of the United States, 1994), and also considering the fact that this score has not changed much over the past three years, these students have an average SAT score considerably above the national average.

Use of Interpreting and Notetaking Services

Twenty-nine students said they did not use the service of either an oral or sign language interpreter in either elementary or high school. Of the four students who said they had used a sign language interpreter in both their elementary and secondary school classrooms, three students said they used Signed English interpreting; one student used American Sign Language (ASL) interpreting; and one student used a Cued Speech interpreter for high school.

Seven students said they had used notetakers in high school, while the other 26 students said they either took their own notes or borrowed notes from a friend.

Fondness for Reading

When asked if they enjoyed reading, all of the students reported that they had been reading since they were young and still love to read:

All my life, I always read books. When I was a young kid, when I first started going to school in _____ I had a very hard time. I didn't make very many friends. I was miserable. Kids made fun of me. And I think as a consequence I was lonely so what I did was I read. I still read an awful lot because you can read and you don't need anybody else for that. And the hearing doesn't matter.

Like, last summer, I read a lot. I usually read a lot of books over the summer. I can't even remember what I read. I just I read weird stuff. Like, I'll read novels, I read magazines. I read Business Week, Time, Fortune, Forbes. I mean, I've found that deaf people deaf people who've done well, they one thing they have in common is that they like to read, it's been a great experience.

I read the New York Times every morning. I eat breakfast in the cafeteria. I sit by myself and I read the paper. I read the sports and it's a good experience to understand what's going on in the world--with NAFTA with Mexico, what's going on in Russia, what's going on in Japan. I like to know what's going on out there. And I can't hear, I can't rely on hearing, so I have to read what's going on out there.

Their fondness for reading may be an additional factor in the academic success of these students. This fondness for reading was found across all of the students participating in this study. It has also been noted that deaf students who have better academic performance usually have a reading level above that of the general population of deaf students. Their enjoyment of reading is probably linked to their college grades and to their verbal scores on the SAT, which are much higher than reported elsewhere (Walter, 1969) for deaf students graduating from high school.

Working Experiences During High School

The fact that 30 of the 33 students also said that they worked during the summer and/or after school, some since the start of high school, is an interesting observation. Their work experiences may have contributed to the self confidence expressed by many of these students in their interviews.

Using the data above it was possible to put together a composite student profile of the typical deaf student in this study.

A Composite Student Profile

The student is 22 years old, Caucasian, single, and female. She is a full-time, undergraduate student, living on campus, with a B academic average, and in her junior year. She was born deaf and has a 95 dB hearing loss in her better ear. She has good speech and a good command of English, and regularly wears a hearing aid. She also uses an FM system in the classroom. While her main mode of communication is speech and speechreading, the chances are about even that she uses, or is learning, some sign language. She considers herself "deaf" rather than "hearing impaired" or "hard of hearing." She is comfortable with her deafness and takes pride in what she has achieved. She is highly motivated and had

set goals for a college education early in high school. She doesn't see her enrollment in a regular college as anything out of the ordinary.

She has loved to read since she was a young child and continues to read for pleasure in college as time permits. In high school, she held a full- or part-time job during the summer and continues to work during the summer to help pay some of her college expenses.

Her parents are both hearing. Both are college educated and one of them holds a graduate degree. They are employed in professional occupations and have an income around \$90,000. She has lived in a middle class suburban neighborhood since she was born. She has had considerable parental support and encouragement in whatever undertaking she has attempted, including her enrollment in a regular four-year college.

Her entire elementary and secondary education was in mainstream settings where she had support and encouragement from her teachers. Her grade point average in high school was 3.5 on a four point scale. While in elementary and high school, she used neither an interpreter nor a notetaker; instead, she either took her own notes or borrowed her friends' notes when she was unable to take her own. She had speech therapy throughout elementary school and through her sophomore year of high school when she dropped it. She was enrolled in a college preparatory track and took honors/advanced placement courses. Her Scholastic Aptitude Test (SAT) scores were 551 verbal and 593 mathematics, giving her a total score of 1144. While in high school she had a small group of friends, all hearing, and was active in at least one extracurricular program. She applied to four colleges and was accepted by three, one of them being the college of her first choice. She made her decision to enroll in her present college after visiting the college and feeling comfortable that it would be able to provide the support services she needed. While she does not perceive herself as such, due to her high SAT scores and GPA in high school, she would be classified as an high academic achiever.

Discussion of the Profile

We need to be careful and not assume that this profile fits all deaf students in regular postsecondary institutes. None of the interviewed students precisely fit this profile. For example, 30% of the students who participated in this study were male. Three of the students were graduates of schools for the deaf, and two of the sets of parents were deaf. Not all of the students came from highly educated or upper SES families. Nor did all of them use speech and speechreading as their main mode of communication in high school.

While we must be cautious in generalizing beyond this group of students, the data suggest that education and economic levels of the family, and the use of speech and speechreading, are related to successful mainstreaming at the elementary and secondary levels. This in turn probably contributes to the deaf student's choice of a regular college for his/her undergraduate education.

The histories of hearing loss among the interviewed students appear to be relatively similar to those of deaf students reported elsewhere. Twenty-seven of these students had hearing losses in excess of

90 dB, and their mean hearing loss was 95 dB, well within the profound range. As a comparison, the mean hearing loss of students who entered one major postsecondary program for deaf students in 1994 similarly was 95 dB (Annual Report of the National Technical Institute for the Deaf, 1994). Also, like students in special postsecondary programs, a substantial majority of these students were either congenitally deaf or became deaf prior to entering school.

The Scholastic Aptitude Test (SAT) scores of the students in this study compare favorably with the norms for most hearing students entering college, whose national average in 1993 was a verbal score of 424, and a mathematics score of 478, for a total SAT score of 902 (Statistical Abstract of the United States, 1994). These scores in turn are dramatically above the scores of most deaf students entering special postsecondary programs (Walter, 1969) who reported a mean of 281 verbal score and a mean of 392 for the mathematics score. This resulted in a mean SAT score of 673. This is not to suggest that similarly gifted deaf students do not enroll in four-year colleges which offer special programs for deaf students. Undoubtedly many do, but not in the same concentration as the students interviewed for this study. Nor should it be inferred that all, or even most, deaf students enrolled in other regular four-year colleges and universities exhibited similar academic profiles; however, again, many likely do.

DISCUSSION OF THE RESEARCH FINDINGS

Decision to Attend a Regular College or University

Students expressed three main reasons for enrolling in a regular college or university rather than in a college or university which featured a special postsecondary program.

First, most of these students had become accustomed to being mainstreamed throughout their entire elementary and secondary education and felt comfortable continuing in a "hearing" educational environment. They did not see themselves as belonging in a special program where there would be a large number of deaf students, an environment with which they were not familiar.

No, because I don't sign, and they are primarily signing. I've been brought up in a hearing world. All my friends have been hearing; my family is hearing. And I just feel like I would have felt very out of place and I didn't feel that there was a need for me to when I can function fine in a regular environment.

The reason that I decided to go to _____ rather than another college such as one with specific assistance or a deaf school is because I am much more comfortable in the hearing world.

I actually did consider going to the college for the deaf, but I didn't really seriously consider it as if it would be a realistic possibility for me. Since I was mainstreamed all my life, I wanted to keep on going with a mainstream college.

Second, they felt they would not be academically challenged in a special program, even if their classmates were hearing students. Their high schools prepared them well for postsecondary education, many of them having experienced advanced placement or honors courses, and they felt they would be academically ahead of their deaf peers in a special program and would not find their courses challenging.

The services--they weren't like Gallaudet or RIT--but I felt they were adequate and mainly the big thing was I liked the environment. I liked the school. I picked _____ because it was one of the best schools. I almost felt I had to go there. I did very well on the SATs, I was a National Merit, and did well in classes. It was almost expected of me to go there.

Third, they saw their prospects in graduate education and in their future careers being better if they graduated from a "name" college. The indications were that students interpret "name" in a variety of ways, even within this sample. They were, however, more uniform in picturing special programs as under challenging.

Because if you were a big law firm employer in Los Angeles, would you be more impressed with a degree from _____ College or would you be more impressed with a degree from Gallaudet University? I tend to think at this point, or in the near future, that the guy will be more impressed with the degree from _____, which is the reason why I decided to come to a regular college, as opposed to a college for the deaf.

I knew my social life at NTID would not be like real life. Maybe there would be some connections to the deaf community, but if I went somewhere like _____, then I'd meet like the Prime Minister of Canada's daughter or the President of Nigeria's daughter. Those are the kind of connections. This is real life.

These students' colleges ranged from large state universities to small private colleges, and they were enrolled in a wide array of majors. The reasons that these deaf students gave for selecting their particular college or university were probably similar to those of other students, including financial considerations, an attractive program, far enough away from home but not too far, liking the environment, or having a relative or friend who attended the same college.

There was no indication from most of the students that they selected these particular colleges or universities because they knew there were other deaf students already on campus. More often than not, when there were several deaf students on the campus, they did not know each other or have a particular interest in establishing contact. Each student had his or her own group of friends and, if there were other deaf students within that group, this happened more by chance than by intention.

There were exceptions, however. A small number of deaf students did make contact with other deaf students, either at their own institutions or at other institutions where they were aware of their presence. Some established contact with deaf students on other campuses through the use of the Internet; this was demonstrated by the sharing of Internet addresses with each other. It appears that they developed a network of friends among themselves through the use of E-mail.

Parenthetically, of the 33 students, 31 made no effort to establish contact with the deaf community where their college or university was located. The two exceptions established only limited contact.

For most of these students, their decision to attend a particular postsecondary institution was based in part on whether or not the institution would provide needed support services. These students were aware of the need for support services in college, and some had already become accustomed to their use in high school. For some of the students, it was as simple as having appropriate seating or sharing the notes of a fellow student. For others, there was a need for a wider range of services including the use of interpreters,

FM systems, notetakers and tutoring. Some students found that prospective institutions were not prepared to provide the needed services or did not provide them with satisfactory assurances, leading them to decide not to enroll in a particular college or university based solely on the fact that they would not have the support services they needed.

_____ I rejected because the handicapped program was really terrible there. When I visited _____ and spoke to the people there they said that they could not provide me with the support services I needed. When the swimming coach at _____ heard about this he was furious because he wanted me on the team. He wrote a letter to the president of the university, but I had already decided to come to _____.

It was hard. My mom had to fight. She had to get them to agree to give me the notetakers, stuff like that. Because I was one of the first to go there. I didn't think about those things. I was thinking, '_____ very challenging, a very rigorous environment.' I didn't think about notetakers. Basically I wanted to go to the best, to one of the best schools in the country and learn. But yes, notetakers were important to me.

_____, I didn't want to go there because it's a very small group. I know it's an excellent education. I know it's a good school, but they wouldn't have interpreters.

In a way, in a way, because I knew that the resources here were very good. And I had talked to _____, who is the head of the Learning Assistance Center, where they have the notetakers and Phonic Ear, anything that you need. And I knew the resources were very good and they seemed very helpful and reliable in supporting my hearing loss. So I think it was a factor in a way, because I was looking for a school where they accepted disabilities and they accepted, like, people who had handicaps and needed resources.

Satisfaction With Decision to Attend a Regular College or University

Whether hearing or deaf, a large proportion of college students who withdraw from college do so during, or on completion of, their freshman year (Foster & Walter, 1992; Tinto, 1987). If the research had included interviews with deaf students who had withdrawn from regular four-year colleges and universities, these interviews would probably have disclosed numerous sources of dissatisfaction on the part of deaf students. As indicated in the review of the literature, Foster and Elliot (1986) interviewed deaf students who had transferred from regular two and four-year colleges to a postsecondary institution which included a special program and a large enrollment of deaf students. Complaints of the transferring students included dissatisfaction with teachers, support services, the college environment, and its social life.

I'm really, really glad that I decided to come here. I've made some really good friends. The people at the school are really what determined my decision to come here. The people here are the kind of people that I would want to know. The atmosphere of the school is very friendly. The people seem very receptive to others. And, as far as the programs of the school, I found that whenever I need any kind of assistance, I receive it in any way, shape or form.

However, all of the students participating in this study were returning students. Sixteen were in their sophomore year, four were in their junior year, and the remaining thirteen were in their senior year. When questioned, all of the students indicated they were satisfied with their decision to attend a regular college or university. None of them regretted the decision or wished he or she had attended a special program.

The fact that these students have continued to stay in college supports the belief that they were not only well prepared academically and had the reading ability to handle college work, but also that they had made an adjustment to college life. Nevertheless, numerous students were dissatisfied with some aspects of their support services.

Yes, I think I am very satisfied with my decision. I think I've grown a lot, I've participated more now. I am group coordinator and President of my Amnesty International chapter, I'm very articulate. I work a lot with the faculty and the alumni and the students. I work in groups a lot. I'm very vocal and I get a lot done. Yes, I'm very satisfied now. I've grown a lot and I'm very satisfied now about my performance and how I'm interacting with people.

It was reported elsewhere (Kluwin & Stinson, 1993) that deaf students who have a positive mainstreaming experience in high school are more likely to enroll in a regular college or university than are students who have a negative mainstreaming experience. It would be expected from the literature (Antia, 1984; Foster & Elliot, 1986; Gresham, 1986) that deaf students who had a negative mainstreaming experience as evidenced by feelings of loneliness and isolation, difficulty understanding the teachers, and feelings of being left out of the social activities of their high school, would be those most likely to enroll in a special program.

Yet, in the course of this study, several deaf students had expressed feelings of isolation when talking about their high school years in mainstream settings. These students had the option to attend a special postsecondary program for deaf students where they would have had deaf peers and all the support they needed; yet, they still chose to attend a regular college. These students gave several reasons for not selecting a special program.

First, they perceived that they would have a clean slate in college; i.e., be in a new environment where nobody knew them. They could work on having a more positive experience in college than they had in high school. In other words, they chose to become proactive and integrate themselves into the academic and social activities of their institutions.

I'm a junior now, so I've been here for a little over two years. I've had a very positive experience here. I've had my ups and downs just like everyone else, When I came to college, I felt good about the fact that I had a clean slate. I could start all over and just be myself and, like I talked about high school, people pretty much have a pre-conceived idea of who you are, and especially when you're in a big high school. So I wanted to get over that when I came to college and be able to be myself, to show people who I am. And fortunately I've been able to do that.

So when I got to _____ I decided that I was going to tell people that I was deaf, and people knew who I was. They knew that I was different in some way. And people saw me signing and they said, 'Oh, tell me the sign for this or for that.' A lot of people wanted to learn to sign, so we set up a club, a sign club, and we were all learning to sign at the same time. So it really helped me become more of a leader.

Second, like the other deaf students interviewed, these students were mainstreamed from an early age and thus may have seen themselves as "belonging" in a regular college environment rather than a

special program. *Third*, these students also wanted to obtain a degree from a "name" college or university rather than from a special program for the same reasons stated above.

On a more speculative level, it is also possible that the negative social experiences these students had in high school made them more determined to succeed during their postsecondary education, and better able to detect and avoid the pitfalls associated with their previous mainstreaming.

The findings from this research suggest that deaf students, who enroll and remain in a regular postsecondary institution, are able to make the transition from high school to college much as other students do.

I talked with them at the beginning of a semester. And I'd say I had a notetaker and I might misunderstand something and I might have to ask a question. for the most part, they were very supportive. They understood what I wanted. And they encouraged me. In the beginning, I'm sure they probably thought, 'Okay, he's an average student.' But I felt good and by the end of the year, I was the best student in the class. They never had a deaf student before so it was hard. But later on, they needed to expect more from me than everybody else because I was one of the best students.

Fall of my freshman year went pretty smoothly, it wasn't a very hard transition. I don't know why, but it wasn't. It wasn't that difficult for me.

While many of the students said they did not have a problem in making the transition from high school to college, others needed to develop appropriate coping strategies. For some students, this included learning to accept the fact that, while they might have been outstanding in high school with straight A's, they were now "just another student" and perhaps, even, an average student. By the sophomore year, these students had made the necessary adjustments to college, learned how to study, were using support services that they might not have taken advantage of in their freshman year, and were participating in the life of the college.

Not any more than anyone else, I still feel uncomfortable getting a notetaker. But I have one person in my nursing classes who's wonderful. She takes notes in all of my classes, and she's been my saving grace. And, in terms of getting adjusted, it was just like everyone else, I think.

In my first two years, it was very hard for me to maintain the levels that I was used to in high school. I was so used to making straight A's. Now I was in the middle instead of being at the top and I had a hard time adjusting. I made A's and B's, a mixture. But now that I'm in my third year I'm getting the hang of it and I'm getting back to straight A's. don't be afraid to ask for help. Everyone has the same frustrations, the same problems.

These students appear to have a strong internal locus of control. When they faced insensitive instructors, problems with obtaining support services, and coping generally with the environment as a deaf student in a "hearing" institution, they assumed responsibility for resolving problems. It is possible that deaf students cited in the literature (Foster & Brown 1986; Murphy & Newlon, 1987) as being isolated from their hearing peers and unable to cope in a regular college or university, tend to have an external locus of control which distinguishes them from the students who remain and succeed in regular colleges. However, for now at least, the influence of locus of control among deaf students on successful mainstreaming at the college level remains hypothetical.

The students' satisfaction with their decision to enroll and persist in a regular college or university may be rooted in their ability and willingness to take personal responsibility in developing friendships among their hearing peers, and in resolving problems as they arise throughout their four years of undergraduate studies. If this is so, such traits may well remain of value to them throughout their entire lives.

Experiences and Adaptive Strategies in College

Contrary to the researcher's expectation that some, if not most, deaf students would feel isolated and left out of the social mainstream of college life, these students are enjoying their present college experiences. In view of the literature (Brown & Foster, 1989; DeCaro & Foster, 1992; Farrugia & Austin, 1980; Foster & Elliot, 1986, 1987; Murphy & Newlon, 1987; Saur, Layne & Hurley, 1981; Saur, Layne, Hurley, & Opton, 1986; Walter, Foster & Elliot, 1987), it was surprising to find the degree of participation in extracurricular activities and the range of activities in which these students are involved. Furthermore, while participating in extracurricular activities, these students still managed to keep in good academic standing by maintaining a B average. Their academic success can probably be attributed in part to the fact that they have developed good study habits and were well prepared for postsecondary work. They accepted the responsibility for their academic success or failure. They also recognized the importance of support services to their academic success and did not accept the failure of support services to provide them with what they needed.

I think now I've learned different ways of studying. I've learned how to be more efficient, more productive. And I've learned that there's some classes that you have to study differently some classes you have to do all the readings for, and there are other classes where you don't have to. You can get by without doing all the reading, just picking out the most important things to read that will help you the most. I've learned how to be more efficient, more productive.

I feel like it's improved because I know what to expect from my classes and I know how to organize my school work. When I have a notetaker, I can't study from a notetaker's notes. I have to re-write the notes myself. And that helps it can be a little bit of a hassle.

Last semester I needed to have a tutor for one of my classes because I had no interpreter. but after that, because I couldn't get the interpreter for my section at night, I just decided it would be better to have the one-on-one tutor anyway. And then I saw the tutor that I used from last semester last week and I said 'I'm lost with this other tutor.' It really helps to be one-on-one.

The academic characteristics of these students are extraordinary, relative to standardized achievement norms for deaf students nationally (Allen, 1994). However, the students themselves do not seem to see anything out of the ordinary in their being enrolled and faring so well in a regular four-year postsecondary institution. Perhaps this reflects their mainstreaming in high school; these were reported as normal high school experiences, perceived as substantially similar to what hearing students experienced.

No doubt, aided by their accumulated history of mainstreaming, they have come to accept being mainstreamed with hearing students as a normal part of their lives. They do not identify themselves with deaf people as a community or have the pressing need to interact with other deaf students. They are comfortable with themselves as deaf people in a hearing world. This does not imply that they do not have deaf friends, or avoid contact with other deaf students. It simply means that their deafness is a normal part of themselves, one they have become comfortable with, and, while causing some problems, it is not a major barrier to their obtaining an education in a regular postsecondary institution.

I have a more active life here than in high school. I am on the _____ varsity swimming team, I have a hearing boy friend, I also have deaf friends in the community, I really enjoy my life here. The swim team members have been great and they always are so supportive of me. I never feel left out of things here. I participate in class a lot now, more than I did in high school. Like the other day I was in Expository Writing class and this person was talking about something and I disagreed and he looked at me like, 'What? You challenged me??' and I said, 'Yes, I did.'

They participate in some sort of extracurricular activity in college, and many appear to be more active in college than they were in high school. They do not see their participation in these activities as anything out of the ordinary. For example, one student who has a 93 dB hearing loss and wears two hearing aids plays the violin in a strolling music group. She sees her musical activities just as something she has done since early childhood and not as something special. Another student with an 89 dB hearing loss is on her college downhill ski team, plays on the women's lacrosse team, and is also on the school's track team. Like other deaf students she sees these activities as just something she enjoys as part of her life. Other activities the students were involved in ranged from leadership positions in college organizations, membership on the debating team, writing and editing for their college newspaper, and coaching a swim team for disadvantaged children.

I never really considered myself a leader until I was in college and people started wanting me to be their leader and asking me to be presidents of clubs and looking up to me and looking to me for answers and advice. And that really surprised me, because I grew up, like I said, I grew up with very low self-esteem. And I worked so hard to be as good as everyone else. And all of a sudden people are looking up to me. And that is a very strange experience.

These students have developed strategies which have enabled them to participate fully in these extracurricular activities. Some deaf students just accept the fact that they will not hear something and take it in stride. For example, some deaf students who play football (four in this case) frequently commit offsides, but they know that is just something that is going to happen and it doesn't change the way they play the game.

In developing strategies in academic areas, students seem to regard what they do as a normal part of their lives. If they have a problem with an insensitive instructor, they will resolve the problem themselves. For example, they will confront the instructor in a cooperative manner and try and work out a joint solution to the problem. If this strategy does not work, they will back off and take another course of action such as taking a different class. They recognize that there will always be problems associated with

their deafness no matter what they do. They have learned to accept this as part of their lives and developed strategies to help them with these problems as they arise.

While most observers would view these students as high academic achievers, as stated earlier, these students view themselves as normal college students who are required to meet the requirements of their college like any other students. This sense of normalcy is one of the students' characteristics that was found throughout the interviews. Their responses played down their being special in any way; they said they were just like any other student at their college.

It was also found that some students do not want any attention directed at them that will make them stand out as different. For example, several deaf students indicated they did not use an interpreter in the classroom because they thought this would identify them as being different from their classmates.

Regardless of whether they use interpreters and other support services, the students are not preoccupied with their deafness. In fact, they go about their daily activities like the rest of the students. If one overheard their conversations, more likely than not they would be talking about some social event, their girl or boy friend, a tough course they were taking or plans for the weekend. It would be most unlikely that their conversations would be related to their deafness, deaf culture, or problems they are having as a deaf student in a hearing environment.

Quality and Adequacy of Support Services: Students' and Service Providers' Perspectives

It would be nice if deaf students enrolling in a regular college or university could find all the support services they needed in place and waiting for them. Regrettably, recent laws and regulations notwithstanding, this is far from true.

Several facts regarding support services have come to light from these findings. *First*, deaf students enrolling in regular colleges and universities are often not aware of the differences in the need for services between the high school and college environments. Whereas in high school they may have been in courses with a single required textbook and able to obtain their notes from the blackboard or a friend, they may now be in a lecture hall with 200 or 300 other students and a professor whose lectures do not parallel a particular textbook and who may not use a blackboard. Often they cannot sit next to someone they know from whom they can borrow notes. Furthermore, they probably have not only multiple textbooks, but required readings as well in order to satisfy course requirements. These students enter this environment without really understanding the need for support services, how to obtain them, or how to utilize them to their advantage.

Some students reported their regret at not making use of the support services and technologies that were available to them. Some speculated that they would have done better had they used an oral interpreter but, because they were not accustomed to using one, did not take advantage of the service. Others in their junior or senior year, who had only recently begun to use support services, looked back with regret that they had not taken advantage of these services earlier in their college career.

And in my sophomore year I decided that I would give it a try. And I did and it worked well. And now I use the notetaking service. When I first got here, I wouldn't use the

support services and now I do. The second thing is that when I got here, I had some trouble making friends because people had trouble understanding what I said. I made friends, but it was more difficult. And, especially I had problems meeting women, meeting girls. But, but, you know, as my speech has gotten better, I've had less problem with that, too.

It is obvious that many deaf students entering regular colleges are not adequately equipped with information that would enable them to understand the need for, how to obtain, and how to use support services.

Second, deaf students may enroll in a regular college or university after inquiring about one or more support services, only to find after being assured that these would be provided and beginning classes, that these services were not in place. Administrators may not be aware of the difficulty or the cost of obtaining the needed support services. They may assume that, if a deaf student needs an interpreter, the college can simply call a local interpreting referral service and obtain one on short notice. They may not be aware of a shortage of trained interpreters in their area, or the cost of these services. Administrators may also assume that any hearing student with a satisfactory academic record can provide notes for the deaf student on a voluntary basis. They are not aware that a voluntary notetaker is not always a satisfactory source of notes for a deaf student. Other problems in providing support services may arise because administrators have insufficient information about the special needs of deaf students, or the resources required to meet these needs.

Third, deaf students are often unaware that colleges, unlike high schools, do not have the responsibility to identify the students with disabilities. Deaf students in regular colleges must take the initiative to make their needs known to the appropriate persons. Often, without giving it further thought, students may expect their college to automatically provide interpreters for their classes. When they discover this does not happen, they blame the college for not meeting their needs. For example, they may wait until the day before classes begin to inform a service provider that they need an interpreter and notetaker. Requests often cannot be met on such short notice and the student is left with the feeling that the college is not attempting to meet his or her needs.

On the other hand, some students have also reported that they personally had to obtain an interpreter for their class, or other special services. This has happened either because a service provider did not follow through on a promise to obtain the needed service, or did not know how to obtain it. Taking responsibility for obtaining interpreters puts an unreasonable burden on students who are already under considerable pressure from coursework, and forces the student to assume what should be a staff role.

When I first came here, I think they had a lot to learn because ____ was here and he was trying and trying and trying, but he had a lot of people who were fighting him. And most of the time I got whatever I needed. But he had a lot of trouble getting it.

But I asked if she found interpreters for my two classes. And she was positive. She said, 'Oh, we found one. We're waiting for the other one.' Okay. So, the first day of class, I go to my three-hour graphics arts class. No interpreter. I'm there three hours, nothing. So I go to the Student Life Office and I said, where were my interpreters? 'Oh, no. We can't find an interpreter for that class.' I said, 'Well, you know, are you going to find

one?' 'No, no, no, no.' 'You didn't even call me and tell me!' And it was that night. She said, 'Well-I-I I don't think we're going to find one. Maybe, maybe but she won't be here the first night.' So that night I didn't go to the night class.

The findings also indicated that the students often had to take on the responsibility for finding their own interpreters, or waiting an unreasonable time for the service providers to find an interpreter for their classes:

It's been a pain in the butt. I have to plan my schedule. Then I have to call and inform the Massachusetts Commission for the Deaf and Hard of Hearing (MCDHH) or MRC (Massachusetts Rehabilitation Commission). I don't count on the administration to do that here. MCDHH says I should call MRC, but MRC tells me I should call MCDHH. So I get a different story. So I wind up calling MCDHH and giving them the schedule, but I can't always trust them to get it done either, so I also wind up calling interpreters on an individual basis and I ask them, 'Do you want to interpret for me?' So I've spent a lot of time with that and, like, during the year while I'm studying I'm also doing that at the same time.

I'm the student and I can't make all the phone calls to make the arrangements. It was really their job in some ways, but I did learn more because I did that. I helped arrange some of the services for myself.

Students also reported that instructors were often insensitive to their needs and sometimes did not want to bother to make any special accommodations for the deaf student, or even in some cases made it clear that they did not want a deaf student in their class.

I had a professor last semester who I couldn't hear at all and I asked him to wear a microphone that connects to mine and he wouldn't wear it. So I had to copy notes from a friend of mine who was taking the class all semester. But he (the professor) wouldn't wear a microphone. He wore hearing aids himself, and I was surprised that he wouldn't do that.

Oh, there's a class that I'm taking right now. And the teacher doesn't use the book at all. Everything is from her own notes, and everything on the test has to be in her words and very often I don't exactly understand what her words mean. They refuse to give me their notes. They think it's not fair to the other students. They think the other students would complain that it wasn't fair. That's the reason they've given.

In some cases, this insensitivity on the part of their instructors has caused deaf students to drop classes or rearrange their schedule. Dependent on speechreading for communication with her instructors, one student said:

There have been times when the professor has said, 'I'm not going to look at you.' They've said, 'Please don't come to this class. I don't have time to look at you.' So I said, 'Fine,' and I walked out and got a different class instead. It wasn't worth the trouble of battling with the professor all semester.

On the other hand, as one student said when asked if her instructors were sensitive to her needs: "that's a human condition, so it varies from person to person." This is very true, numerous students reporting that their instructors were sensitive and understanding:

But I think all, I think because I'm at a small, Catholic college, and my classes are very small, all my professors know about my hearing loss and all of them are aware. So they know how important it is for them to look at me and for me to look at them for speechreading. I guess because they're standing near me, it's almost like they serve as an oral interpreter for me, in a way.

Fourth, service providers are trying to do their job under very difficult circumstances. They may be aware of the regulatory requirements for providing support services to deaf students, but the college's ability to comply may be beyond their control. For example, if the college or university is located in a rural area where no interpreters are available, there may be little the service provider can do. Also, even in urban areas, they may be faced with a situation in which the demand exceeds the supply.

Fifth, there can be conflicting views on the part of a student and a service provider on the quality of services being provided. Students who have eventually obtained a needed service may have had to wait indefinitely before something was done. Some students complained that they did not have an interpreter in class for several days, or even weeks, at the beginning of the semester. Some also complained about the skill of an interpreter, indicating it was not adequate to meet the interpreting requirements of the course. For example, some students indicated that their interpreters did not have sufficient knowledge of the subject matter being presented to be able to interpret it intelligibly. Some students reported they had to wait a long period of time before their residence rooms were equipped with needed equipment such as flashing door signals.

Well interpreters, they're skilled yeah, except maybe one of them. Probably need more practice, but I didn't want to say anything because another one would be hard to find.

I did have problems last year, last semester. They couldn't find an interpreter for me. I needed an interpreter for these two classes. And then a week before school started, I called her just to catch up and see if it was all set and she said, 'No.' I said, 'What?? I let you know a month ago that I needed an interpreter for my classes!' 'Well, I'm sorry.' And I'm like, 'What's going on here?' No one could find an interpreter, so I asked a friend of mine who was not an interpreter, but she knows sign. She was not great, but what could I do? I needed someone to help.

On the other hand, service providers for these same students often stated that these students did not inform them of their needs until the last minute, thus making it very difficult to meet these needs until several days or even weeks had passed.

They can't come into this office the day before an event and say, 'I want an interpreter,' and expect to get one. I mean, they need to know that their responsibility in order to make us help them, includes, most importantly, letting us know what their schedules are.

While students may think it was the service providers' responsibility to take care of all their special needs, their service providers might describe these students as being immature and overly dependent, stating that the students wanted the service providers to take on the role of their parents and resolve all of their problems for them.

.... when we have a deaf student who really is reluctant to accept suggestions for support, especially if they're not doing well in classes, if their grades are poor, and they're really

reluctant to be identified as deaf or be different from their peers. That tends to be a problem, but the older the student becomes, the less of a problem. It's especially with freshmen and sophomores. They're worst in that area. Juniors and seniors know by now, 'Okay, this is what I need to get through school. I just have to accept my deafness and work with it to get me through school.'

Some of the students expect me to just take charge of everything, but I don't do that. I figure there has to be a two-way learning experience. They can't expect me to be mom and take them by the hand. I expect them to be assertive in their role here as a student. ... So they really need to figure it out for themselves. I make the suggestion: 'This is what we have. This is what is recommended for you. You decide what you want. If, as you go along, you find out it's not working, let me know, and we'll sit down and together come up with a solution.' They do have a responsibility. I am not going to do it all for them.

Most of them are very cooperative. It's particularly difficult for first-year undergraduates who have just left home. They may have had all their services provided by their families and don't know how to advocate for themselves. And don't know how to take the responsibility for getting their needs met. They start out by treating us as their parents. We try to tell them how they can be more effective by establishing relationships with their faculty members too, so that if things aren't working out well, then they can handle it.

It is evident that there are some conflicting views on both sides regarding the quality and adequacy of support services. In my interviews with a service provider in one large university, I was told that there was no problem in obtaining interpreters. All he/she had to do was to call the agency in the area and a certified interpreter would be provided. Interviewing a student in the same university later in the day, I was told that it was difficult to find interpreters and that some of the student's interpreters were very poor in their skills. In this instance, a student and a service provider were seeing the situation from two different perspectives. However, other students reported being satisfied with the services they were receiving. They had no problems obtaining interpreters and their notetakers were more than satisfactory.

It is clear that circumstances vary from campus to campus. A deaf student has no way of really knowing if a particular college or university that he/she may be considering can provide the support services he/she may need. It is suggested that students interview the service providers and, perhaps, another deaf student before choosing a college. The colleges and universities may say they will provide the necessary support services but this cannot be taken for granted. Some institutions are doing a better job than others; some are limited in what they can provide by budget constraints and by limited resources in their area.

Q: You mean the interpreters don't find another one to cover for them?

A: Who are they going to find? There is no one else. The other interpreters all have students that they're working with, so are they going to leave their students?

It's very difficult in this area. As you know, as you move further north, there are fewer and fewer interpreters, and it becomes difficult sometimes for the scheduling. But, yes, the University provides sign interpreters.

There is a shortage of interpreters in _____ County and because of the lack of a large pool of interpreters, it is difficult to provide interpreters for the students. Right now we

have only one student who needs a sign language interpreter; however, if we had another student enrolled who also needed a sign language interpreter I really don't know where we would find one. We would be stuck, and although we would love to have more deaf students enrolled in the _____ we just cannot find interpreters to support them.

It also became apparent that some service providers are not aware of all the resources that are available to provide services for deaf students. This was made clear in the fact that many service providers had never heard of the real-time speech to text steno/computer services now being used with deaf students in an increasing number of colleges and universities. At the same time, credit must be given to some service providers who are very creative in meeting the needs of deaf students in their institutions. For example, one who bought a used laptop computer and hired a graduate student to sit next to the deaf student; this was a substitute for the more expensive real-time speech to text equipment.

In general, there is cooperation between the service providers and the students. Often the students understand the difficulty the service providers have in obtaining the service they need. Most service providers say they are trying their very best to meet the students' needs and, at the same time, meet their numerous other responsibilities. In the absence of standards of some kind, there is really no clear picture of the quality of services for deaf students in regular colleges and universities. However, it is clear that they can vary from excellent to unacceptable. Deaf students, planning to enroll in a regular college or university, need to carefully investigate the services they can expect, as well as the quality thereof. In turn, the student should inform the service provider of specific needs for services so there can be mutual understanding and cooperation.

RECOMMENDATIONS AND CONCLUSIONS

Recommendations

Implementation

It became clear, from a review of the literature, that there is relatively little published information available about the educational backgrounds and experiences of deaf students enrolled in regular four-year colleges and universities. What information is available is outdated, related to mainstreaming in the context of special programs, or, in many cases, more applicable to students who are hard of hearing rather than deaf. Deaf students, who are in high school and beginning to consider their options for postsecondary education, would benefit from such information. This information would also be useful to these students' parents, counselors and teachers.

It has become obvious from this study that deaf students considering postsecondary education often fail to anticipate important differences between high school and college, and what these differences mean in terms of support services. For example, in high school, students may not need a notetaker because of small classes and the ability to copy notes from the blackboard. In college, however, they may find themselves in a lecture hall with 200 or 300 other students and an instructor who does not use the blackboard but lectures from his/her own notes.

Deaf students also need to know what to ask about the availability of support services, and their responsibilities for effectively utilizing the services. Deaf students and their parents also need to clearly understand their rights and responsibilities, and the rights and responsibilities of their college, under Section 504 and the Americans with Disabilities Act (ADA). Colleges and universities, in turn, need to understand their respective rights and responsibilities under the same two laws; likewise they need to inform prospective deaf students of the special services they are prepared to provide them.

In addition, deaf students and their parents are often unaware that other deaf students, who are enrolled in or have graduated from regular four-year colleges and universities, have already faced similar problems while in these institutions. Many have already developed adaptive strategies for handling these problems. Deaf students who are considering enrollment in regular four-year colleges and universities, along with their parents and their counselors, need to be aware of these students and their strategies. Successful deaf graduates of these postsecondary institutions can be instructive and serve as excellent role models.

This study has also made it obvious that key administrators, faculty, and staff are often not aware of the diversity among deaf students, and the differences in the kinds of support services they may need. Often, if a college has had, or presently has, a deaf student, it is assumed that all deaf students who wish to enroll in that institution will be similar and that a new deaf student will need the same services. Indeed, this may not be so. Service personnel also are often unaware of the resources in their geographical area, and unfamiliar with developing technologies, which could help meet the needs of these students. These personnel should be kept up-to-date through workshops, conferences, reference materials, and other resources.

Perhaps this primary research will provide a foundation for resolving some of the problems of providing support services to deaf students in regular four-year colleges and universities. It should be helpful as a resource in setting standards and improving specific services. For example, service providers and students should have a clear understanding of each other's responsibility in obtaining and providing the needed services.

Future Research

As indicated earlier, caution must be exercised in generalizing to a broader population from 33 deaf students in 18 colleges and universities. Nevertheless, this study did disclose more profoundly deaf students, with prenatal or early onset of deafness, enrolled in regular colleges and universities than I had expected to find. Under the present political and social conditions, it is likely that the number of deaf students attending regular four-year postsecondary institutions will continue to increase.

This study provided information about why some deaf students choose to attend a regular four-year college or university rather than a special program. It also provided insight into the students' characteristics and backgrounds that seem to be associated with their success in a regular four-year postsecondary institution. This study indicated that there were some characteristics of these students which

can be associated with their success in regular postsecondary institutions. Two particular variables observed among many of the students in this study were: (a) strong and consistently high levels of motivation and (b) their acceptance of personal responsibility for success and failure; these suggest an internal locus of control.

A follow-up study would help to determine if one's internal/external locus of control is predictive of, and contributes to, success or failure of deaf students in regular four-year colleges and universities.

Because this study furnished no new information about the characteristics and backgrounds of deaf students who enroll in these colleges and universities and subsequently withdraw without obtaining a degree, further research is needed to distinguish between "successful completers" and their less successful counterparts. The quality and adequacy of support services should also be factored into this research.

A substantially larger study should be undertaken addressing these and other remaining questions and issues. A large stratified random sample of deaf students should be used to select the students for this study. Deaf students who are enrolled in all college levels, not just in the sophomore year or above, should be included. Also, students who withdrew and/or transferred to special programs should be included.

A review of the literature has indicated that there is no accurate estimate of the number of deaf students enrolled full time in regular four-year colleges and universities. The available studies do not distinguish between two-year and four-year institutions, nor do they indicate the degree of hearing loss or age at onset among the students studied. There is a need for a larger study to derive a means of determining an accurate estimate of the number of deaf students who are enrolled full time in regular four-year colleges and universities. Degree of deafness and age at onset should be factored into this research.

Finally, it would be of great interest to conduct a follow up study of the 33 students who were interviewed for this effort, after they have completed their formal education and continued on in their personal lives and careers, to cast light on how their lives have been affected by their decision to attend a regular four-year college or university.

Conclusions

The purpose of this study was to provide background information and answer four questions about deaf students enrolled in regular four-year colleges and universities. It was recognized that a small sample would simply help to lay a foundation for future research. It is believed that this study has accomplished its purpose, and will not only lay a foundation for future research, but stand on its own as a valuable source of information about deaf students enrolled in regular four-year colleges and universities. This study has provided us with insights on a remarkable group of high academic achieving deaf students.

The 33 students interviewed for this study shared many similar characteristics that may be conducive to the success of all deaf students enrolled in regular four-year colleges or universities. Several, including motivation, goal orientation, and internal locus of control, warrant greater attention than has been given in the past. Others such as oral/aural communication, family variables, and prior mainstreaming experiences were predictable.

These students offer three primary reasons for their decision to attend a regular four-year postsecondary institution, rather than a special program. First, they have been mainstreamed all their lives. They feel comfortable in the hearing world and do not see themselves as belonging in a special program with a large group of deaf students. Second, they are very well prepared academically for postsecondary education, and feel they would not be academically challenged in a special program. Third, they feel that a degree from a "name" college or university will provide greater opportunities for graduate studies and future careers than a degree from a college with a special program.

The students' satisfaction with their decision to attend a regular four-year college or university can be attributed to their academic ability to make the transition from high school to college, their emerging friendships with hearing peers, and their development of adaptive strategies. Being content with the quality of, and the ability to utilize the available support services, adds to the students' satisfaction with their decision. Also, they have learned how to handle their own problems and take responsibility for resolving these problems when necessary.

They are motivated to participate in extracurricular activities, and to do well in their academic studies. They are proactive in integrating with their hearing peers and feel they are part of their institution.

The quality and adequacy of support services for these students varies from campus to campus, largely because of the unequal distribution of support personnel, such as interpreters, in different geographical areas. There is also no standard by which to measure the quality or adequacy of the services, and their service providers are often not aware of the resources or technical assistance that is available for deaf students in their area.

Although service providers often come to their position without any preparation, or the background to serve disabled students, they quickly learn on the job. They are often caught in the middle between wanting to provide the needed services, and being limited in doing so by the extent of their resources. It can be concluded that these people do make sincere efforts to meet the students' needs; when difficulties do arise, it is often because of problems beyond their control. Not all of the limitations come from the college or the service providers. The lack of cooperation on the part of some students can also cause problems in providing service.

This study has provided us with a picture of a small and selective group of deaf students who have been successfully mainstreamed in elementary and secondary school, and who continue to be successful in the mainstream of a regular four-year postsecondary environment. These students are very intelligent and mature, and comprise a special group of academically high achieving deaf students. While numerous factors beyond their personal control contribute to their success, the students' own efforts, persistence, and determination to do well may provide the main driving force behind their success.

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Appendix A

Interview Guide for Students

NOTE: This is not a questionnaire, but a guide for the interviewer to use during the interview to ensure uniformity among the interviews and coverage of all areas for each participant.

Interview Protocol

- Set up tape recorder and have all necessary forms ready for students prior to their arrival.
- Welcome students and thank them for giving their time. If possible, meet students in lounge or coffee house prior to interview.
- Introduce self and interpreter.
- Allow the students to read the consent form, if not already having done so. Ask the student if they understand the form, if there are any questions, and if they have read and understood the Principles.
- Ask the students to sign the consent form and fill out the demographic data sheet.

Type of Interview

The interview will be open ended and informal, allowing the participants to describe their experience, background, perspectives, and thoughts without interruption. The role of the interviewer is to listen, ask for clarification where necessary, and check the guide to see that all the necessary information is obtained. Similar topics should be covered in the same order and format, so that coding and pattern recognition can be achieved. Questions will be paraphrased if the students do not understand the question as phrased, but the content will not change.

Introducing Self

It will be important to develop rapport with the students being interviewed for this study. Spradley (1979) defines rapport as:

.... a harmonious relationship between ethnographer and informant. It means that a basic sense of trust has developed that allows for the free flow of information. Both the ethnographer and the informant have positive feelings about the interview, perhaps even enjoy them. However, rapport does not mean deep friendship or profound intimacy between two people. Rapport can exist in the absence of fondness and affection (p. 78).

My own deafness may be useful in developing rapport with deaf students, yet I am aware that my background, experience, views, and opinions may be different from those of the deaf people I am interviewing. In introducing myself, I will explain to the students that I have been profoundly deaf since age six and, like them, attended regular colleges and universities for my undergraduate and graduate studies. I will tell the students that I am not familiar with the present environment, which is perhaps different from when I was an undergraduate, and explain to them that I am not there to collect data about deaf students in regular colleges but to learn from them about their own experiences. This introduction will

be made in an informal setting. I plan to meet the students in the lounge, or some other informal place, prior to the interview and get to know them on an informal basis. During my pilot study (Menchel, 1993) I was able to meet the students for lunch, coffee, or dinner prior to doing the interviews, which helped the students to be comfortable in sharing their experiences with me, and helped me to develop rapport with them.

During an interview, I may restate what was said using the same terms that the student used. This will prompt students to speak in their own everyday language which will help avoid reinterpreting and will later help the transcriber understand what was being said. An example is given here:

Q: When you talked with hearing people they understood you?

A: Not really.

Q: **Not really**, oh, what did you do if they did not really understand you?

A: Repeat.

Q: **Repeat**? You wouldn't write it down?

A: Nope, I would not write it down, I would repeat until they understood.

Q: Oh you **didn't need to write it down**, Okay. You understood them?

A: Yep, if I didn't understand them, I asked them to repeat.

First and Second Research Questions

- Why do some deaf students decide to attend a regular college or university instead of a special program?
- After a year or more of enrollment in a regular college or university, what reasons do these students give for being satisfied or dissatisfied with their decision?

Note: Allow the student to talk without interruption, but ask questions as needed, for clarification and assurance that all aspects of the high school experience are covered.

Main Topics to be Covered

- Scan the demographic data sheet and check to be sure that all information has been provided. Use the demographic data sheet to open the interview by asking the students if they were mainstreamed in both elementary and secondary school.
- Continue by asking the students what year they are in college (i.e., sophomore, junior, or senior) and ask them to reflect on their high school experience.
- During this part of the interview, ask the students to reflect on friends that they had in high school, parental and other support, participation in academic and extracurricular activities, social life, best friends in school, the kind of support services they had, if any, and other related topics that are typical of the high school experience.

Other Aspects to be Covered

- Self-confidence, how developed, over time or always had it.
- Deafness as a motivator, compare with peers, prove self.

- Goal setting, type of personality now and in high school.
- Reading habits, enjoyment of reading.
- Communication experience, feelings about high school, feeling of isolation or inclusion, meaning of success to them, best and worst thing they remember about their high school experience, and other topics.
- Decision to attend a regular college, what was involved in making decision, aware of the special programs such as those offered by Gallaudet, NTID, CSUN, etc.
- Factors in selecting the college they are attending, importance of support services in making decision, experience visiting other colleges and universities, feeling of being welcomed, included, provided with support services, right program.
- Satisfaction or dissatisfaction with decision they have made to attend a regular college.
- Given the opportunity to do it all over again, would they do the same thing or something different.

Summary: Let the students reflect on the whole experience of the transition from secondary school to their present environment, how they feel now, and how they felt in the first year, and what they learned from their experience.

Third Research Question

- How do these students describe their college experience in terms of integrating with hearing peers and in their academic and social participation, and what, if any, adaptive strategies have they developed?

Main Topics to be Covered

- Ask students to describe interaction with peers, participation in academic and extracurricular activities, sports, overall satisfaction, friends made, how made, social life.
- Ask students to share their experience in postsecondary institutions to date, and how they felt on arriving the first year.
- Ask what they learned from the first year that has been helpful in later years, and what would they do differently looking back on it now.
- Ask about developing strategies, length of time it took to develop strategies, developed by self or with help from others, use of service providers to develop?
- Ask how students feel about their participation in informal give-and-take in classroom, participation in extracurricular activities, boy/girl-friends, social life, participation in sports.

Other Aspects to be Covered

- Progress now and in first year.
- Perceptions of inclusion or isolation, participation or non-participation, friendship or loneliness, acceptance or rejection.

- Sensitivity of professors, peers, and administrators.
- Feelings of optimism or pessimism, reason for feelings.
- Persistence vs. stubbornness.
- Impressions of success, failure, happiness.

Summary: Let the students reflect on their overall experience at this time in their academic career, and on how things are going from their own perspective; describe the enjoyment and frustrations they have had with peers, professors, administrators, and their academic studies; articulate kinds of feelings they have had and the goals they seek after undergraduate studies; list strategies they developed to succeed in this environment. Clarification of some answers from the first research question and additional detail may be asked here as well.

Fourth Research Question

- How do their descriptions of the quality and adequacy of support services differ from the descriptions provided by the service providers in their college?

Main Topics to be Covered

- What is the student's perspective of the quantity and adequacy of his/her support services?
- What are the student's feelings of satisfaction or dissatisfaction regarding the support services?
- How did the students learn about the support services and how do they obtain services they need?
- What services do the students use and who is responsible for obtaining services?
- How do the students compare the services they are receiving with what they had, if any, in high school?
- What is the student's perspective of the sensitivity of instructors, administrators, and the institution regarding providing and using support services?
- If they had the opportunity, how would they improve the services?
- What is their perspective of the perfect setting at a regular college for a deaf student?

Summary: Participants should describe how they feel about the support services they have been receiving and any problems they have had; discuss strategies they used to overcome any problems that they may have encountered in obtaining or using services; give an over all view of the support services provided, or not provided, by their institution.

Appendix B

Interview Guide for Service Providers

NOTE: This is not a questionnaire, but a guide for the interviewer to use during the interview so there will be uniformity among all of the interviews and coverage of all areas for each participant.

Interviewing Protocol

- Introduce self and interpreter.
- Thank subjects for time they are giving me.
- Ask for permission to set up tape recorder and plug in.
- Create a comfortable informal setting.

Type of Interview

While it will be on a professional level, the interview should be informal and open ended allowing the participant to describe his/her experience in providing services to deaf students. At the same time, the interview should be such that the service providers will be able to comfortably, openly and honestly describe their ability to provide these services. The role of the interviewer is to listen and ask for clarification where necessary, and to check that all the necessary information is obtained. In order to obtain the data needed for coding, and to achieve some type of pattern recognition, each interview should cover similar topics in the same order and format.

Introducing Self

I will introduce myself and explain my background. I will explain I am profoundly deaf and that although I can speech-read, I may not always be able to understand them; therefore, I will use an interpreter to facilitate the interview process. I will tell them that I have attended regular colleges over a span of 30 years or more, and have experienced the changes that have taken place over the years. At the same time, I will tell them that I am unaware of the situation at their institution and want to learn from them how they provide services to deaf students and how they perceive the reception of the students to the services.

First Objective

Obtain data about the service provider's background, how he/she came to their present responsibility, and how long he/she has been in their current position. This data will provide information about their backgrounds and perspectives as service providers.

Education and Previous Work Experience

- Provider's degree and major, work experience prior to entering service provider position, reason for taking position, years as service provider.
- Presence of deaf or disabled people in family, or as friends outside of students.
- First experience with a deaf student.
- Present experience with deaf students.
- Enjoyment /disappointments with job.
- Personal satisfaction and rewards with job.

Second Objective

Identify the number and type of students that the service provider has to serve. Identify different types of students with disabilities that are at the institution and the type of services that have to be provided. Focus on services available for deaf students and the different types of services these students request. This will give an overview of the variety of services required and requested, and how these services are provided.

Overview of Office of Service Providers

- Number of students with disabilities the office serves, size of staff, training staff receives or special background required for position, different disabilities office serves, largest group of students with disabilities, institution's special equipment available to students with disabilities.
- Length of time office for disabled students has existed, reason for location of office.
- Degree of support from administrators.
- Expense and difficulty of providing service for small number of disabled students vs. a large number.

Focus on Deaf Students

- Number of deaf students served by office, method of contacting and identifying students with disabilities.
- Deaf students who do not require or want any service, not "identifying" themselves as "deaf."
- Kind of interpreters needed, ASL, Signed English (SEE), Cued Speech, Oral, other. Interpreters trained in Educational Interpreting or having certificate from Registry of Interpreters for the Deaf?
- Sign language usage by staff, Telephone Typewriter (TTY) in office, training for use of TTY, special services for deaf students, difficulty or ease of obtaining interpreters, types of interpreters used, presence of full-time interpreters on staff, ways deaf students use this office, normal process for requesting service, difference in processes for academic service and extracurricular activities.

Third Objective

Identify problems that the service providers might have providing services to deaf students. Identify the responsibilities of the students and the service providers. Determine difficulties, if any, and student cooperation with the office of service providers.

- Kinds of cooperation and difficulties the office has with deaf students, why cooperation or difficulties exist, special problems that might arise occasionally, repeated problems from year to year.
- Students' appreciation of support services, special consideration and cooperation between students and service providers.
- Variety of deaf students within the college student body, most difficult and easiest areas to provide services to deaf students.
- Support and sensitivity from administrators, instructors, or others in providing services for the deaf students.
- Strategies used by the office when interpreters cannot be provided, other services such as notetakers, copying, tutoring, and transcribing services for the deaf students, voluntary or paid.
- Funding from the state or federal government to support these students (i.e. VESID), whether all funding is provided by the institution, whether funding is a general budget item or a line item.

Other Areas of Responsibility of Service Providers

- Assistive devices in student housing, captioned films in classroom, assistive devices on campus, amplification devices in classrooms, cooperation with building administration for incorporation of signal lights, etc.
- Mediation between deaf students and others if necessary, provide counseling service, placement service.
- Other areas of responsibility the office has beyond providing support services for students.

Demographic Data

Personal Data -- Self and Family

1. Name _____

Permanent Address

Address _____ City _____

State _____ Zip _____ Phone Number _____ Voice ___ TTY ___ Both ___

School Address

Address _____ City _____

State _____ Zip _____ Phone Number _____ Voice ___ TTY ___ Both ___

E-Mail Address _____

Sophomore _____ Junior _____ Senior _____

2. Place of Birth _____ Date of Birth _____

3. When did you lose your hearing? (a) Born deaf ___ (b) Lost hearing at _____ (age)

4. What is your hearing loss? _____ dB, or how you would characterize your hearing loss?
(mild, severe, profound, etc.) _____

5. Do you consider yourself deaf, hard-of-hearing, or hearing-impaired?

Deaf ___ Hard-of-hearing ___ Hearing-impaired ___

6. Are your parents deaf or hearing?

Mother: ___ Deaf ___ Hearing _____ Father: ___ Deaf ___ Hearing _____

7. Mother's occupation _____ Father's occupation _____

8. Did your parents go to college?

Mother ___ (Y/N) Father ___ (Y/N)

If your mother or father went to college what was the highest degree they earned?

Highest degree: Mother _____ Highest degree: Father _____

9. What is the estimated range of your family's income (combined income of Mother and Father)?

- < \$50,000 _____
- Between \$50,000 and \$70,000 _____
- \$71,000 and \$90,000 _____
- \$91,000 and \$110,000 _____
- \$111,000 and \$120,000 _____
- \$121,000 and \$130,000 _____
- \$131,000 and \$140,000 _____
- \$141,000 and \$150,000 _____
- > \$150,000 _____

Past Education Information

10. Where did you go to elementary school? _____

