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Mediated Communication in the Postsecondary Education of Deaf Students

By Jerome D. Schein, Ph.D. and Diane J. Simon, Ph.D.

Abstract

As increasing numbers of students with impaired hearing seek postsecondary education, the naivete of many receiving institutions about these students' needs assumes greater importance. Students report and staff confirm that representative facilities often fail to distinguish between deaf and hard of hearing students. Such confusion leads to inappropriate accommodations, when any are made. The authors suggest antidotes for the neglect and confusion, and offer ideas for alterations in educational administration, for preparing and deploying interpreters, and for research.

Few postsecondary institutions enroll deaf students in any given year (Karchmer & Rawlings, 1991; Schein, 1986). Recent federal legislation, however, requires postsecondary programs to accept academically qualified deaf students and to make reasonable accommodations for them, as well as for students with other disabilities. Because by definition a deaf student cannot hear and understand speech through the ear alone, even with best amplification, reasonable accommodation presently calls for *mediated communication*.¹ The implications of that latter requirement occupy the remainder of this paper.

A major obstacle to meeting the requirements for communication assistance is many postsecondary educators' lack of knowledge about hearing impairments. Too often they think that providing

interpreters for deaf students solves their problems: "During the early years, it was often assumed that accessibility to postsecondary education for hearing impaired students simply consisted of an interpreter in the classroom" (Woodrick, 1991, p. 7). Worse, recent surveys have uncovered the confusion that exists in some postsecondary programs that seem to believe that *deaf* and *hearing impaired* are synonymous terms (Schein & Mallory, 1990; Schein, 1990). The sad results of that misunderstanding affect far more students than the equally sad misconceptions about mediated communication for deaf students.

Deaf, Hard of Hearing, and Hearing Impairment

In a recent survey of all postsecondary programs in the province of Alberta, 15 of 57 postsecondary institutions claimed to be serving students with impaired hearing during the 1989-90 school year (Schein, 1990). On further inquiry, the majority of the programs offer all their "hearing impaired" students interpreting services! Hard of hearing students, who make up the majority of the students with impaired hearing, seldom receive support from assistive listening device systems (ALDS). Only 4 of the 15 institutions had any such devices, and none provided them for all classes attended by hard of hearing students (Schein & Mallory, 1990).

Hearing impaired to many administrators implies a homogeneity

of need among students so labeled. Administrators sometimes use of *hearing impaired* or *hard of hearing* to avoid saying *deaf*, because they consider the latter to be pejorative. Similarly, using *deaf* to include all degrees of impaired hearing shortchanges students with mild to moderate hearing impairments who do not know sign language but who need ALDS support. Precise terminology is important to provision of communication services, and everyone concerned with postsecondary education should insist on differentiation of terms that accord with the realities of need rather than linguistic rectitude. As has been noted earlier:

Because the single appellation hearing impaired encompasses all of them does not mean that students with impaired hearing are homogeneous. To the contrary, they differ widely among themselves in ways of importance to educators. Most critically, they vary in the kinds of assistance that will best serve their particular configurations of hearing abilities, courses of study, and personalities. (Schein, 1991, p. 156).

Mediated Communication Approaches

Mediation becomes essential when communication cannot be directly received, which is the case for most deaf students. The National Technical Institute for the Deaf, in Rochester, NY, and Gallaudet University, in Washington,

DC, have instructors who sign. Seattle Community College, Johnson Community College (Kansas City), St. Paul (Minnesota) Technical College, and California State University at Northridge also have instructors in some courses who can sign. However, for the majority of postsecondary institutions, instructors do not sign.

Communication can be mediated in several ways; as examples, by amplification, automatic speech-to-text, typed projection of printed text, and oral and sign-language interpreters. Mediation sufficient for students with mild to moderate losses seldom is sufficient for those with severe to profound losses and vice versa.

Automatic voice-to-print (AVP),² though technically feasible, is not yet suited for classroom applications. Current models are limited because (a) they take much time to each user's pronunciations, (b) they cannot manage multiple inputs, such as occur in a seminar or class discussion, and (c) in classes with both deaf and hard of hearing students, arrangement would still have to be made to voice for students who do not speak.

Manual speech-to-text systems (MSTS) consist of a typed or handwritten version of speech that is projected onto a screen as the speaker talks. In one version of MSTS, stenotypists ("court reporters") attach their machines to computers that are programmed to translate their shorthand into fully spelled-out words. Stenotypists can handle speech at a rate of 250 words per minute, a rate adequate for keeping pace with most lecturers. Alternatively, a typist's output can be directed into a computer that, in turn, drives a projector that flashes the words onto a screen. A third possibility, though not giving full coverage to what is spoken, consists

of someone who writes on transparent film continuously fed onto an overhead projector. Since handwriting is relatively slow, the output is usually abbreviated and may present problems of legibility. All three versions have the virtue of potentially providing a record deaf students can review after class, eliminating the need for a notetaker.

Interpreters. Human mediation is provided by interpreters. Oral interpreters repeat (mouth) what the lecturer says, while substituting for, or adding to, words and phrases that confuse persons dependent on lipreading. The oral interpreter receives English and repeats English, serving as "a visual amplifier."³ Manual interpreters encode speech into any of a number of English-like manual codes. *Sign-language interpreters (SLI)* convert English into American Sign Language (ASL) and reverse the process when students who sign but do not speak express themselves.⁴

Complexities in Sign-Language Interpreting

The mediation process differs when translating from one language (English) to another language (ASL) or from spoken English (auditory-vocal) to Signed English (visual-manual). The former is a far more complex assignment for an interpreter than is the latter.⁵

Every spoken word can be represented by signs and fingerspelling and transmitted in English word order. Such interpretation is referred to as Signed or Manual English.⁶ However, born-deaf and early deafened students usually prefer that English be translated into American Sign Language (ASL), their "native language." ASL is not "English on the hands;" it is a distinct language in its own right, with a syntax different

from English and a cultural context that also differs from English (Stokoe, Casterline & Cronberg, 1965). For many deaf students, ASL is their "thinking language," and, in a typical rapidly unfolding lecture, they find it easier to follow than English.

The mediators in the English-English situations have only to acquire manual skills - typing, writing, or signing. SLI who interpret in ASL, however, must command two languages. Acquiring ASL competency requires intensive study and extensive practice before one can satisfactorily use it in simultaneous interpretation.

Even when ASL competency is achieved, SLI's problems persist. They are compounded by technical-professional vocabularies embedded in contexts unfamiliar to the SLI. Consider, for example, an SLI competent in ASL and English signing a pathology lecture of which the following is a sample:

During the secondary stage as well as in recurrent syphilis large flat papillomatous lesions (venereal warts) may appear, especially on the genitals and perineum. On dry surfaces these are called condyomas; on moist surfaces, such as between the labia and in the axillae, they are often called moist papules.

Or a calculus lecture that contains sentences like:

Osborne's rule states that, in any formula connecting circular functions of general angles, the corresponding formula connecting hyperbolic functions can be obtained by replacing each circular function by the corresponding hyperbolic function, if the sign of every product or implied product of two sines is changed.

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The setting and the circumstances can also contribute to misinterpretation. One deaf student cited numerous instances of miscommunication in her doctoral studies:

Miscommunication can and does occur between deaf and hearing people when using sign language interpreters in university classrooms. . . . These instances of confusion occurred with the greatest frequency when interpreters were unfamiliar with the subject they were interpreting and/or were required to interpret diagrams or verbal descriptions. The data [from videotaped classes] showed that the deaf students experienced difficulty looking at the board and at the interpreter simultaneously. (Johnson, 1991, p. 1)

Further complicating the problems of serving deaf students are SLIs' personalities. Researchers have

found wide variation in SLI personalities (Rudser & Strong, 1986; Schein, 1974). In addition to linguistic skills and subject-matter understanding, SLIs' personalities also are important factors in determining the deaf students' satisfaction with them. One research team concludes that "the interpreter provided must have the skills and *personal attributes* to meet the needs of hearing-impaired students" (Rittenhouse, Rahn & Morreau, 1989, page 61, italics added).

Attitudes of Deaf Students, Teachers, and Interpreters

Participants in mediated communication do not agree on the desirable characteristics of the mediators. Rittenhouse et al. (1989) asked 18 college-aged deaf persons, 24 teachers certified to work with deaf students, and 27 interpreters to rate a list of interpreter qualities. Table 1 presents a revised version of the results of that survey.⁷

The Kendall coefficient of concordance (W) for these data is 0.44, which is far below a value indicating significant relations among the three sets of rankings, confirming what a rapid glance over the ranking suggests that the three sets of judges do not agree on SLI characteristics critical to interpreting. This result poses as many questions as it answers. First of all, one wonders if the raters attached the same meaning to the items they ranked. For example, deaf raters ranked Lipreading Ability sixth, whereas the teachers and interpreters ranked it 18th, the lowest ranking. It is possible that the deaf raters construed the term to refer to how easily an SLI's lips could be read, whereas the other two groups of judges were ranking the SLIs' ability to read lips. The particular group of deaf raters seemed far less impressed with organizational affiliations than the teachers and interpreters; the former ranked RID Certification and Professional Members first and

Table 1
Rankings of Sign-Language Interpreter Qualities,
by Deaf Persons, Teachers, and Interpreters

Quality	Deaf Persons	Teachers	Interpreters
RID Certification	1.0	15.0	13.5
Clarity of Signs and Fingerspelling	2.0	2.5	1.0
Professional Memberships	3.0	17.0	17.0
College preparation for interpreting	4.0	16.0	16.0
Confidentiality	5.0	1.0	2.0
Lipreading Ability	6.0	18.0	18.0
Attitudes toward Deafness	7.0	2.5	3.0
Ability to Interpret in Deaf Students' Preferred Mode of Communication	8.0	8.0	6.0
Interpreting Experience	9.5	10.0	9.0
Familiarity with Professional Literature on Interpreting	9.5	14.0	15.0
Adaptation to Different Levels of Language Proficiency	11.0	6.0	5.0
Assessment of Deaf Student's Preferred Mode of Communication	12.0	9.0	7.5
Interpreter-Client Rapport	13.0	4.0	7.5
Knowledge of Regional Variations in Sign Language	14.0	11.0	13.5
Contact with Deaf Individuals After Interpreting Assignments	15.0	12.0	11.0
Impartiality	16.0	5.0	4.0
Knowledge of Regular Classroom Procedures	17.0	7.0	12.0
Manner of Dress	18.0	13.0	10.0

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third, respectively, whereas the latter groups of judges ranked both near the bottom. Raters also disagreed markedly about Impartiality; deaf raters ranked it 16th, whereas teachers ranked it 5th and interpreters 4th. The three groups agreed fairly closely about Clarity of Signs and Fingerspelling, Interpreting Experience, and Ability to Interpret in Deaf Students' Preferred Mode of Communication.

This overall lack of agreement about the importance of SLI's characteristics may reflect nothing more than a combination of (a) misunderstandings about terminology, as discussed above, and (b) the newness of SLI in postsecondary education. After all, hardly two decades have passed since interpreting for deaf students shifted from a favor to a profession (Interpreting, 1987; Schein, 1972). However, if additional surveys confirm the lack of concordance in the views among representatives of the three groups who regularly participate in mediated communication, then major impediments to developing and refining the mediation process have been uncovered.

Strenuous efforts are underway to obtain recognition for SLI certification in Canada and the United States. Deaf people, as represented by this one small sample, appear vigorously in support of the move, whereas educators and interpreters appear, at best, lukewarm. Such a division among principal stakeholders could spell defeat for certification efforts in many jurisdictions. The similar lack of agreement about college preparation for SLI - deaf people much in favor and educators and interpreters ranking it near the bottom of desirable qualities - might create difficulties for interpreter-training programs that already are feeling budgetary pinches. Instead of arguing for their expansion, in order to increase the supply and improve

the quality of SLI, the results of the Rittenhouse et al. survey show a lack of enthusiasm among those one would expect to be most supportive of advanced education for SLI. Obviously, further probes of stakeholders' attitudes should be pursued. In doing so, exclusive reliance on printed questionnaires will not provide the kind of information that is needed; personal interviews should supplement the mail surveys.

Follow-up interviews did illuminate a survey of Canadian SLI. In the national study (Schein & Yarwood, 1990) a somewhat surprising finding was that 60 of 140 SLI said they had doubts about their fellow SLIs' ethics. Because 26 respondents chose to express no opinion, only a minority (54) regarded their colleagues as behaving ethically - an initially shocking fact. In the interviews with a sample of SLI, however, what respondents regarded as unethical was accepting assignments that called for skills beyond those an SLI had (Schein, Greaves, & Wolf-Schein, 1990). This purported failing applied especially to interpreting for courses in subject-matter fields for which the SLI had no preparation. Only a few of the personal interviews uncovered any fears that SLI were violating such ethical provisions as maintaining confidentiality or engaging in dubious financial dealings. The additional information from the interviews explicated the survey data, avoiding misinterpretations that might have arisen from the questionnaire responses alone.

In another study, data from deaf students, their parents, educational administrators, teachers, and SLI at the elementary and secondary levels yielded additional evidence of discordance in the views of interpreting services by principal stakeholders (Schein, 1992). Administrators regarded their efforts to provide interpreting services with considerable satisfaction. Deaf

students and their parents, to the contrary, found these services inadequate, suffering from a shortage of personnel and from substandard use of ASL. Teachers, many of whom had no preparation in Special Education, felt uncomfortable about the mediated communication in their classes, because their lack of knowledge of signing prevented their supervising it. Uncertified SLI frankly expressed their concern about their lack of formal preparation for interpreting, and most expressed a desire for opportunities to upgrade their communication skills.

It is possible that opinions about interpreting change radically from secondary to postsecondary settings. More likely is that larger samples will show the attitudinal schism between educational administrators, interpreters, and students is as wide as the above studies indicate.

Yet another view of SLI competencies comes from personnel of interpreter-preparation programs. Asked about the competencies they regarded as most important for their students to acquire, they rated maintenance of confidentiality and understanding of the roles and function of interpreters most highly (Anderson & Stauffer, 1991-92). Interpreting accurately both the content and feelings of the speaker was rated third; smooth signing and fingerspelling, fourth; appropriate sign selection, fifth. The fourth-ranked characteristic was either first or second in the ratings reported by Rittenhouse et al. Confidentiality, rated most highly by the interpreter-preparation personnel, was ranked in Rittenhouse first by the teachers, second by the interpreters, but only fifth by the deaf respondents.

Because of their independent interests, stakeholders tend to weight differently the factors that lead to satisfaction with interpreting. Each group wants mediated communication to be successful, but

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what constitutes 'success' varies among those who judge it. For that reason, it seems imperative that programs using SLI as well as those preparing them to interpret have input from all of the interested groups, in order to balance the conflicting views held by the parties most frequently involved in the process.

Reverse Interpreting

Deaf students are not - should not be - potted palms; they should participate in their classes, even if they lack intelligible speech. In such cases, SLI must read their signs and correctly voice what they say. That this is difficult is indisputable; that it is not always done well increasingly becomes evident. Hurwitz (1980) has documented the difficulties of voicing ASL in his doctoral dissertation. Rosen (1992) makes the same point:

Although I have a doctoral degree, years of educational experience and top-notch bilingual skills, I am practically reduced to a babbling idiot, fingerspelling at a snail's pace and signing on a pre-school level in order to be understood by the interpreter. One such interpreter, at the end of my presentation, apologized to me, saying that although he interpreted full-time in a high school, his receptive skills were practically nil, since the deaf students were mostly passive. However, many of us have already heard the sad tales of woe by deaf mainstreamed students, who admit to becoming passive and withdrawn, rather than to face misunderstandings and humiliation by inept interpreters. (p. 3)

Voicing ASL is the reverse of the interpreting coin. It should be recalled that deaf students usually can

only know how inaccurately their signing has been represented when they observe their auditors' reactions. Less well-educated students than the two bedoctored deaf persons cited above probably have the same experiences but do not have their ability to detect them. The point to be made here is that communication is - and must be - a two-way process. If deaf students have difficulty getting accurate accounts of what is being said, they must confront the possibility that what they sign is voiced inaccurately. How these inaccuracies impede their educational progress has not, as yet, been adequately investigated and documented.

Supply and Demand

SLI who meet the criteria of language competence and subject-matter expertise are scarce. The shortages of such virtuosos restrict deaf students' abilities to profit from the full range of postsecondary opportunities. A report from the Canadian Secretary of State concluded, "The deaf are education poor precisely because there are few sign interpreters in Canada." (*Obstacles*, 1981, p. 105, cited in Rodda & Hiron, 1989). Lack of qualified SLI occurs as well in the United States (Rittenhouse et al., 1989). Indeed, the imbalance between supplies of, and demands for, SLI appears to be a universal phenomenon (Bartlett, 1991; Power, 1991; Quesada & Chavarría, 1991; Weisel & Reichstein, 1991).

Interpreter Preparation

The increasing demand for SLI and the lack of training facilities led to establishment of the National Interpreter Training Consortium (NITC), in 1974, in the United States. In that year, only seven postsecondary institutions provided any training for potential SLI (Schein & Stewart, 1995). In 1980, Congress

enacted legislation continuing the NITC concept by authorizing regional preparation programs; funding for them under P. L. 95-602 is now at an annual level of nearly one million dollars. From the earlier seven institutions, Anderson and Stauffer (1991-92) found interpreter training at a certificate or degree level has swelled to 61 postsecondary facilities in the U.S. In Canada, eight institutions presently offer preparation for SLI (Schein, Mallory, & Carver, 1990).

Despite the number of preparation programs, the shortage of interpreters persists. In part, the shortage stems from inefficient distribution of resources (see *Budgetary Considerations* below). The arduous nature of the task and the relatively small rewards - at least in terms of the wages and salaries paid to SLI in educational settings - have also been cited as reasons for the high turnover among them (Schein & Yarwood, 1990). In addition, many SLI find that their position is a natural steppingstone to more prestigious, higher paying positions, such as counselors and administrators.

From their survey of U.S. interpreter-preparation programs, Anderson and Stauffer (1991-92) concluded, "There appear to be a good deal of commonality rather than diversity among programs with respect to the types of curricula available to trainees enrolled in pre-service academic programs." They found all of the programs responding to their questionnaire offered History of Interpreting, Community/Culture of Deaf People, Professional Ethics and Consumer Issues, and Skills Development-Methods. Three-fourths of the programs had the following courses: ASL Grammar and Vocabulary, Skills Development to Manage Specialized Settings and Special Populations, Community Resources, Supervised Practicum, Nonverbal Communication, and Cross-Cultural

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Issues. The same course title, however, may not cover the same curricular content. So though there is an appearance of uniformity of breadth in training, its actual depth (extent) remains open to question.

The contrasting views of the importance of various factors in interpreting found among deaf persons, teachers, administrators, and SLI make the agreement among personnel in interpreter preparation somewhat surprising. With so many programs open to potential SLI, one might also wonder if their uniformity is healthy at this stage in their development. Has enough been learned in the scant two decades since interpreting has become generally available to justify such homogeneity? Should we be satisfied with the little systemic study so far given to potentially critical elements of the process and its applications? Would the profession and deaf students profit more from broader questioning of the enterprise, leading to more extensive research into mediated communication?

Budgetary Considerations

Educational administrators often regard providing SLI as expensive. Viewed on a per-capita basis, the cost of interpreting may appear to be outrageous when the postsecondary program has only one or two deaf students. The per-student cost of interpreting services declines in inverse proportion to the number of students being served by an interpreter. One SLI can communicate with as many deaf students as can see him or her. If the postsecondary program provides SLI for only one student the cost will be twice as great as providing for two students in the same class, three times as great as providing for three students, and so on. The sole deaf college student taking courses meeting 15 hours each week will run up a sizable bill over eight semesters before graduation.

One response to such a complaint is that, if the school attracted more deaf students who shared the same curriculum, its unit costs would be proportionally reduced. (The argument only holds if the deaf students attend the same classes. If not, each additional deaf student adds even more to the expense of interpreting, because each would require a separate interpreter.) There are, however, more compelling reasons for wanting to recruit large numbers of deaf students to a program.

Inter-Student Communication

Postsecondary education involves more than formal classes. Students learn as much, if not more, from each other than from their instructors. What they learn involves developing social skills and making friendships that will serve them in good stead over their working lives. As deaf students frequently find, being the only deaf student poses difficult, if not insuperable, barriers to socializing with other students. Loneliness, more than educational shortcomings, can lead to dropping out from postsecondary programs. Faced by limited communication, lone deaf students not only miss the informal exchanges of information that are important to their education, but also the social contacts that motivate them to remain in the program. As noted by one research team, "the dropout problem is exacerbated if the students are also minority, poor, or urban" (Simon, Reed, & Clark, 1990). Unless other students can communicate effectively with the deaf student, that student becomes a social isolate.

No one has seriously suggested that, in such circumstances, the educational institution provide interpreting during *all* extracurricular activities. Even if it were economically feasible, the constant intrusion of a third party in social

interactions would likely cause them to be stilted, if not to dry up altogether. A reasonable solution appears to be concentrating deaf students in a few institutions within a state or province, rather than scattering them throughout the region's educational postsecondary programs. The small loss of choice can be compensated by the better education that results from the increased numbers of deaf students in each location (Copeland & Florsheim, 1991; Serwatka & Hansford, 1991).

Suggestions for Research and Development of Mediated Communication

Given the short time that mediated communication for deaf students has been widely available - both in terms of financial support and of qualified personnel - its present status should not be accepted as fixed and immutable. Indeed, it would appear there is ample room for improvement or, at least, for attempts at improvement. The following suggestions will, it is hoped, serve both as a summary of the preceding discussions and a spur to further investigations of avenues of enhanced opportunities for deaf and hard of hearing students.

First of all, the necessity for differentiating programs by the communication needs of the students seems overly obvious. Nonetheless, to assure that such differentiation comes to pass, we urge frequent surveys of postsecondary programs to assure that, indeed, communication services are matched to the problems students with different degrees and onsets of impaired hearing have. As discussed above, some postsecondary program administrators have provided either for deaf students or hard of hearing students but not both. Because what is useful to deaf students seldom adequately serves those who are hard of hearing and vice versa,

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administrators who enroll students with both degrees of hearing impairment should be sure that the services provided are appropriately matched to the students. The remainder of these suggestions concern the deaf student - those whose impaired hearing denies them the full benefits of amplification and whose early onset of deafness leads them to be visually dependent.⁸

Consideration should be given to optimizing the use of the valuable resource represented by those SLI now in the field and the those preparing to enter the profession. One possibility is to subsidize only deaf students in programs enrolling large numbers of deaf students. Rather than a loss of freedom, restricting deaf students' educational choices to selected schools in each region might actually increase their freedom, in the sense of assuring them a better quality education. What would be the impact of such a decision in a province or state? Would the only benefits be financial or would the larger number of deaf colleagues also enhance a given student's education? Is a system of regional postsecondary programs for deaf students feasible? Would limiting government support to selected programs in each region violate deaf students' civil rights, as defined by either Canada or the U.S.? Are the assumptions of improved communication and, hence, better education by concentrating deaf students demonstrable?

Despite the broad acceptance of SLI in postsecondary programs, few studies have been done to support their effectiveness. Does the use of SLI actually put deaf students on an equal footing with other students? Do they receive the same amount of information? More? Less? If less, how much less? And if SLI do not completely overcome the communication barriers, what can be done to supplement their efforts? Would the use of other approaches

to mediated communication be more successful with some, if not all, deaf students? Such fundamental questions have not, so far, been addressed.

We have discussed at some length the handful of studies that have compared the views of sign-language interpreting by various stakeholders. The generally observed lack of agreement ought to be explicated for the benefit of all parties involved. Administrators, in hiring SLI, may be focusing on characteristics that deaf students do not appreciate, while overlooking those that deaf students find abhorrent. The views of teachers who work with SLI should enter into the decision-making processes for their selection and retention. Certainly, those preparing SLI should give thought to how interpreting is perceived in the field, lest their curriculums stray too far from its day-to-day realities.

What SLI characteristics are most highly associated with interpreting success? And a corollary: Are there constellations of factors that are essential? Some factors can be easily taught; e.g., maintaining confidentiality. However, developing the abilities to accurately sign voiced messages and voice signed messages may be limited by individual differences in SLI. Also, a particular deaf student may find a particular SLI more suitable in certain circumstances than another SLI or another SLI in other circumstances. Preparation programs must face the likelihood that not all characteristics are amenable to instruction. What, if any, factors must be present in applicants for interpreter training to assure their eventual success? Research should be directed at untangling these possibilities. If the issues seem complicated, it is because they are. Mediated communication only appears to be simple and straight forward. In practice, it seldom is.

Conclusions

In Canada and the U.S., postsecondary programs are being increasingly challenged to undertake the education of students with impaired hearing. To succeed, the programs must differentiate among these students according to their communication needs.

With respect to mediated communication for deaf students, numerous questions have had little or no systematic research. Those doubts that seem most urgent are: How can educators best allocate the available resources in personnel and money optimally to serve deaf students? Is sign-language interpreting an effective means of overcoming the communication barriers deaf students face? If it is, what factors make it more or less successful? How does it compare to other means of handling communication in the classroom?

That many questions have not been answered can be explained by the recency with which SLI have become a part of the postsecondary education of deaf students. But explaining why so little research and thought has been given to this educational response to the communication needs of deaf students should not continue to be an excuse for a future lack of study. Mediated communication promises deaf people expanded opportunities for educational achievement. To bring the promise to fruition may be more distant than, at first, it seemed to be. Whether near or far, however, it is a promise that we should vigorously strive to make come true.

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Endnotes

¹This term applies to all means - personal, mechanical, and electronic - that are interposed between parties to facilitate their communication.

²Also referred to as Automatic Speech-to-Text Systems (Schein & Greaves, 1990).

³Northcutt, 1984.

⁴Cokely, 1992, and Schein & Stewart, 1995.

⁵Ingram, 1988, found "a significant difference between interpreters working between a signed and a spoken language and interpreters working between two spoken languages." His studies also suggested signing the same message in ASL word order and English word order differ significantly.

⁶Additional versions have such names as Signing Exact English, Linguistics of Visual English, and Pidgin Signed English. For a detailed exposition of sign forms, see Gallaudet Encyclopedia of Deaf People and Deafness, 1987, New York: McGraw-Hill.

⁷The original researchers treated the ratings parametrically; their mean ratings were converted to the ranks shown in the table, enabling an easier nonparametric analysis.

⁸In saying that deaf students do not benefit fully from amplification, we do not imply that they get no benefit from it. We are merely reiterating the definition of deafness used throughout this chapter. While some deaf students obtain some benefit from hearing aids and assistive listening devices, they cannot depend upon them for the level of communication required in a postsecondary class.