Hiring a deaf computer professional*

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INTRODUCTION

The computer industry has a critical need for skilled professionals. Employers are already hard-pressed to find qualified workers and look with interest to the growing population of technically trained deaf individuals as a new source of competent employees. Interest in hiring deaf computer professionals has also been accelerated by employers' growing sense of social responsibility and their need to comply with government regulations concerning affirmative action in hiring and promoting handicapped individuals. This willingness to employ deaf professionals must be accompanied, however, by specific guidelines for the actual hiring and accommodation of such workers. This paper addresses the practical concerns of managers who wish to hire deaf professionals into their organization.

CHARACTERISTICS OF THE DEAF POPULATION

There are 13 million people in America who have some type of hearing impairment. About 1.8 million of these are considered "deaf," meaning that their hearing is not functional for the normal purposes of life. Since deafness is an invisible handicap, however, this group and its characteristics are relatively unknown to the general population.

Misleading terms like "deaf and dumb" and "deaf-mute" have reinforced common misunderstandings of the deaf population's intelligence and communication skills. In fact, IQ scores of the deaf follow the same normal distribution as the hearing population. Deafness does not, therefore, imply a lack of native intelligence. Neither does deafness imply the inability to vocalize. Most deaf individuals find that their speech sounds promote successful communication, especially among people who know them; but some individuals prefer not to use their voices because their speech sounds have not proved helpful in communicating with others.

Most hearing people overestimate the ease with which a deaf person can lipread. Actually, lipreading is a difficult skill to master. Only 26 percent of all speech is visible on the lips. Even the best lipreader cannot lipread everything that is said. Familiarity of the speaker is again a significant factor in successful lipreading. The challenge of individual speech styles and facial characteristics such as flowing mustaches can be met with practice in repeated meetings.

One of the most significant results of deafness is unknown to the general hearing population. Specifically, early onset of deafness can seriously hinder language development. Although there are some deaf individuals who can read and write very fluently, others have limited reading and writing skills that misrepresent their intelligence and understanding. The facile assumption that a deaf individual's hearing and speech impairments can be easily overcome by reading and writing ignores the relationship between hearing and language development and leads many people to underestimate an individual's knowledge and potential.

"Deafness" is a generic term, since the word describes a handicapping condition with many variables such as degree of hearing loss, listening skills and lipreading and speech abilities. Other factors such as personality, education and intelligence have nothing to do with deafness per se. Although there is value in knowing the potential impact of deafness, it is vital to recognize the uniqueness of each deaf individual.

RECRUITING SOURCES

There are specialized institutes within the United States that are dedicated specifically to the education of the deaf. These institutes exist because the education of deaf individuals is a challenging task. On the average the educational level of the deaf population is well below that of the general population. Only 12 percent of the population seek post-secondary education, and only six percent receive baccalau-
reat degrees. Since most of the college-educated deaf now graduate from specialized schools, these schools are significant recruiting sources.

Currently there are several post-secondary schools with significant histories of educating deaf individuals. The oldest of these schools is Gallaudet College in Washington, D.C. Founded in 1864, Gallaudet is a liberal arts college for deaf students only. There is no computer science major per se, but degrees are granted in computational mathematics and in business with an emphasis on data processing. In 1969 the National Technical Institute for the Deaf (NTID) was established on the campus of the Rochester Institute of Technology (RIT) in Rochester, New York. As a college of RIT, NTID offers certificates, diplomas and associates degrees in data processing. In addition, NTID supports deaf students pursuing bachelor’s degrees in RIT’s School of Computer Science. In 1969 the National Technical Institute for the Deaf (NTID) was established on the campus of the Rochester Institute of Technology (RIT) in Rochester, New York. As a college of RIT, NTID offers certificates, diplomas and associates degrees in data processing. In addition, NTID supports deaf students pursuing bachelor’s degrees in RIT’s School of Computer Science.2

Utah State University, New York University and California State University at Northridge have growing programs for the deaf in computer science. In addition, special educational services for the deaf are becoming available throughout the country in response to Sections 503 and 504 of the Rehabilitation Act of 1973. As access to programs opens, the number of qualified deaf graduates grows.

Employers can recruit these graduates through the placement offices of the degree-granting institutions. Deaf baccalaureate degree students at RIT, for example, are encouraged to follow the standard procedures of RIT’s Central Placement Office. Colleges offering special programs for deaf individuals, however, usually augment placement services with additional services tailored specifically to their needs. These services can include special assistance during the application/interviewing process, orientation activities for the managers and co-workers of a new hire and troubleshooting consultation during the first weeks of employment. NTID and Gallaudet in particular provide a wealth of materials and personnel to assist employers in hiring a deaf professional.

Justifying the commitment required to hire a hearing-impaired person on a full-time, permanent basis can sometimes seem an overwhelming obstacle to employers. This impediment is most often an artifact of the imagined needs and problems of a deaf individual rather than accurate information about such a person. Fortunately, the desire of the employer to minimize risk with a new hire is complemented by the desire of educators of the deaf to maximize the experiential learning component of formal education. Thus, most special programs for the deaf either require or encourage work experiences as part of their programs. A summer or one or more cooperative work periods provide an excellent opportunity for employers to gauge the impact of hiring a deaf individual. The spectrum of support services supplied for permanent placement is generally available for co-op placement, also, and can help make even such short term commitments truly enriching experiences.

INTERVIEWING AND FOLLOW-UP

The initial contact a deaf person makes with an interested employer can occur in a variety of forms such as replying to a newspaper advertisement, mailing in a resume, requesting an application form, or appearing in person at an on-campus recruiting interview. None of these forms of contact guarantee that the employer will be forewarned that the applicant is deaf and there is no legal requirement to that effect. Indeed, the applicant’s deafness may only be revealed in his communication attempts, whether in writing or in person. An employer learning of the applicant’s handicap in this way may become surprised, confused and hesitant to carry out the interviewing and recruiting process. It is imperative, however, that the employer actively proceed with the usual routine of interviewing.

Communicating with a deaf person at the initial in-person interview is, at best, an opportunity for the employer to assess the deaf person as a whole and to observe the nature of his listening and communication abilities. A good strategy for the interviewer is to start speaking slowly and let the deaf person monitor or control the pace and mode of the interview. The deaf person may indicate his inability to lipread and request that the interviewer write everything on paper. On the other hand, the deaf person may not need to resort to pencil and paper, and the interview can take place in the usual manner (i.e. communicating orally). In fact, during the course of a day when a deaf person is interviewed by several people, the deaf person may use pencil and paper with one interviewer and communicate orally with another. The interviewers should be aware of the various communication modes that may be employed. Also, it is essential for the interviewer not to show any hesitation or displeasure when asked by the deaf person to speak slower or use pencil and paper.

Another strategy to consider is the use of a sign language interpreter at the interview. It should be emphasized that the need for such a service should be specified by the deaf person, since some deaf persons do not find it necessary to have an interpreter while others may need one. If the need for an interpreter is stated, the organization should make arrangements to obtain one through a local referral or vocational rehabilitation agency that serves deaf people. One of the reasons why interpreting services are mentioned is that there are legal considerations, such as Sections 503 and 504 of the Rehabilitation Act, which create a mandate for employers to make their facilities accessible to the handicapped in general. In the case of deaf people, communication accessibility is a consideration.

The variety in the degree of hearing and speech and other communication skills must be borne in mind; but, once the communication considerations have been dealt with, the scope and content of the interview should focus on the usual issues such as the qualifications of the prospective employee, his ability to contribute to the overall objectives of the company, his ability to get along with his peers and managers and other necessary attributes required to make him a successful employee.

Finally, if the organization wants to follow up the interview by offering the prospective employee a job, indicating to the applicant that the organization could not find a suitable position, or asking for more information, it is important that the organization make such efforts directly, in writing if possible. Direct contact or writing is preferred because
the applicant may not have direct access to a telephone. Telephone communication through a third party runs the risk of misunderstanding because of distorted or abbreviated messages.

ORIENTATION

In any new job setting the environmental barriers, whether they be social, physical, or technical, can be overcome by the orientation process. This process is simply an educational one in which the new environment is described to the new hire to make him comfortable in his new setting. In the case of a deaf new hire the orientation process is not radically different from that for a new hire who is hearing. Depending on the organization, however, the process can differ for the deaf employee’s peers and his management, since they generally need some orientation in this case also. This type of orientation, in both a formal classroom and informal social setting, will be described.

The best approach to making a deaf new hire’s peers and management feel comfortable and removing the mysterious aura surrounding deafness is to make them aware of deafness in general. The more they understand deafness, the more receptive they will be to the new hire and the new hire to them. This receptivity is essential because the population-at-large tends to have a stereotyping attitude toward a specific population. The process of orientation will assist in the removal of the stereotyping factor and help make the view of the person towards a new hire more individualized. In the process the new hire will blend into the work setting rather than stand out on account of his deafness.

There is a wide range of materials that organizations can use in their formal training programs for the new hire’s management and coworkers. These materials can include movies, books, pamphlets and manual alphabet reference cards, to list a few. Such materials can be obtained from the colleges, institutes and organizations that serve deaf people and from appropriate personnel representatives in corporations. Some corporations may have materials they use to conduct formal training programs; others may have materials they use on an informal basis. Appendix A lists the names and addresses of several sources of orientation information and Appendix B lists the names of several corporations with experience in hiring deaf individuals.

Informal orientation is a process that is best left to the new hire, who usually takes the initiative in educating his peers about aspects of deafness that are not covered by the formal training materials. Informal training may take the form of stories and anecdotes that have a deaf theme or informal instruction in sign language or the lifestyle of a deaf person (e.g. how he “hears” the doorbell, his “telephone”). This approach usually is entertaining and goes a long way in removing the so-called environmental barriers.

The orientation process for the deaf new hire may differ only in the way information is presented, depending on the deaf person’s communication skills. It should be emphasized that the deaf person should receive the full benefit of orientation programs and not be given a half-hearted treatment because of his communication limitations. The new hire’s communication skills can be inferred from the initial interview process.

As essential as it is for any organization, the orientation process may be even more important for situations involving a deaf new hire. Its value should not be minimized, for such a program implemented correctly and positively goes a long way in creating a congenial working atmosphere for the new hire, his peers and his management.

TRAINING

In any organization heavy emphasis is placed on training and education for employees, especially in the computer field with its rapidly changing technology. This training gives the employee the opportunity to keep pace with technology. At the same time the organization maintains a group of qualified and educated people to meet its changing needs.

When a student makes the transition to the business world, a great deal of practical material must be digested before the student makes himself a useful employee. To maintain his usefulness, he must avail himself of professional development activities throughout his career.

The medium through which training is presented to the employee has greater impact on a deaf employee than on a hearing employee. To give a simple example, an audiotape is as useless to a deaf person as a videotape without sound is to a blind person. In a classroom setting there are several points to consider for a deaf person such as relevancy of the subject matter, the size of the class, and the communication skills of the deaf individual. In any case the deaf individual should make his needs known. They can take the form of preferential seating, notetakers, or even a sign language interpreter. Some deaf people may find that none of these aids are necessary, and others may find some or all of them necessary.

There are an increasing number of courses offered in both audiotape and videotape forms. For a deaf person the audiotape does create significant problems. The deaf person can receive the full benefit of the tapes by having a sign language interpreter interpret the tape, by having a secretary transcribe the contents, or by getting a copy of the script that was used to prepare the tape. The latter method is most practical, and such scripts are usually available. Videotape has similar ramifications for a deaf employee because it is harder to lipread a TV screen than to lipread in person. Thus, although the employee may benefit as his peers from the visual aids that are incorporated in videotape training, he will not necessarily do much better with the “talking face” type presentation than with an audiotape. Finally, voice-over presentations are fundamentally as difficult for the deaf person to follow as audiotapes.

Other media through which courses are offered include computer-assisted instruction and programmed instruction (self-paced instruction) as well as training in the form of reading manuals. These media are ideal for deaf persons.

If an organization acknowledges the value of training programs, it should be able to guarantee that the deaf employee receives the full benefit of these programs.
MEETINGS

Meetings usually provide a forum for people of a given organization to share relevant information. Meetings take many forms—one-on-one, small groups of three to nine people, groups of 10 to 20 people, and an assembly type group of more than 20 people. The deaf person may require specific consideration in each of those settings. It should be emphasized, however, that there are no universal solutions for a deaf person in any setting. Useful strategies vary from one deaf person to another, depending on communication and listening skills as well as the group of people involved. The deaf person’s problems are less acute if the group contains people who are familiar with the deaf employee.

In a one-on-one situation the communication process usually requires a simple adaptation. In some cases the person meeting with the deaf individual may know sufficient sign language, may talk at a speed appropriate for him to lipread, or may write down everything for him to read. In response the deaf person may write, speak, or even use sign language, if the person he is communicating with can read sign language.

In a small group the communication problems become somewhat more complicated since more people are involved. At this point written communication may be more difficult but can still be used. The deaf person may need to depend on one person in the group to follow the conversation, or he may be able to follow everything by lipreading alone. If the deaf person is the presenter, the environment differs and will depend greatly on his communication skills. The deaf person may have sufficient speech skills to conduct the meeting. On the other hand he may prepare a text or some notes for his co-workers to present for him. Communication in this kind of a setting is usually not a critical problem for a deaf person since the group is small enough for the deaf person to monitor.

The problem becomes more acute when the group is bigger. There are more personal relationships and communication links to take care of. If the deaf person has good lipreading skills, he may still run into problems at this type of meeting. For example, when one person stops talking, the deaf individual must find the next person who is talking. By the time he finds the speaker, that person may already be half-way through his statement. Similarly, if more than one person tries to speak at once or if someone interjects a parenthetical remark, the deaf person will not be able to follow them. If the meeting contains critical information for the deaf person, it may be necessary for the meeting to be controlled carefully. For example, it may be necessary for each person to raise his hand and be acknowledged before speaking. If the deaf person doesn’t have adequate lipreading skills, he may need to depend on a notetaker or, if one is available, a sign language interpreter. In many cases a notetaker would suffice and could be a co-worker or secretary.

In an assembly-type setting the deaf person with adequate lipreading skills should be seated preferentially or, if he prefers, have a notetaker or sign language interpreter seated next to him. In any case the importance of the meeting will determine whether a sign language interpreter is justifiable. The sign language interpreter is usually able to interpret the speaker’s comments word-for-word, while a notetaker can at best give a good abbreviated summary of what has happened. Furthermore, the sign language interpreter can also reverse-interpret, i.e., repeat the deaf person’s sign language statements or questions orally. In a setting of 500 people or more lipreading can be impractical, since it ceases to be effective when the speaker is more than eight to 10 feet away. In such situations a notetaker or an interpreter would be necessary.

WORK ASSIGNMENTS

It is not appropriate to attempt to identify specific work assignments that deaf employees can or cannot handle. The skills and interests of deaf employees are as varied as those of their hearing counterparts. An appropriate match between employee and task must be made by considering the training and qualifications of the individual. Managers are urged to be aware of their own stereotyping tendencies when considering work assignments. Many of their tendencies are vestiges of outmoded or changing work environments. For example, the increasing orientation toward terminals for interacting with the computer reduces the number of communication barriers between the programmer and the computer. In addition, the terminal becomes a handy device for aiding communication among deaf and hearing co-workers. The recent push for documentation produces real-time rather than after-the-fact documentation, and the introduction of efficient, graphical documentation tools such as HIPO and data flow graphs also ease communication among deaf and hearing. Deaf individuals have worked in essentially every capacity within a data processing environment. There are deaf data entry personnel, deaf computer operators, deaf programmers, deaf systems analysts, deaf project leaders and deaf managers. Sensitivity to the uniqueness of each deaf person and willingness to modify the work environment slightly to accommodate him can permit that person to function and grow in accord with his own interest and abilities.

CONCLUSION

The growing population of college-educated deaf individuals provides a new source of skilled workers to satisfy the critical need for computer professionals. There are specific, cost-justifiable techniques that can be used to overcome the communication problems that a deaf employee will face on the job. Schools, institutes and organizations serving the deaf offer materials and personnel to assist the employer in accommodating the deaf worker. Employers are urged to draw on this pool of competent professionals. They will find an increasing number of graduates who can be significant contributors to their organizations.
REFERENCES


APPENDIX A

Sources of orientation information:

Alexander Graham Bell Association for the Deaf (AGBAD)
1537 35th Street
Washington, D.C. 20007

Gallaudet College
7th and Florida Avenues, NE
Washington, D.C. 20002

National Association of the Deaf (NAD)
814 Thayer
Silver Spring, MD 20910

National Technical Institute for the Deaf (NTID)
Rochester Institute of Technology
1 Lomb Memorial Drive
Rochester, NY 14623

Registry of Interpreters for the Deaf (RID)
P.O. Box 1339
Washington, D.C. 20013

APPENDIX B

A partial list of employers of deaf computer professionals:

American Can
Anhauser-Busch
Boeing Computer Services
Bunker-Ramo
Grumman Data Systems
IBM
Kodak
Lockheed
McDonnell Douglas
Mobil Oil
Travelers Insurance
Union Oil
U.S. Dept. of Housing and Urban Development
Xerox