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**THE MAINSTREAMING PROCESS AND MATERIALS
FOR THE MAINSTREAM CLASSROOM**

by

Kari Delzer

**An independent study submitted in partial fulfillment of
the requirements for the degree of**

Master of Science in Speech and Hearing

Emphasis in Education of the Hearing Impaired

**Washington University
Department of Speech and Hearing**

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Introduction

Mainstreaming has become widely accepted as the best educational option for many students with disabilities. The ideal is a mainstreaming program that benefits the school, the regular education classroom, and the disabled student; for some students, however, the mainstreaming process has proven to be less than successful. While many hearing-impaired children begin their education in schools for the hearing impaired, the ultimate goal is to successfully mainstream these children. In the St. Louis area, Central Institute for the Deaf, Moog Center for Deaf Education, and St. Joseph Institute for the Deaf strive to make the transition from one educational setting to another as easy as possible for students with hearing impairments.

As part of this transition process, a representative from the school for the hearing impaired conducts an in-service presentation for the students in the mainstream classroom. This in-service usually lasts an hour to an hour and a half and covers a broad range of topics including the parts of the ear, the normal auditory channel, hearing impairment, hearing devices, simulated hearing losses, and communication strategies. The children in the mainstream class may feel overwhelmed with information, even though it is presented in a fun way, and therefore may not be able to remember—or apply—everything they have learned.

The purpose of this study was to examine the success of mainstreaming disabled students overall and specifically hearing-impaired students, investigate the current transitional procedures used by local schools for the hearing impaired, and to determine what additional materials might be beneficial in that process. The resources used to ascertain this information were literature on mainstreaming, especially mainstreaming of hearing-impaired students; personal interviews with staff from CID, Moog, and St. Joseph; and personal knowledge and experience. The results

indicate that while current practices are beneficial to students entering the mainstream, more can be done to facilitate the success of hearing-impaired children, especially in the area of socialization with their hearing peers.

Literature Review

Since the implementation of PL 94-142, the Education of All Handicapped Children Act, mainstreaming (also called “inclusion” or “integration”) of disabled children into regular education classrooms has become a controversial issue, especially regarding hearing-impaired children. One of the challenges of mainstreaming deaf students is that public schools may not be equipped to educate the hearing impaired, in that they lack the necessary resources and support staff required to meet the needs of those individuals. For this reason, hearing-impaired children may be isolated from their hearing peers. This isolation may be physical, in a self-contained classroom with other deaf children of varying ages and abilities; educational, in a classroom where the language and vocabulary used are at a level above the child’s own language level; or social, in a school outside the child’s own neighborhood, where the other children may not want to or know how to relate to the deaf student (Higgins, 1990; Nowell & Innes, 1997).

Trends in Mainstreaming

In the past few decades, education of children with disabilities has rapidly and drastically changed. Most disabled children are now educated in their neighborhood public schools. This change has occurred partly because of federal and state legislation and partly because of the perceived social benefits of mainstreaming. According to Llewellyn (1995), “A school is merely a microcosm of society, a place in which one learns and experiments with how to relate to others” (p. 740). For disabled students, the extent to which they feel a part of this society can determine the overall success of their mainstream experience. Although Graves and Tracy (1998) emphasize the importance of disabled children being welcomed into this society, Hegarty (1982) notes that while disabled children may be “generally accepted” by their peers, they are not always viewed “as fully-fledged members of the school community” (p. 180).

At their best, inclusion programs have the potential to positively impact not only the disabled child's education, but also the way in which the child interacts with peers, both in school and beyond. Integration of disabled children is believed to promote social acceptance by their non-disabled peers, as well as increasing social skills, independence, self-confidence, and self-esteem. These factors influence the child's life throughout the school-age years and into adulthood (Roberts & Zubrick, 1992; Hegarty, 1982; Bergen, 1993).

Whether or not these benefits are realized depends on several variables. Bergen (1993) states that despite the advantages of the inclusion classroom, the evidence of friendship development between disabled students and their peers remains questionable. Research has shown that disabled students in an integrated preschool "spent more time in solitary activity and observation, and were less socially involved" (p. 234). According to Hegarty (1982), the structure and organization of integration programs may determine the results. However, he also states that providing ample opportunities for social interaction between disabled and non-disabled students does not guarantee that such interaction will take place. Roberts and Zubrick (1992) agree that "social acceptance of students with...disabilities into regular schools requires more than the mere placement of these students into the regular classroom and playground" (p. 201). Hegarty reports that peer tutoring has been a successful approach in encouraging interactions between disabled students and their peers. Llewellyn (1995), however, argues that this type of acquaintance is effective only within contrived situations and has little impact outside structured school activities.

More often, disabled students become isolated from their peers (Roberts & Zubrick, 1992). In her research, Llewellyn (1995) found that up to 84% of disabled children have experienced bullying from their peers in the mainstream. She divided this bullying into two

categories: overt and covert. Overt bullying involved verbal or physical attacks, whereas covert bullying resulted in social isolation by being excluded from peer groups. She stated that students viewed as different are more likely to be harassed, and one of the students she interviewed added, "there was a group mentality in school that tended to pick on an 'outsider'" (p. 741). According to Bergen (1993), friendships between peers are usually based on similarities. However, Graves and Tracy (1998) comment that the experiences of most non-disabled students in the mainstream will not have provided them much opportunity to view disabled students as being similar to themselves. Instead, as Roberts and Zubrick mention, they are often judged by different criteria than their non-disabled peers, making social acceptance harder to attain for those students.

Since it is agreed that the social benefits of mainstreaming are important to disabled children's success, but that these benefits are not realized in many schools, the question remains, what can be done to improve the likelihood of positive social interactions between disabled and non-disabled peers? The not-so-obvious answer to many is the education of students already in the mainstream. Hegarty (1982) notes that while teacher preparation of disabled students' needs was regarded as essential, "preparation of pupils already at the school tended to be limited" (p. 176). This may partly explain disabled students' feelings of isolation and even rejection by their peers. Roberts and Zubrick (1992) suggest that part of the education process include alternatives to using labels, which may be used negatively by other students. Again, the idea is to focus on similarities instead of differences. Graves and Tracy (1998) list several methods of preparing students for the inclusion of a disabled student. These include "enhancing social integration,...educational materials, simulation exercises, interaction with other people with disabilities, [and] structured interaction in the classroom" (p. 223). These and other strategies

may prove effective in helping students accept and interact with disabled students both in and out of school.

Peer Attitudes Toward Hearing Impairment

Studies on individuals' reactions to adults and children wearing hearing aids have been conducted since the late 1970s. The consensus of these studies has been that, in general, people react negatively toward those who wear hearing aids (Kasten & Henry, 1986). According to Dengerink and Porter (1984), mainstreamed hearing-impaired children are profoundly impacted by the attitudes of their peers in the school environment. Therefore, it is especially important that those children foster positive attitudes toward hearing impairment.

Dengerink and Porter (1984), Kasten and Henry (1986), and Stein, et al. (2000) found similar results when they conducted surveys of peer reactions of 4th through 9th grade students to students wearing hearing aids. The earlier two studies used photographs of the same children shown unaided and wearing different styles of hearing aids. In the Dengerink and Porter study, none of the children surveyed attended class with a hearing-impaired student; in the Kasten and Henry study, half of the children were in class with a hearing-impaired student, and the other half were not. Both studies found that the pictures of children wearing hearing aids were rated poorly in categories including attractiveness, intelligence, and personality traits, compared to the pictures of unaided children.

Stein, et al. (2000) developed a questionnaire and administered it to adolescents to determine their attitudes toward their hearing-impaired peers. Again, half of the students were in class with at least one hearing-impaired student, and the other half were not. The questionnaire consisted of statements such as "I don't like to talk to hearing-impaired kids because they sound different" and "Kids who wear hearing aids are as good looking as kids who don't wear hearing

aids,” and students indicated whether they agreed or disagreed with each statement. The questionnaire included the issues of socialization, appearance, and achievement. The majority of results were positive; however, about 15% of students responded negatively in the areas of appearance and achievement, and about 7% responded negatively in the area of socialization. The authors suggest that the more positive responses could have been the result of two things. First, nearly all the participants knew someone with a hearing impairment, regardless of whether that person was in their class. Second, their responses may have been “influenced by the respondents’ desire to appear politically correct. Real or perceived social pressure could have prompted some students to provide responses they thought were expected of them, rather than those that reflected their true feelings and opinions” (p. 5).

The authors of all three studies recommend educational programs designed not only for students in the same classroom with a hearing-impaired student, but for the entire school where that student attends. Stein, et al. (2000) suggest including information about hearing impairment, communication, and devices, as well as providing opportunities for students to interact with hearing-impaired peers.

Inclusion of Hearing-Impaired Students

In order to increase acceptance of hearing-impaired children by their peers, several attempts have been made to implement interventions meant to promote interaction between these groups of children. Although the short-term effects of such interventions seem positive, the long-term success of these programs remains unclear. Antia and Kreimeyer (1996) studied the effects of two types of interventions: social-skills and familiarity-based. The social-skills intervention was teacher-directed, and students were directly taught through activities and role playing. The familiarity-based intervention was child-directed, in that the children were given unstructured time

to interact with each other. As stated previously, merely placing hearing and hearing-impaired children in the same room (like the familiarity-based intervention) has not been shown to promote interaction and acceptance. Consequently, the results of the social-skills intervention were initially more positive than the familiarity-based. However, four weeks after both programs ceased, neither proved to sustain peer interaction or acceptance. The authors suggest this may be due to a need for longer, more intense intervention; to the lack of motivation on the part of the hearing children; or to the possibility that other factors, such as perceived intelligence and abilities, also have an effect on social acceptance by peers.

Besides social aspects, other issues can have an enormous effect on the success of a hearing-impaired child in the mainstream. Nowell and Innes (1997) list several factors to consider when deciding to place a deaf child in an inclusion program. Among the benefits of inclusion are the opportunities for the child to live at home, to communicate with and learn the standards of "the hearing world," and to choose from a wider availability of academic and vocational programs. The disadvantages included potential isolation, limited opportunities for direct instruction, and unavailability of support staff. The authors also compiled a list of questions to ask before making this decision:

- What is the individual's hearing level and ability to use residual hearing?
- What is the individual's preferred mode of communication, and is it practiced in the environment?
- Will the individual have access to captioning services, notetakers, hearing aid services, TTY's, and the use of other assistive devices?
- What is the individual's academic level?
- What is the level of direct communication that will occur in the environment between

the individual, teacher(s), and peers?

- Is the school staffed by certified and qualified personnel who are trained to work with the student who is deaf?
- What level of access will the individual have to curricular and extracurricular offering?
- Will there be deaf role models in the environment?
- Are there any teachers or administrators in the environment who are hard of hearing or deaf who may serve as role models? (p. 3)

Given all of these considerations, the chances of developing successful inclusion programs seem rather slim. Still, mainstream successes do happen. One example of an inclusion program that succeeded was reported by Kluwin, et al. (1996). It involved a kindergarten classroom in Fort Lauderdale, Florida, in which 15 hearing children and 7 hearing-impaired children were taught by both a regular classroom teacher and a teacher of the hearing impaired. This project required more work for the teachers and other classroom staff than a typical inclusion program, but according to those involved, the result was well worth the extra effort. In this classroom, the hearing-impaired students' language and vocabulary dramatically improved, and both groups of children interacted with each other and formed friendships that existed both in school and outside of school. The teachers worked together to develop the curriculum and share space. There were occasional difficulties, but because of the mutual respect between teachers, these were often resolved quickly. Other factors that contributed to the success of this program were the transitional aspects—that is, it was a new situation for all of the students, not just those who had a hearing impairment—that already existed in the kindergarten classroom setting, the use of buddies to promote help and interaction between hearing and hearing-impaired children, and the support of other staff within the classroom and school.

Another example of a successful mainstream program was cited by Gutiérrez (1994). In this program, inclusion of deaf students was necessary because of the low number of hearing-impaired students within the geographic location of the school. The regular education staff and students at the school seemed enthusiastic and accepting of this kind of program, and the focus of the administration involved was to make the educational experience of the deaf children as "normal" as possible. One administrator emphasized the fact that the deaf students were as normal as any of the other children at the school except "their ears [didn't] work" (p. 102). The positive attitudes and high expectations of the school staff added to the success of the program. Of the first graduates of this program, some participated in the high school's athletic program, and some continued their education in college.

Conclusion

Mainstreaming of disabled students is widely viewed as both educationally and socially beneficial; however, designing programs that prove to be both is a challenge. Educating the other children in the mainstream classroom is one of the key factors in the acceptance of disabled children. In a classroom with one or more hearing-impaired children, this includes education about hearing impairment, devices, and communication. In addition to education, social skills programs may be effective, but more research is needed to determine the optimal types and duration of these programs. With continued efforts, teachers, administrators, and students will help make the process of mainstreaming disabled students as positive as possible.

Preparing for Mainstreaming of Deaf Students

The goals of private schools for the deaf, such as Central Institute for the Deaf, St. Joseph Institute for the Deaf, and The Moog Center for Deaf Education in the St. Louis area, are to make the transition from their programs to the mainstream setting as smooth as possible and to enable hearing-impaired children to be successful in the mainstream. The main issue for these schools is not *whether* children will be mainstreamed, but *when*. Deciding when a child is ready to be mainstreamed is a complex process. Once decided, the mainstreaming process may take up to a year to complete, often continuing long after the child has been placed in the new school (D. Carter, personal interview, November 30, 2001; V. Frigo, personal interview, December 4, 2001; E. Vogel, personal interview, December 6, 2001).

The Decision to Mainstream

Several factors affect the decision to place a child in a mainstream classroom. One of the most influential is the child's score on the Mainstream Success Index. This is a tool used to determine a child's readiness to enter the mainstream. The child's verbal achievement, receptive and expressive language, and reading scores are given weighted point values, the total of which fall into a continuum of recommendations ranging from full-time special education to full mainstreaming with support services of 3 hours or less per week (D. Carter, personal interview, November 30, 2001).

Once the decision to mainstream has been made, the child, parents, and school work as a team to ensure the student and the potential school are prepared for the next school year. The student may attend half-days in a mainstream school while still receiving services from the school for the deaf. During this time, someone from the school for the deaf observes the student in the mainstream setting, observes the teacher in the mainstream setting, and writes reports from these

observations. In the past, students at CID attended a mainstreaming class, which included basic explanations of individual education programs (IEPs), laws concerning children with disabilities, hearing impairment and devices; suggestions for how to follow lectures and discussions; support services and accommodations that may be made for the student; extra-curricular and social activities; communication; and self-advocacy. Currently, Middle School students are placed in slightly larger classes, and some of the issues concerning mainstreaming are addressed throughout the school day (D. Carter, personal interview, November 30, 2001).

Placement

At Central Institute for the Deaf, the parents and school work together to decide an appropriate placement for the hearing-impaired student. They tour potential schools, talk to principals, and observe in classrooms. Once the site has been determined, they must work to prepare the school for the arrival of the hearing-impaired child. In the St. Louis area, a representative from the school for the hearing-impaired provides in-service training for all staff that will be involved in the education of the in-coming student. This training involves information about hearing impairment, the device the child uses, accommodations that must be made, special services the child will receive, and any other pertinent information regarding the particular child.

Peer In-Service

A separate in-service is conducted to educate the children in the mainstream class about hearing impairment and to prepare them for their future classmate. The peer in-service provides information about hearing impairment, hearing devices, and communication strategies in a way that is fun as well as educational. Some of the materials used in these in-services include a model of the ear, audio and video tapes that simulate hearing loss, ear plugs, sample hearing devices, and educational videos about hearing loss and noise protection (D. Carter, personal interview,

November 30, 2001; E. Vogel, personal interview, December 6, 2001).

To teach about the parts of the ear and how the ear works, the coordinator of the in-service uses a large model of the outer, middle, and inner ear and pictures of the individual parts of the auditory channel. The pictures are hung around the children's necks, and the children play a "telephone" game to demonstrate how the auditory channel works and how a breakdown in any part of it can cause a hearing problem. CID also uses middle ear bones to show how small the parts of the ear are. For younger children, other materials, such as a drum or a funnel, can be used to demonstrate how the parts of the ear work (D. Carter, personal interview, November 30, 2001; E. Vogel, personal interview, December 6, 2001).

When explaining hearing loss, the coordinator of the in-service uses the Familiar Sounds Audiogram, which uses pictures such as an alarm clock and a lawnmower to make sound level and frequency more concrete. The coordinator uses several methods to simulate hearing loss. One way is to use video and audio tapes which have been filtered specifically for that purpose. Another technique to simulate hearing loss is to have some of the children wear ear plugs and then role play with other children (D. Carter, personal interview, November 30, 2001; E. Vogel, personal interview, December 6, 2001).

The next step in the in-service is to introduce hearing devices. The coordinator lets the children handle sample hearing aids and both the internal and external parts of cochlear implants. She explains the different parts of the devices, how they work, and how the two are different from each other (D. Carter, personal interview, November 30, 2001). At St. Joseph Institute for the Deaf, the coordinator also talks about hearing devices that pre-date the modern hearing aid and other assistive devices, such as bed-shaker alarm clocks and doorbells for the hearing impaired (E. Vogel, personal interview, December 6, 2001).

Another important topic is communication strategies. The coordinator discusses how to best communicate with someone who has a hearing impairment, including tips such as getting the person's attention first, speaking slowly and clearly, repeating or rephrasing if necessary, and facing the person. These skills are demonstrated through role playing or skits. The coordinator may also ask what-if questions, such as, "If the teacher is talking and you see the child with a hearing impairment is not watching, what could you do to help?" This gives the students the opportunity to offer their own ideas and strategies (E. Vogel, personal interview, December 6, 2001).

Additional Materials and Services

The amount of information presented in the peer in-service may be overwhelming to the students in the mainstream class. While it is all important, it is presented in such a short amount of time that the students may not be able to retain much of what has been said. Role playing and actively participating in the in-service certainly help, but perhaps a permanent resource in the classroom would help to reinforce the details of what was taught in the in-service. This kind of resource would be written at an elementary level and would explain hearing impairment, hearing devices, and communication strategies. It would also emphasize the normality of a child with a hearing impairment. By emphasizing the similarities between hearing and hearing-impaired students and providing useful tips for improving communication between these groups of students, this resource would help facilitate social interaction. Such a resource (see Appendix) could be included as part of the peer in-service. It could also be read by either the student or the classroom teacher on the first day of school. After the initial reading to the class, this resource could be kept in an accessible place, such as a book corner, for students to refer to as questions arise.

Another suggestion for increasing the success of hearing-impaired children in the mainstream is more in-depth social skills training for the entire class. As mentioned previously, social skills programs have been shown to increase positive social interactions between hearing-impaired students and their peers. Social skills training as part of the regular curriculum would benefit not only the hearing-impaired students, but every student who participated. This kind of program need not utilize an undue amount of time and materials, yet it can be emphasized throughout the school day in nearly every interaction between the students.

The current mainstreaming practices of schools for the hearing impaired in the St. Louis area are certainly commendable, but the desire for hearing-impaired children to be more successful always exists. Through researching what has worked in the past and devising creative approaches to the mainstreaming process, educators of the hearing impaired can help to ensure their students have a positive mainstream experience.

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Appendix

Using the information I discovered through researching the literature and interviewing staff from CID, Moog, and St. Joseph, combined with my personal knowledge and experience of hearing impairment and hearing-impaired individuals, I compiled the following booklet. It is a model for a resource that could be used to educate hearing children in the mainstream classroom about hearing impairment. This booklet is not necessarily the best or only way to present such information; it is merely a starting point and can always be improved upon or added to.