Learning in interpreted instructed and direct instructed classrooms

Darlene De Siervi

Follow this and additional works at: http://scholarworks.rit.edu/theses

Recommended Citation

This Master's Project is brought to you for free and open access by the Thesis/Dissertation Collections at RIT Scholar Works. It has been accepted for inclusion in Theses by an authorized administrator of RIT Scholar Works. For more information, please contact ritscholarworks@rit.edu.
LEARNING IN INTERPRETED INSTRUCTED AND DIRECT INSTRUCTED CLASSROOMS

MSSE MASTER'S PROJECT

Submitted to the Faculty
Of the Master of Science Program in Secondary Education
Of Students who are Deaf or Hard of Hearing

National Technical Institute of the Deaf
ROCHESTER INSTITUTE OF TECHNOLOGY

By:
Darlene M. DeSiervi

In Partial Fulfillment of the Requirements
For the Degree of Master of Science

Rochester, New York June 15, 2006

Approved: [Signature] (Project Advisor)

[Signature] (Program Director)
ABSTRACT

It has been frequently documented that deaf and hard of hearing (henceforth, DHH) children do not have the same academic achievement as hearing children. One reason may be communication barriers that make learning by DHH students difficult. Some communication in mainstream classrooms is delivered through interpreters, which possibly invites additional obstacles. Is the DHH student receiving full access to quality education in the classroom? Even in a direct instructed setting, does the DHH student fully understand every word the teacher shares through sign language? It is imperative to point out that all DHH children have the right to a barrier-free education and that this will come about only if we understand better how communication occurs in classrooms of DHH students.
INTRODUCTION

The academic development of many DHH students has always been somewhat behind that of their hearing peers. There are many factors that influence the educational success of DHH students but inadequate communication is the focus of this investigation. Cohen and Johnson (1994) warn readers that it is naive to believe public schools with interpreted classrooms will develop an environment where absolutely everyone in the school will be able to communicate directly and proficiently according to the learning styles and needs of all DHH children. Conley (2001) mentions that many of her DHH students come from different communication backgrounds so she must adjust to individual signing styles and then her signing becomes inconsistent. This situation is complex. This author experienced breakdowns of communication in classrooms where interpreters were present and in direct instructed classrooms where the teacher and student have difficulty matching communication styles. The major priority for DHH students is to receive a valuable education, and they need to completely and comfortably understand dialogue that takes place in any classroom.

Jones (1997) found that there is not a great deal of information about whether DHH students are receiving the same quantity and quality of information through interpreters as they might through direct communication. The purpose of this research project is to compare the perception of learning in DHH students in classrooms of interpreted instruction and direct instruction. The growing concern of getting the communication needs of all DHH students met in the education system creates two main questions: 1) how much of the information does the DHH student comprehend in an interpreted instructed class; 2) how much of the information does the DHH student
comprehend in a direct instructed class. The results of this study should provide information about the accessibility of instruction to DHH students in each of the educational settings and suggest further communication strategies that can be employed in classrooms of DHH students. This study is aimed at enhancing communication in the classrooms of DHH students so that the quality of their education can also be improved.

LITERATURE REVIEW

Kluwin and Stewart (2001) found that the research in the area of educational interpreting showed no empirical evidence that directly indicated how well DHH students understood their interpreters. In contrast, Luckner and Muir (2001) identified successful DHH students that were mostly receiving their educational services in general education settings. They wanted to discover what factors contributed to their success and they came across the use of interpreting services. The teachers and DHH students involved in their study said that such academic success would not be possible without the ongoing assistance of interpreters. Ramsey (1997) emphasized in her analysis that in order for DHH students to fully participate in their education in the classroom, they need full access to the complete message.

When one takes into account the factors that have a significant effect on the intelligibility of a message, it becomes clear that interpreting is not simply a matter of changing from one language to another or from one mode to another. In finding out the intelligibility of a message, one must also look at the goal of the interpretation and the degree of clarity between the original and the interpreted message. No research has directly addressed intelligibility of an interpreted message except a few suggestions from
educational researchers.

For an interpreted message to be intelligible does not mean it is comprehensible. For the interpreted message to be accurately understood, we need to look at the manner of delivery.

Interpreters can use American Sign Language, an English-based sign system, or any type of signing that falls under the rubric of contact signing or Sign Supported Speech. Hatfield, Caccamise, and Siple (1978) reported that among students at the National Technical Institute for the Deaf, there was no difference between the comprehension of information carried in American Sign Language or Signed English. This finding repeated itself with Caccamise and Blaisdell (1977) and then again with Cokely (1990). For proficient signers, the type of signing does not seem to be a priority for comprehension of message. Still, this raises two critical concerns. First, how important is the type of signing used in interpreting for less skilled signers? And what is the best type of signing for elementary and secondary deaf students? Second, what is the motivational impact of not using the preferred type of signing? Research is extremely limited in such factors related to these questions.

Cokely (1986) quickly looked at lag time as a critical issue not only in interpreting a teacher's presentation but in interpreting the give and take of communication. He found that a brief lag time helped an interpreter deliver accurate messages but after two seconds of lag time, there was an inverse relationship between the length of lag time and the accuracy of the interpreted message. In other words, the farther behind the speaker the interpreter was, the more errors the interpreter made. In classrooms this is a fairly serious concern since changes in classroom discourse, such as
turn taking shifts, take place within a fraction of a second (Rowe, 1974).

When a class is well paced, students absorb more of the instructional material. But how does pacing, which is determined by the teacher, affect the ability of an interpreter to convey the teacher's messages? There is no research available but various authors have made recommendations (e.g., Seal, 1998; Stewart et al., 1998).

Independent reading for pleasure is one instructional approach thought to be an important factor in helping students learn to read or write, whether they are deaf or hearing. What children learn as a result of developing this habit will far outweigh any amount or type of instruction they receive. Independent reading provides students with abundant comprehensible input about written English, more than they can ever hope to learn through instruction (Krashen, 1992). The development of this habit starts early when young children experience the joys being read to by others. Emphasizing a love for good literature, both at home and in school, encourages the acquisition of this habit. Many readers know that this assumption has been taken to the extreme in some instructional programs for the DHH, and even hearing students. Often children do acquire knowledge of reading and writing naturally but most do not learn to read and write this way exclusively. They need guided instruction in these skills. Instruction is more of a matter in finding the right balance between creating conditions that foster acquisition and learning through purposeful demonstration and explicit explanation of the features of language and concepts of literacy. The interpreted word is not always clear which should be taken into serious consideration for accuracy.

Research has indicated many areas and contexts in which direct instruction can improve areas of development in literacy. The literature on strategy use indicates there
are strategies that good readers use to comprehend text, which can be made explicit to poor readers with direct explanation (e.g., Baker & Brown, 1984; Garner, 1987; Paris, Wasik, Turner, 1991; Pressley, Johnson, Symons, McGoldrick, & Kurita, 1989). Also, DHH students who have not acquired competence in conversational language during early childhood continued efforts that support acquisition. There is also research that does not support learning through direct instruction. When grammar rules are taught out of context and assumed to transfer to reading and writing, the transfer does not happen (Krashen, 1984). Demonstration and direct instruction are most likely to be effective when used to teach skills and strategies as needed and within the context of authentic reading and writing activities. In addition, instruction must include the application of learned skills and strategies in multiple contexts. Direct instruction involves thoughtful consideration of what to teach, when, and how.

Conversing with students in American Sign Language for social and academic purposes has become increasingly recognized as being important to the education of many DHH students (e.g., Insraelite, et al., 1989; Johnson, Liddell, & Erting, 1989; Lane, 1992; Mahshie, 1995). As the natural language of DHH people in this country, American Sign Language allows DHH children to experience conversational language for all the purposes for which language is intended. Furthermore, the early acquisition and use of this language build a knowledge base, both of language and concepts, that supports further learning. The use of American Sign Language also represents cultural recognition for many DHH students, undoubtedly increasing self-esteem and motivation - critical affective variables in the development of literacy. Those who need a visual language and grow up in an environment that is rich in the conversational use of American Sign
Language are likely to have language skills and knowledge that will assist their development in many ways. Decisions about language use should always take into account the linguistic needs and preferences of the individual DHH child. The goal of language choice is to provide accessible input and to facilitate early acquisition (Mahshie, 1995). Therefore, for each child with a hearing loss, assessment should aim to find the language and conditions that will best meet that goal. Even when students clearly need the visual input of American Sign Language, this language or any language can be used in ways that are incomprehensible if individual needs are not taken into account.

Language development varies greatly among DHH students, a fact that is influenced further by the diversity of language approaches used in the country. For example, when students change programs or enter a program for the first time as older students, their language base may be very different from their new classmates, both in kind and degree of proficiency. These new students may have unique language needs that prevent them from coping with classroom conversations until they have further developed American Sign Language through acquisition or instruction. Their language needs must be addressed with individual planning.

Bilingual programs have come about as a result of recognizing American Sign Language as a true, visually accessible language and increasing its use in the classroom (e.g., Lane, 1992). Since there is no written form of American Sign Language, however, students still need to learn to read and write English. This has led to the development of bilingual/English as a Second Language programs based on the concept that students will learn American Sign Language as a first language and English as a second language. Many students in these programs learn English exclusively through print while others
may learn spoken English as well, but American Sign Language is the primary language of instruction for all. In fact, advocates of these programs may not view bilingual education as an approach to instruction, but instead as the natural progression of literacy development for deaf children (Hanson & Mosqueira, 1995). Beginning very early, distinctions are made between the use of the two languages. With young children, this happens in developmentally appropriate activities that build language knowledge and skill indirectly (Erting and Phau, 1997). As students become older and better able to reflect on their knowledge of language use, the structures of each may be explored in more detail, typically using American Sign Language to explain features of English, the lesser known language. It is possible for a program to claim to be bilingual but still fail at instruction in literacy for a variety of other reasons, including its interpretation of bilingual instruction. For example, efforts to develop American Sign Language before written English could be interpreted by some in ways that might limit young children's early, natural experiences involving print. Other factors that must be in place before bilingual programs can reach their goals include an adequate number of staff who are fluent in both languages and knowledgeable of the structures of both, training for staff in second-language acquisition, steps to ensure congruence between instruction and cultural mores (Nover & Andrews, 1998; Woodward, 1978), and support for families who have not used American Sign Language since the beginning with the birth of the DHH child.

Regardless of such challenges to interpreters and the deaf and hearing persons they serve, research dedicated to the outcomes of interpreting is extraordinarily scarce. Many studies have shared the desperate need for effective sign language interpreters and alternative means of evaluating interpreting skills but there is little information on how
variables that interpreters and clients believe influences interpreting actually influence comprehension of interpreted material. In relation to educational interpreting, there is almost no knowledge concerning how various interpreting variables might interact with characteristics of deaf students or with various learning situations such as different ages, grade levels, or class content (Kluwin and Stewart, 2001; Stewart and Kluwin, 1996).

An immense concern for interpreters and interpreter educators is how to best match the style or mode of interpreting to the clients’ preferences and signing skills such as ASL or various forms of English-based sign communication. Many mismatches tend to happen between interpreter skills and the needs or preferences of deaf persons, and interpreters are sometimes assigned to situations for which they are unprepared or unqualified (Schein, Stewart, and Cartwright, 1998; Seal, 1998). These situations leave both interpreters and their clients frustrated and lead interpreter educators to look elsewhere for new methods to improve the flexibility and skill of new members of the profession (Monikowski and Winston, 2003; Roy, 2000; Seal, 1998). This issue is primarily important in the classroom, where students often have heterogeneous language backgrounds and diverse signing skills (Harrington, 1999; Napier, 2002; Napier and Barker, 2003). In such settings, the educational interpreter faces the challenge of trying to sign in a way that fits with the students’ skills or in a manner satisfactory for the wide range of skills represented in the classroom. There are few studies that have considered this issue but unfortunately, there is a great amount of disagreement.

Fleischer (1975) observed the comprehension of a lecture by deaf high school students under four conditions: ASL interpreting after interpreters had been given background information about the lecture, interpreting without background information,
transliteration with background information, and transliteration without background information. He found that the interpreted conditions led to better comprehension than the transliteration conditions. Fleischer shared very little demographic information for his participants but this suggested that students' language fluencies might interact with the mode of communication but he did not have enough data to completely evaluate that possibility.

In another related study, Livingston, Singer, and Abramson (1994) discovered that, when deaf college students were placed in transliteration or ASL interpretation conditions, those in the latter group showed higher overall comprehension scores. Before testing, students were interviewed individually by either two or three bilingual Deaf adults to determine their Sign Preference and Communicative Competence in expressing and receiving either ASL or English-based signing. The students who had seen a lecture interpreted in ASL, those who were considered as ASL-oriented showed a considerable advantage relative to students who were designated as English-based signers. A reliable advantage was not acquired for transliteration of the lecture by the students who were perceived as English-based signers. Further, when a narrative presentation rather than a lecture was interpreted, neither comparison was reliable, making it hard to draw any concrete conclusions. The experiment by Livingston et al. also seems to be perplexed by the fact that different interpreters were involved in each of the fifteen testing sessions. Many large comprehension differences across those sessions were found and it was the only condition that was evaluated. It is impossible to know what effects, if any, such differences might have had on their results, but the variables clearly need to be cautiously controlled if results are to be thought as valid and reliable. No matter, with an overall
score of about 62 percent, the students in that study showed quite poor comprehension.

The studies by Fleischer (1975) and Livingtson et al. (1994) obviously support the use of a natural sign language (ASL) over the combination of signs with English grammar in transliteration or simultaneous communication during direct instruction. There is some contrasting evidence that transliteration can lead to high levels of comprehension and learning among deaf students when done by a skilled transliteration (Caccamise and Blasdell, 1977; Napier, 2002; Newell 1978) but this view is evidently in need of resolution. There is a common assumption that providing deaf students with access to lectures and classroom discussion through interpreting or transliteration gives them learning opportunities comparable to those of hearing students, but there is somewhat no information available to confirm that argument.

As for more recent studies on classroom interpreting, a group of researchers in 2004 investigated factors that contribute to classroom learning through sign language interpreting. Marschark, Sapere, Convertino, Seewagen, and Maltzen conducted three separate studies that addressed the basic questions of the extent to which deaf students understand classroom communication shared in sign language, how comprehension is related to their content knowledge as well as language skills and preferences, and the possible role of reading and writing ability and deaf students’ learning of classroom material. The Marschark et al. (2004) study reached several important conclusions with regard to sign language interpreting. Their data showed that it does not matter what sign language skills and preferences the student portrays, neither mode of interpreting is superior in terms of comprehension (Mayer and Akamatsu, 2002). This conclusion is aimed at only deaf individuals whose skills are within the range found among the
researcher's samples of deaf university students but still, the skills of the students they tested varied widely, from those who had been signing their whole lives, to others who learned to sign as adults. They believe that even though the findings show a persistent lack of influence of students' reported sign language skills, the comfort and ease of communication in a student's preferred mode might lead to heightened motivation, participation, and learning in settings different from the technical lectures.

Results from all three experiments are consistent with those of Fleischer (1975), who also found that interpretation and transliteration lead to comparable levels of performance in understanding a non-technical lecture. Also consistent with the findings of Livingston et al. (1994), comprehension performance following the non-technical lecture was around only 60 percent correct compared to hearing students' 87 percent correct performance. The fact that deaf students often have no way of knowing how much of an interpreted presentation they missed is the most troubling aspect of these results (Krinsky, 1990). This issue is almost never discussed publicly even though it is frequently talked about among interpreters, because it seems insensitive to suggest that deaf individuals may not be understanding high-quality interpreting. However, it is well known that there is significant variability in exposure to and experience with sign language among deaf persons so differences in receptive sign skills should not be surprising (Napier, 2002). Obviously, this issue needs careful exploration, especially when it concerns the education of deaf children and the frequently observed gaps in their academic and conceptual knowledge.

It is crucial to pinpoint that mediated instruction via sign language interpreting, regardless of how accurate it is, may put deaf students at some risk for academic failure.
Deaf students at the university level are often unprepared relative to hearing peers in terms of content and world knowledge (McEvoy, Marschark, and Nelson, 1999; Stinson and Kluwin, 2003) but the fact that they are unprepared compared to hearing students was not related in these studies to type of past instruction which brings the immediate demand of higher awareness and appropriate modification of communication by both instructors if those students are to have equal educational opportunities and equal access to information (Marschark, Lang, and Albertini, 2002; Winston, 1994). Of course, the observed academic problems of many deaf students do not lie entirely in the quality of the sign language interpreting they receive but this may be a huge part of the reason why they face certain academic challenges.

METHODOLOGY

The purpose of this study was to analyze how communication differences in an interpreted instructed classroom and a direct instructed classroom affected the amount of quality education a DHH student receives. There is insufficient information about the ability of DHH students to learn in the two environments, especially in the former where a sign language interpreter serves as a third party between the DHH student and a hearing teacher that does not sign. Data was gathered by means of classroom observations and questionnaires given to the interpreter, teachers, and DHH adults.

The observer is herself an individual who is hard of hearing with deaf parents and a native signer of American Sign Language. She also has had experience using Pidgin Sign Language, Total Communication, and English-based signs. She underwent her
education in inclusion classrooms without an interpreter, inclusion classes with an interpreter, day residential deaf classrooms, and residential deaf classrooms.

The participants in this study included a total of twelve eighth grade students, one interpreter, two teachers, and two DHH adults that received both types of instruction in the past. The seven male students and five female students all had some degree of hearing loss and no additional disabilities. The day residential city public school they attended reported that the hearing losses in all of the students were in the severe to profound range. From the observer's native background in sign language and assistive aids, she saw that nine out of the twelve DHH students wore hearing aids and eight of them communicated through American Sign Language while the rest relied on Pidgin Sign English. In the regular school day, these DHH students attended mostly mainstreamed direct instructed classes and a few inclusion classes with the help of an interpreter.

The DHH students were recruited through their school administrators who received a copy of the research proposal with a request form for permission to observe one full direct instructed class and one full interpreted class. There was a second request form for permission to survey the two teachers and that one interpreter. Correspondence was conducted through email and once the school gave their consent, the school assigned the researcher with two specific classes that would be suitable for this study. Along with the research proposal and request forms, there were also attachments that guaranteed confidentiality, clarified the subject's rights to refuse participation at any time without penalty, and explained the survey questions. The school, authorized the classroom observations with the understanding that the identity of the students would not be revealed. When the school gave authorization for the observations and faculty surveys,
the research took place on a convenient date. With the two DHH adults, they were randomly chosen from a deaf exhibition event.

The interpreter that was interviewed is a fifty two year old female with twenty three years of interpreting experience. The mainstream English teacher surveyed is a thirty four year old female with eight years of teaching experience. The questionnaire was given to the Science teacher that is a thirty seven year old male with twelve years of teaching experience. He speaks for himself in an inclusion classroom but with the aid of an interpreter. The two DHH adults that were assessed are in their forty’s and have been instructed in both types of setting. The American Sign Language interpreter was certified and served as a regular translator for the school. The two teachers were content certified to reach Science and English, and also extra professionally trained to educate specifically DHH students. The mainstream hearing teacher used the Total Communication approach but with a solid use of American Sign Language. Both DHH adults never wore hearing aids and are proficient users of American Sign Language.

The study was conducted in a day residential city school with a mainstream program for DHH students. All of the DHH students came from the same city district and commuted to school by bus on every active school day. The interpreted instructed Science class housed approximately thirty five students that included twelve DHH students. The desk arrangement was in rows with the hearing teacher and American Sign Language interpreter in front. The twelve DHH students sat in scattered locations and in front of the classroom for enhanced visibility during instruction. With the direct instructed mainstreamed English class, the same twelve DHH students without their hearing peers sat in their individual desks but in a circular set up where they could see
each other. The mainstream teacher walked around and/or sat in the middle of the circular arrangement during instruction. The two DHH adults were brought to a corner table to answer the survey questions.

The observer sat in a quiet corner of both classrooms at the school under investigation and first noted the desk arrangement and where the teacher spent most of the lecture time. A primary focus was where the interpreter did the translating and how well. She paid attention to how both teachers communicated to the class and which of the DHH students had the help of hearing aids. She recognized the type of sign style each student conversed in and how they tried to communicate with their hearing peers. She also watched the patience level in DHH students in both classrooms. Analysis of student comprehension and accessibility of instruction are based on these rough observation notes.

RESULTS

Based on the observations conducted in this study, the students did not understand every bit of information through interpreting. They showed discomfort at times and often kept quiet about it. When one DHH student tried to interrupt the interpreter for clarification, the connection was not made and the attempt seemed worthless. These behaviors and the differences in the sign skills of every student account for some global loss of information or cohesion during lectures in both settings.

The one interpreter interviewed believes that interpreting is vital in the education of DHH students because it makes way for communication thus comfortable learning. When she interprets, the DHH students do not completely understand word for word but
that they try their best in getting the complete message. Everyone speaks in their own unique ways even those that are in the same family circle so the way she signs will never match the way every DHH student signs but she tries to stick with standard signs. She believes that being certified in interpreting makes much of a difference in helping DHH students understand what is being conveyed because this is how they are helped in such situations. It helps to be familiar with the subject matter for quality interpreting such as technical words and ancient stories.

She expressed two problems with the concept of interpreting for DHH students that she has often noticed throughout her entire interpreting career. Interpreting is not the only answer but a worthwhile accommodation and there needs to be a multi-approach that will cover every need including social identity and information input. She emphasizes that interpreting is not the only solution in providing full educational access for DHH students and there has to be more accommodations on top of interpreting in order for this to happen. She notices how interpreting causes learning difficulty in young DHH students like lag time and attention shifting which leaves them constantly frustrated. Specific meanings, unfamiliar signs, exhaustion from shifting and fast paced lectures, and lack of emotion from the interpreter are several problems that she feels are most typical. She thinks that several things need to be enhanced with interpreting for the education of DHH students and they include a heightened sense of sensitivity towards the language requirements of each student, a more personal connection with each student to see where their preferences really stand, changing interpreters to see which fits the best, clearly involving every student in on what other students had to say to avoid shifting fatigue, and expressing appropriate tone of the teacher. Finally, she suggested a
conversation between the interpreter and the students to explain why the interpreter is there so that everyone is comfortably aware.

The mainstream English teacher uses Total Communication with her DHH students since several of them rely on some auditory means aside from the use of American Sign Language. She feels that using two languages at once can cause confusion which may hinder complete learning. Nonetheless, using whatever languages benefit all of her students should continue so no one is at a loss. She notices how her students question the meaning of certain signs because of the switching between English-based signs and ASL.

She agrees that being certified to teach a content area improves learning in DHH students despite such language barriers because she is able to explain concepts in more depth. Students still struggle with reading comprehension due to the different language approaches used in the classroom. She recommends a note taker and a c-print system where printed text of spoken English is displayed in real time. Students need constant exposure to the English language so they can notice the major structural differences in any other language including sign language. Every student has a language style of their own so it is already an obstacle trying to understand the teacher's language style on top of popular English. They face this challenge amongst each other in the classroom and on a daily basis. They tend to miss the true meaning of certain signs and misunderstand the appropriate structure of English. She believes that by having multi-accommodations in language development will enhance learning in DHH students especially in a mainstream setting.

The Science teacher speaks for himself in an inclusion classroom but with the aid
of an interpreter. He asserts without hesitation that it is more than a requirement to be certified in a content area before students are able to receive complete and worthwhile instruction. If there was no interpreter to translate for him and his DHH students, he believes that there would be no way to make sure his DHH students understood what occurs in the classroom except to have them read related materials. He thinks it would be exceptionally convenient if everyone involved in an inclusion classroom knew how to sign so that learning could be a comfortable experience for all considered. It is unfair that the two types of students have to be segregated with the presence of an interpreter and a whole classroom that do not understand the world of sign language. He believes that all hearing children should at least try to get an idea what it is like to rely on any second language and since sign language is one of the most popular behind English, they should be able to practice it as well. It is no surprise that there are and will be people with a hearing loss in every part of the world including classrooms.

He attempts to promote constant interaction in his classes by putting a DHH student with a hearing student despite the fact that there is only one interpreter to speak for everyone. The interaction is often a struggle but he notices some positive outcomes such as increased enthusiasm. The role of interpreting in his classes is favorable but an incomplete process. His DHH students are often left in the dark by always focusing on the interpreter without much space to explore otherwise. However, he is fortunate to know that his DHH students are given the opportunity to learn the same materials as their hearing peers. Not only they miss full participation, they also lack inner satisfaction that will always set them back. He hopes that there will be new approaches to use in the classroom that will support all the students as one and not in separate groups.
The two DHH adults surveyed are in their forty’s and have been instructed in both types of setting. In an interpreted classroom, they both received the rewards of having an interpreter but saw that a lot of information was misinterpreted. They both felt that they got more out of their education in a direct instructed classroom. The forty two year old DHH female was mainstreamed all of her life throughout college and signs proficiently in ASL. The forty eight DHH male was mainstreamed until the end of high school then in direct instructed classes throughout college. He also signs expertly in ASL.

Both DHH adults were grateful to have had an interpreter rather than be left without one but communication was always patchy. The teacher would say something and the interpreter translated it in a completely different point of view or without the intended tone. Having an interpreter often made them feel like a challenged person that needed extra help and this caused discomfort for everyone involved in the classroom. The interpreter also did not express what they wanted to say quickly or accurately enough so they almost always felt behind and embarrassed. They did not always understand dialogue made by the interpreter such as unclear signs, unknown signs, incorrect interpretations, misunderstandings, and confusing English versus ASL signs. They both felt that they did not interact successfully with their hearing peers mainly because of communication discomfort. They would have had an positive learning experience if they had been placed strictly in direct instructed classrooms or they had had more accommodations than an interpreter. They suggested dropping the interpreter and for the teacher to sign but the teacher must always remain without bias. They recommended that all schools provide a workshop on deaf culture awareness to enable every student, regardless if they are hearing or not, the knowledge of what being deaf may be like and
understanding the specific services that DHH individuals may require such as the use of interpreters. They agreed that it is an ongoing process for the discovery of valuable communication strategies in the classroom but DHH students should not have to wait for quality education.

In direct instructed classrooms, both DHH adults felt that they had equal access to their education because communication was from one person to another instead of a third party such as the interpreter. Some signs were missed or unknown but they were more satisfied with dialogue input when spoken to directly. They suggest that teachers check with their students on certain signs whenever they are questioned and confirm on a new sign in agreement with the rest of the class. They also believe that every teacher should be extra sensitive to the language abilities and preferences of DHH students so that communication can remain fluid especially during instruction. They do not appreciate having lost precious time in the classroom just simply because their language needs were suppressed. They feel more involved with the other students because everyone speaks for themselves without any distress. Students are able to make their voice clear without worrying about whether or not their tone was interpreted correctly. It is all in the teacher’s attitude if they really cared deeply enough about how much gets across and the very fact that sign language evolves over time.

DISCUSSION

The most obvious result that emerged from the observational data was that students lost comprehension of class events in the mainstream Science class. It was found that when the DHH students did not understand what was happening in the mainstream,
often their first impulse was to look to other students for visual verification of what to do. This led them to copying without comprehension. As other students in the class did not always have the right answers, the DHH students needed to trust their own knowledge. It is common to stress the importance of paying ultimate attention to the interpreter but we also realize that complete attention is impossible. Requesting clarification is an important skill for DHH students to learn. We know that it is the teacher’s job to explain missed information, not the interpreter’s. If there was a sign that the DHH students did not understand, they try to request clarification from the interpreter. The students were typically faced with a three-part challenge: who, when, and how. The ‘who’ means going to the teacher for information related to class and to the interpreter for sign language information. The ‘when’ means finding the right time during class to do this and the ‘how’ concerns ways of appropriately interrupting. They are always faced with this type of responsibility that often times, they would just give up.

Another persistent issue is how every one of the DHH students made different sign choices and had different signing styles. This is obviously relevant for younger children, who have only experienced one or two teachers and whose families are just beginning to learn sign. Their families may be deaf and skilled in sign language but they are used to their own style. There was a tendency for these students to become rigid in their sign language vocabulary in the classroom. Interpreters only exposed the DHH students to a limited variety of sign styles and vocabulary choices. This may explain why the DHH students were left frustrated.

The results of this study indicate the need for multi-accommodations in both settings. In a direct instructed classroom, the sign styles that are shared do not always
match. Comprehension gaps are more frequent in an interpreted instructed class not only due to various sign styles but simply because a DHH and a hearing individual will never have completely matching needs. Hearing students have had enough practice with learning through auditory means since birth which makes it second nature for them but this isn’t the case for the DHH student. The DHH student never gets comfortable with a solid language foundation from the very start. The DHH student slowly adapts to a preferred sign style only then to find out that there are many other styles needed to survive. It already becomes a challenge getting accustomed to them in direct instructed classes and this becomes more of a job otherwise. DHH students need early exposure to English not only through lectures but through print where they can feel extra confident in the chief language. Having an interpreter is without doubt a useful tool in keeping DHH students up to date but it further distorts development of pure learning and that is in the proficient use of English. The ideal situation in an ideal world would be to require that every student sign in classes up to the end of high school. This would without question put all DHH students up front with their hearing peers. Finally, every student would be granted full access to quality education that does not set them apart from each other.
REFERENCES


APPENDICES

SURVEY QUESTIONS FOR THE INTERPRETER

Do you think interpreting is important in the education of DHH students? Why?

Do you believe that when you interpret, the DHH students completely understand you? Why do you think so?

Do you believe that the way you sign matches the way DHH students sign? Why do you think so?

Do you believe that being certified in interpreting makes much of a difference in helping DHH students understand what is being taught?

Do you believe that familiarity with the subject matter helps you to interpret better? Can you give some examples?

Are there any problems with the concept of interpreting for DHH students that you may want to share? What are the benefits?

Do you believe that interpreting is the ONLY solution in providing full educational access for DHH students? If yes, why do you think so? If no, what are your suggestions?

Do you believe that interpreting causes learning difficulty in young DHH students? For example, do lag time and attention shifting cause problems?

What kinds of information, if any, do you think DHH students miss in the interpreting process?

What do you think needs to be improved with interpreting for the education of DHH students?
SURVEY QUESTIONS FOR THE TEACHER

If you sign and speak while you instruct, do you believe that your DHH students understand you completely? What evidence do you have that they do or do not?

Do you believe that being certified in a content area improves knowledge input in DHH students despite language barriers?

What kinds of language barriers do you observe in your classrooms? How do you think they affect access to education?

If you speak without sign and there is no interpreter in the classroom, what do you do to make sure that your DHH students understand what you or others in class are saying?

Do you have suggestions for improving communication between the DHH students and the rest of the classroom including the teacher?

Do you experience any obstacles in providing DHH students a full education in terms of different languages as well as differing signing styles?

How do you promote interaction between successful DHH students and other students inside the classroom if there are language barriers?

If you do not sign with your DHH students, how do you view the role of interpreting in facilitating communication? What have you observed that supports your opinion?

If you sign very well, do you believe that your DHH students understand you completely? If they do not, what would you suggest for improving the situation?

What kinds of information, if any, do you think DHH students miss in your classes?
SURVEY QUESTIONS FOR THE DHH ADULT

Interpreted Classrooms

Was the interpreter worthwhile or it was more of a difficulty? Why?

Did you understand the interpreter well enough that you felt that you were getting a full education? Why or why not?

Did you feel that the use of an interpreter has negatively affected your education? If yes, why?

Did you interact well with the other students because of the interpreter? Why or why not?

Do you wish that things were different when you were getting your education with an interpreter? How?

What communication problems did you face with the interpreter if any?

Do you have any suggestions as to how communication can be improved in interpreted classrooms of DHH students?

Do you believe that the interpreters in your life understood exactly what you wanted to say?

Do you believe that your interpreters could have done a better job with their signing skills? How?

Non-Interpreted Classrooms

Do you feel that you understood your teachers completely? Why or why not?
Do you wish your teachers were more involved in better communication strategies? If yes, what are your suggestions?

Do you feel that your teachers understood exactly what you wanted to say? Why or why not?

Were your teachers involved in making sure communication was clear between you and the other students?

Do you believe that your teachers could have done a better job with their signing skills? How?
CONSENT TO PARTICIPATE IN RESEARCH - INTERPRETERS

Interpreted Instruction and Direct Instruction

Darlene Marie De Siervi
tide@tmail.com

I am investigating the comprehension of incoming instruction of deaf students. I am comparing interpreted vs. direct instruction.

I will give you a questionnaire related to completeness of learning by deaf and hard of hearing students. You have the option to answer them in person or through electronic mail.

These questions ask about your educational philosophy and practices. Because the number of respondents is small, there is a risk that individual response could be inferred from the final report. This risk will be minimized by maintaining confidentiality of study respondents.

Your identity will not be revealed since all responses will be confidential.

__________________________________________________________________________

Investigator Date

I understand the risks and agree to participate in this research. I also understand that I may cease my participation in this study at any time.

__________________________________________________________________________

Participant Date
CONSENT TO PARTICIPATE IN RESEARCH - TEACHERS

Interpreted Instruction and Direct Instruction

Darlene Marie De Siervi
tide@tmail.com

I am investigating the comprehension of incoming instruction of deaf students. I am comparing interpreted vs. direct instruction.

I will give you a questionnaire related to completeness of learning by deaf and hard of hearing students. You have the option to answer them in person or through electronic mail.

These questions ask about your educational philosophy and practices. Because the number of respondents is small, there is a risk that individual response could be inferred from the final report. This risk will be minimized by maintaining confidentiality of study respondents.

Your identity will not be revealed since all responses will be confidential.

________________________________________________________________________

Investigator Date

________________________________________________________________________

I understand the risks and agree to participate in this research. I also understand that I may cease my participation in this study at any time.

________________________________________________________________________

Participant Date
CONSENT TO PARTICIPATE IN RESEARCH – DHH ADULTS

Interpreted Instruction and Direct Instruction

Darlene Marie De Siervi
tide@mail.com

I am investigating the comprehension of incoming instruction of deaf students. I am comparing interpreted vs. direct instruction.

I will give you a survey that asks questions in regards to how you feel about the two types of instruction and what suggestions you may have in boosting quality communication in deaf and hard of hearing classrooms.

You have the option to answer them in person or through electronic mail. These questions ask about your educational philosophy and practices. Because the number of respondents is small, there is a risk that individual response could be inferred from the final report. This risk will be minimized by maintaining confidentiality of study respondents.

Your identity will not be revealed since all responses will be confidential.

Investigator

Date

I understand the risks and agree to participate in this research. I also understand that I may cease my participation in this study at any time.

Participant

Date