THE OPINIONS OF THE ADULT DEAF COMMUNITY TOWARDS METHODS OF COMMUNICATION IN THE EDUCATION OF DEAF CHILDREN

by

DAVID ALAN STEWART

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Department of Educational Psychology And Special Education

The University of British Columbia
2075 Wesbrook Place
Vancouver, Canada
V6T 1W5

Date: 15 September 1982
ABSTRACT

The purpose of the study was to survey the adult Deaf and document their viewpoints on appropriate methods of communication for deaf children. A review of the literature revealed that different methods were being used in the education of the Deaf. Sign language is one of the methods that is presently being used as a means for instruction. However, it is noted that the sign language utilized by the Deaf within the Deaf community is different from signs being used in the classroom. Furthermore, input from the Deaf community is not a factor in determining how signs are to be incorporated into the framework of our educational system. These findings gave directions for a survey of the Deaf community.

A questionnaire was designed, pilot-tested, and then administered to 162 Deaf adults in the Greater Vancouver metropolitan area. The questions were concerned with viewpoints on sign language and its role in the development of a deaf child's communication. Special attention was given to the comparative roles of Deaf signs and English signs.

Data analysis revealed the overall expectations of the Deaf community of deaf children's methods of communication. The consensus of the Deaf was that sign language should be learned at an early age and before speech; language should be acquired bilingually with Deaf signs and English signs forming the basis
of the two languages; and deaf children should be able to obtain a bilingual education and have the opportunity to be able to converse in either language with teachers of the Deaf. Finally, members of the Deaf community should be involved in the formulation and implementation of policies in education of the Deaf.
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CHAPTER I: INTRODUCTION

Education of the Deaf is currently experiencing the effects of changes in methodology that were initiated during the late sixties and are still continuing at the present time. The two major changes that have occurred are the trend away from an oral approach towards total communication and the utilization of sign systems for classroom instruction (Jordan, Gustason, and Rosen, 1979). Although, both are not historically new concepts they do represent an area of profound potential. Both changes are interrelated and their impact is ultimately dependent upon the role sign language will play in their development. Thus, an understanding of sign language must precede an assessment of the outcome of the total communication approach and the value of sign systems.

Sign language is a visual form of language that has been developed and utilized by the Deaf for interpersonal communications (Stokoe, 1981). The actual expression of sign language is accommodated by a form of manual communication. This involves movements of the hands, fingers, body, and facial features which allow the expression of language. Symbols, formed by the hands, are called signs and are analogous to the words and phrases of a spoken language. Due to the visual aspects of reception and the articulatory dynamics of manual movements, the development of sign language has incorporated
these features into a grammatical structure that is unique and
distinct from counterparts within the framework of spoken
languages (Stokoe, 1981).

A deaf person can be defined as a person "whose hearing is
disabled to the extent ... that precludes the understanding of
speech through the ear alone, without or with the use of a
hearing aid" (Moores, 1978a, p. 5). Since spoken languages are
auditorily dependent the nature and degree of a hearing loss
will influence the development of a spoken language. Hence, for
a congenitally deaf child there is often a direct cause and
effect relationship between his own deafness and his ability to
speak and comprehend a spoken language. To comprehend speech
deaf children often will have to depend upon speechreading in
the absence of other visual cues. A study by Conrad (1979)
showed that the average deaf school leavers had speechreading
abilities that were no better than their average hearing peers.
Furth (1966) calculated that amongst deaf adults only 12 percent
were linguistically adept in a spoken language and a mere four
percent were skillful speechreaders or speakers. Further, it
has been shown that deaf children generally have a low level of
literacy (Wrightstone et. al., 1963; McClure, 1966; Boatner,
1967). These studies show that the learning of a spoken
language through the use of speech and audition is a formidable
task for deaf children. Furthermore, Brill (1969) in a study
conducted on the academic achievement of deaf children concluded
that communication at a young age is more feasible when a deaf child is exposed to signs and is not limited to English. It is not surprising then that for many deaf individuals sign language is the first language to be learned.

Another important aspect of sign language is that it has a cultural entity (Charrow and Wilbur, 1975). Due to the difficulty in conversing orally many Deaf people gravitate towards the Deaf community mainly for the ease of communication which it offers (Jacobs, 1974a, 1974b). Sign language allows its users to integrate into this community. Through signing these group members are able to assimilate the social characteristics peculiar to a community bound by deafness and the experiences this entails. Sign language, culture, and the Deaf community are three social phenomena that are nurtured by the need to fulfill those basic necessities unique to people who cannot hear (Jacobs, 1974a, 1974b; Baker and Padden, 1978; Kannapell, 1982).

On the obverse side of the coin, educational institutions are designed to inculcate approved social behaviours into society's youth (Burrello and Sage, 1979). They draw upon the mores, beliefs, and values of the dominant culture to ensure that a uniform strategy is applied in all schools. Teachers are cast as role models upholding the cultural ingredients which identify the community in which they reside. Their language is acceptable both to parents and other citizens. As another
minority group, it would appear that attempts are made to assimilate the Deaf through language and culture into the dominant Hearing society. Generally educational institutions do not allow deaf children full opportunity to experience sign language as a part of their education. Certainly, sign systems are utilized as a teaching methodology in many programs (Jordan et al., 1979) but these systems are not representative of the language used within the Deaf community (Erting, 1978; Kannapell, 1982). Consequently, a deaf child's education is largely based on the characteristics of the Hearing world. This point becomes critical when viewed in the context of present changes in education of the Deaf with respect to language usage.

Total communication gained popularity in education of the Deaf as an alternative to oralism. Whereas oralism focused on aspects of communication such as listening skills, speech, and speechreading, total communication combined the oral approach with other visual aspects. Indeed, signing was viewed as both an adjunct to and an integral part of the total communication approach.

In adhering to the total communication approach educators had to determine a method of signing as a standard for both students and teachers. Here, the choices were either to adopt the sign language used by the Deaf or to utilize one of various types of sign systems. Essentially sign systems refer to signing in a spoken language word order. Thus, unlike a sign
language such as American Sign Language which has a grammatical structure vastly different from English (Stokoe, 1960), sign systems follow the grammar of a spoken language. In other words, sign systems visually represent the auditorally based language, and as such they are not regarded as languages per se (Bornstein, 1973; Wilbur, 1979). Nevertheless, due to their proximity to spoken languages sign systems were chosen as the proper means of signing in the classroom.

From the very beginning there have been doubts as to the validity of this choice (Woodward, 1973a; Battison, 1974; Stokoe, 1975; Stevens, 1976; Kluwin, 1981b). Briefly, the over-riding concern of many educators, linguists and researchers alike has been the feasibility of utilizing a visual mode to represent an auditorally based language. However, although the National Association of the Deaf in the United States endorsed the philosophy of total communication (Pahz and Pahz, 1978), there was no similar support given to the use of a sign system as a means of communication in the classroom.

To reiterate, sign language is used by the signing Deaf as their primary means of communication (Kannapell, 1982). Until the late sixties, signing had not seen much use as a method of communication in the education of the Deaf (Vernon and Makowsky, 1969). With the re-emergence of signing as part of an appropriate method it was determined that sign systems with an auditory language based grammar were more desirable for
classroom use than sign language. Sufficient documentation of the response of Deaf adults to the institution of sign systems in the education of deaf children cannot be found. This is ironic considering that Deaf adults are the primary consumers and are the products of our educational system. The views of Deaf adults regarding method of communication in the classroom are worth investigating; the results could assist in the future development of signing within schools and programs for the Deaf.

More specifically, in consideration of the literature and present day educational policies with respect to signing in total communication programs it is of interest to know the mode of communication the Deaf community feels a deaf child should use to acquire language, the language a child should use for interpersonal communication in the classroom, and the similarities in communication that should exist between deaf students and their teachers.
STATEMENT OF THE PROBLEM

Central to this investigation were the views of the adult Deaf community pertaining to the method of communication used in total communication programs. The objective of the study was to determine the extent to which sign language used by Deaf adults (Deaf signs) or sign systems (English signs) would be chosen by Deaf adults as being more appropriate for the instruction of deaf school aged children.

The dominant questions investigated were as follows: Do the views of Deaf adults support the implementation of English signs in the classroom? How do Deaf adults see the roles, relative to each other, of Deaf signs and English signs in the educational development of a deaf child?

Additionally, further questions addressed possible factors related to individual viewpoints. For example, what is the relationship between an individual's preferred method of communication and the method s/he suggested for deaf children? What demographic variables are related to an individual's stated preference? Is captioned television exerting an influence on one's perspectives? Is involvement in the Deaf community related to one's opinion? It was hoped that answers to these and other related questions would provide an indication of the views of the adult Deaf community on methods of communication, thereby enhancing our knowledge about the acceptability of sign language.
DEFINITION OF TERMS

American Sign Language: is a visual-gestural language created by deaf people (Baker and Cokely, 1980), and is used mostly in the United States and Canada. Known also as ASL or Ameslan, it is the most widely studied sign language and therefore received considerable attention in this document. An in depth description of ASL is given in the review of the literature.

Deaf community: consists of a group of people sharing similar cultural values, sign language, and attitudes towards deafness. Although largely composed of Deaf people, hearing individuals may also belong to this community. In this situation these individuals must meet the following criteria as stated by Higgins (1980), "(1) identification with the Deaf world, (2) shared experiences that comes of being hearing impaired, and (3) participation in the community's activities."(p. 38)

Deaf culture: is a reference to a group of activities and a set of learned behaviours characterized by those Deaf people who use sign language as their primary means of communication. Members of the Deaf culture "behave as Deaf people do, use the language of Deaf people, and share the beliefs of Deaf people towards themselves and other people who are not Deaf" (Padden, 1980, p.93).
Deaf person: "one whose hearing is disabled to an extent ... that precludes the understanding of speech through the ear alone, without or with the use of a hearing aid" (Moores, 1978, p. 5).

Deaf signs: in the context of this study, refers to the sign language used by the Deaf adults within the Deaf community. The use of this term in place of a more formal designation such as American Sign Language, is due to the greater familiarity of Deaf adults as to the meaning and intent of the former expression.

English signs: refers to a method of signing that has signs expressed in English word order.

Hard-of-hearing: "one whose hearing is disabled to an extent ... that makes difficult, but does not preclude, the understanding of speech through the ear alone, without or with a hearing aid" (Moores, 1978, p. 5).

Hearing impaired: a categorical term that encompasses both the Deaf and the Hard-of-hearing. That is, it can be used to refer to anyone with a hearing loss.

Total communication: an approach in education of the Deaf that uses both visual and auditory cues to facilitate communication with deaf children.

Sign language: refers to a method of manual communication that is used by the Deaf. It is a language that has undergone evolutionary development based upon its functional benefits as a
means for communication.

Sign system: is one of a number of methods of manual communication. It refers specifically to a method of signing that has been developed as a means of representing a spoken language. Its grammar is likewise based upon a spoken language.
CHAPTER II: REVIEW OF THE LITERATURE

The purpose of this chapter is to present a review of the literature related to sign language and sign systems. First, a descriptive review is given and this is followed by an examination of some of the educational and psychosocial aspects of signing. Finally, a review of the research associated with captioned television is presented since it was felt that this area might also significantly influence the use of sign language and/or sign systems in the classroom.
SIGN LANGUAGE

For a thorough comprehension of the implications of this study it is pertinent to understand the unique features of the native sign language of the Deaf. Due to the emphasis in contemporary literature, American Sign Language (ASL) is chosen as being representative of a native sign language with all due respect to and acknowledgement of the current attitude symbolized by the Canadian Cultural Society of the Deaf favouring the term Canadian Sign Language (Lambert, 1981). The intent here is to provide an overview of research on ASL. For an in depth description of the syntax, vocabulary and features of ASL the reader is referred to the work of Stokoe et.al.(1976), Stokoe (1960, 1971, 1972, 1976, 1978, 1980, 1981), Fant (1972), Markowicz (1972), Friedman (1977), Baker and Padden (1978), Wilbur (1979), and Klima and Bellugi (1979).

ASL, also known as Ameslan, is the third most used language in the United States (Wilbur, 1979). The present day form of ASL is thought to be related to the French Sign Language (FSL) brought to the United States by Thomas Gallaudet and Laurent Clerc in the early 19th century as a means for teaching deaf children (Stokoe, 1971; Friedman, 1977; Hoemann, 1978). Woodward (1978) however, does not see ASL as a language directly derived from FSL, but rather as a creolization of the FSL signs and whatever signs that were already in use before Gallaudet and Clerc began their work.
At this point a distinction between sign language and sign systems must be made. Sign systems, in North America, are a result of borrowing signs from ASL, creating new ones and using these signs in a grammatically correct English word order. Sign languages on the other hand are considered as distinct languages which consist of a grammar and lexicon which is unique in its visual emphasis and the articulatory dynamic constraints that act upon its expression and reception (Friedman, 1977; Wilbur, 1979; Klima and Bellugi, 1979; Stokoe, 1981). In contrast, sign systems conform to the grammar of the auditory-based language and are not considered a separate language (Bornstein, 1973).

Within the Deaf community a further distinction is made. Here, ASL is culturally based and is used among native and fluent signers (Markowicz, 1972; Stewart, 1981). This observation is important in appreciating the significance of the role ASL has had in the education of the Deaf. Sign language was used as the method of communication when the first American public School for the Deaf was established in 1817 (Bender, 1970). For the next fifty years sign language flourished and enjoyed a respectable status. However, with the appearance in the United States, of the first oral residential school for the Deaf in 1867, oralism gradually took over and became the officially preferred method of communication by the end of the nineteenth century (Pahz and Pahz, 1978). Oralism, which is a means of teaching through the use of residual hearing and
lipreading skills, was promulgated to such an extent that sign language was "treated as unsuitable behaviour, something to be ashamed of or repressed" (Stokoe, 1981, p. xi). This negative attitude is still apparent among today's oralists who, like Van Uden (1970), believe that sign language is inferior to the language of the hearing majority and that deaf persons who receive no oral support "will never reach higher communicative codes than signs and some attempts at lipreading and speaking" (p. 75).

Although, the Deaf have continued to use sign language as a means for interpersonal interactions and have denounced attempts to denigrate their language, educators have been slow in their efforts to examine sign language as a potentially effective educational tool (Erting, 1981).

The barrier that has prevented sign language from being accepted as an appropriate mode of communicating consists of two major false premises. One of these is that sign language is not a language comparable with spoken language (Kannapell, 1975a). The other false premise is the belief that there is no need to involve the Deaf community in the formulation of teaching philosophies and strategies (Reeves, 1975). Over the past 100 years the scant attention that sign language has received from educators was equally matched in the opposite direction by members of the Deaf community who recognized sign language as their native language and have come to acknowledge the
significance of its role in their lives (Gagnon, 1981).

It is only within the last twenty years that attempts have been made by linguists and sociologists to grant sign language a status on a par with spoken language. Through an investigation of ASL, Stokoe (1960) produced the first description of ASL. Here the linguistic characteristics of ASL and its existence as a cultural entity were recognized:

...the cultural system which employs certain of the visible actions of the face and hands, combines them in recurrent sequences, and arranges these sequences into systematic distribution in relation to each other and in reference to other cultural systems (p. 30).

Stokoe's work in this regard was instrumental in stimulating further investigations and analyses. Stokoe, Casterline and Croneberg (1976) published their first comprehensive list of ASL signs in the "Dictionary of American Sign Language". Additionally, Stokoe examined the phonology, morphology, semology, syntax, iconicity and phonetic and phonemic notation of ASL structures (Stokoe, 1960, 1970, 1972, 1980, 1981). His description of sign language provides the following guideline for researchers...

...sign language is quite like English or any other language. Its elements contrast with each other (visibly instead of audibly). They combine in certain ways, not in others. These combinations, signs, "have meaning" as words or morphemes do. Constructions combining signs like constructions combining words, express meaning more completely and complexly than single signs or words can. These constructions or syntactic structures are systematic rule-governed structures. But there is a unique set of rules for making sign language constructions just as there is for making standard English constructions, non-standard
English constructions or the construction of any language (1981, p. xv).

In other words sign language was no longer regarded as being pantomimic or iconic in nature, as many linguists and laymen alike had supposed (Bonvillian et. al., 1976).

Consequently, linguists began to explore the possibility that sign language was acquired in a similar manner to spoken languages. Studies to date verify that deaf children of deaf parents acquire ASL in developmental stages similar to those that hearing children go through as they acquire a spoken language (Schlesinger and Meadow, 1972; Bellugi and Klima, 1972; Nash, 1973; McIntire, 1977, Hoffmeister, 1978; Kantor, 1980). For example, Bellugi and Klima (1972) showed that semantic relations learned in spoken English were also learned in the early stages of ASL acquisition. Schlesinger and Meadow (1972) revealed two aspects that are similar in both hearing and deaf children. These are the overgeneralization of the referential aspects of signs and words and the holophrastic nature of some signs or words (that is, using one sign or word in place of a whole phrase). Furthermore, it was found that when signing is the method of communication used then the early developmental stages will display an interaction between infants and deaf parents that is relaxed natural, and communicatively effective (Moores, 1980). Considerations were also given to a child's feeling of himself and his environment and the need to connect these feelings with native signs (Cicourel and Boese, 1972).
Researchers were also interested in determining the effects of early acquisition of sign language upon educational achievements. Prior to the mid sixties the majority of schools and programs for the Deaf did not advocate the use of signing as a method of communication, hence most studies were carried out with deaf children of deaf parents who were compared to deaf children of hearing parents. Results of these studies showed that deaf children of deaf parents had higher academic achievement, better language abilities, better social adjustment and displayed similar speech development to deaf children of hearing parents (Stevenson, 1964; Stuckless and Birch, 1966; Meadow, 1968; Brill, 1969; Vernon and Koh, 1970). Vernon and Koh (1971) compared oral pre-schoolers to deaf children with early manual communication exposure and no preschool. The latter group were found to be superior academically. These results indicated that sign language may function in a similar fashion to spoken languages.

However, Nix (1975) has cautioned against the full acceptance of these above studies supporting educational programs using signs. In an examination of the methodologies in all of the above studies except Brill's he found experimental deficiencies that may invalidate some of the conclusions made. Briefly, two of his claims were that some studies were not designed to compare the effectiveness of programs employing signs (total communication) to other approaches and that faulty
research procedures failed to control possible confounding variables.

It must also be pointed out that not all studies indicated students with sign language skills are superior to those who have auditory based skills only. One study by Carson and Goetzinger (1975) revealed that a group using signs, lipreading, and audition did not perform better on a nonsense syllable learning task than non-signing counterparts. They implied that the method of communication may not be a significant education variable.

Comparison of oral and manual communication methods is not uncommon. Signing by itself is not considered a method and is being encouraged only in conjunction with the philosophy of total communication. However, skeptics persist in charging that signing is detrimental to the acquisition of speech and English. The oral philosophy of the Alexander Graham Bell Association for the Deaf, for example, rejects signing as being incompatible with efforts to maximize speech skills (Pahz and Pahz, 1978).

The limitation that signing supposedly imposes upon speech skills is shared by many who believe that signing is an 'easy way out' and that most deaf children would opt for sign in lieu of speaking (Mindel, 1972; Van Uden, 1970; Reeves, 1977). Available research does not substantiate these claims. Rather, exposure to and use of sign language does not have a deleterious effect on speech or speech reading skills (Montgomery, 1966).
Moores and his associates (1973a, 1973b, 1978b) have conducted research related to the receptive and expressive abilities of groups of children taught by the oral-aural method, the Rochester method (fingerspelling and speech), and total communication method. The results indicated that the simultaneous use of speech and signs led to higher scores than the use of sound alone or sound and speechreading only. They concluded that the use of signs enhanced receptive ability. In addition, there was no difference in vocal articulatory skills which could be attributed to any of these methods.

Pedagogically, these results indicated that sign language is not detrimental to the development of speech. However, research in this area is minimal and studies are needed that relate means of communication and the cognitive aspects of processing information (Tomlinson-Keasy and Kelly, 1978; Watts, 1979). Additional research is also required to describe those processes of encoding that allow information to be absorbed and grouped into semantic categories and later transformed into appropriate syntactic structures (Abbott, 1975; Hasenstab and Bevilacqua, 1980). Possibly, the human capacity to encode linguistic structures into sound signals is an evolutionary result which ontogenitically follows the ability to encode a linguistic sign system (Stokoe, 1980).

Another milestone in the advancement of ASL as a 'true' language was the invalidation of claims depicting ASL as being
wholly iconic and universal in nature. Experiments by Hoemann (1975) concluded that only a small percentage of ASL signs have transparent meanings. Descriptions of iconic signs also confirmed the large extent to which signs are arbitrary (Mandell, 1977). Frishberg (1975) reporting on the historical changes in ASL, showed that the trend away from iconicity has led to more incorporation of symmetry (two handed signs instead of one), centralization (hands moving up from the waist), and simplification of signs in front of the face (one hand instead of two hands). The creation and variation of signs is also governed by grammatical processes and phonological features inherent within the language rather than by direct reference to the referents of the signs (Woodward et al., 1976; Klima and Bellugi, 1979; Bellugi and Newkirk, 1981). The universality of sign language is also a myth that has served to restrict acceptance of ASL. This long held notion was disproved when it was demonstrated that fluent signers of ASL experienced great difficulty and frustration when exposed to a foreign sign language (Battison and Jordan, 1976; Jordan and Battison, 1976).

Although the state of the art in sign language research is relatively new and not well advanced (Stokoe, 1980) studies thus far have indicated a legitimate concern for and appreciation of ASL. Investigations have been limited to specific aspects in an attempt to obtain a more thorough explanation of the nature of sign language. Examples are: exploration of the mutability of
verbal signs such as the alteration of verbs to reflect changing syntactic and semantic aspects (Fischer and Gough, 1978); acquisition of pronominal classifiers in ASL during early childhood (Kantor, 1980); design of a model under which the syntax of ASL can be examined (Ingram, 1978); the constraints on sign language imposed by human vision (Siple, 1978); the development of a syntactic theory for describing ASL sentence structures (Padden, 1981); and the examination of language universals during a deaf child's first years, preschool, school years, and adult life to determine implications for communication systems (Tervoort, 1980).

The efforts of sign language researchers has resulted in an increase in acceptance and use of sign language by parents, educators, and professionals involved in the field of deafness. A learner of sign language is usually faced with making a decision whether to learn ASL the language of the Deaf or to learn one of the sign systems, thus, conforming with educational sign policies. Gustason (1973), expressed concern that variation among sign systems might have an adverse effect on efforts to encourage people to accept signing. This concern is substantiated by Jordan et.al. (1976, 1979) whose studies indicated an inconsistency amongst sign systems in various total communication programs.

To conclude this section the influence of English upon ASL will be examined. Invariably, some effects on a minority
language can be expected when the individuals using it interact with others utilizing the common language of that society. The effects would be increased if neither of the two knew the other's language well and conversation existed in a distorted manner (Nash and Nash, 1978). When the modes of communications are different the situation becomes more complicated. Such is the case of the Deaf community living within a large Hearing society. In such an environment, the deaf individual must be able to communicate in many different situations. These would include ASL, spoken English, written English and sign systems following English word order. To cope, a signer may resort to altering his own sign language to conform with the different contexts (Stokoe, 1970). One such variation is Pidgin Sign English (PSE) which was described as being a mixture of English and sign (Woodward, 1973c). PSE does not adhere to the structures of either ASL or English but puts signs in English word order along with the deletion and alteration of various grammatical features (Woodward, 1973c). Thus, on a continuum of sign language and sign systems PSE would lie between ASL at one extreme and sign English at the other with variations in PSE according to the extent in which ASL or English features are incorporated (Bornstein, 1978). Because of the English word ordering PSE has become the preferred system of most Hearing adults (Bornstein, 1978; Reilly and McIntire, 1980). It has been suggested that Deaf people who use PSE are, to some extent,
familiar with English (Reilly and McIntire, 1980). Furthermore, fluent signers are found to write the way they would sign in PSE (Jones, 1979). Further research is needed to determine the possible use of PSE in teaching English. PSE may well be an intermediary step between ASL and the acquisition of English as a second language.

Along the same view, Bragg (1973) examined another combination of ASL and English as used within the Deaf community. He used the term Ameslish to refer to the combination of ASL and English which he believed is used most often by Deaf people. ASL is generally used only by Deaf people with other Deaf people. Ameslish is used by the Deaf with Hearing signers and can be adapted according to the demands of the communicative setting and the verbal levels of the communicators. What Bragg has referred to as Ameslish may well be a form of PSE. Both, Ameslish and PSE, seem to be examples of one language, ASL, that has been influenced by another, English.
SIGN SYSTEMS

The present day use of sign systems to teach deaf children stems from a popular movement to incorporate various systems into educational programs especially when there was a change from an oral to a total communication program (Jordan et. al., 1976, 1979). The impetus for this movement can be attributed to an underlying assumption that a sign system which paralleled English would be more effective in teaching written English syntax than ASL (Wilbur, 1979). Ironically, the acceptance of ASL as a language in its own right coincided with educators and linguists speculating on the potential of utilizing signs as a visual representation of a spoken language's auditory-oriented stimuli. Whether it was the acceptance of ASL per se that caused this speculation, still remains to be seen. Possibly, the belief that ASL is a difficult language to learn led others to view sign systems as a viable alternative for normally hearing parents and teachers (Meadow, 1975). Consequently, various sign systems were devised which shared two common characteristics. Each had a one-to-one correspondence between signs and words or morphemes of spoken English and each incorporated to different extents, the use of ASL signs (Crystal and Craig, 1978). These characteristics will be further expanded upon in the discussion on specific sign systems which follows.
An important aspect of these systems is their restricted environment. They are used only within the confines of a classroom and in interactions between the teacher and student. However, the degree to which teachers actually use sign systems to represent English varies according to the experience of the signer and rarely approaches a true one-to-one correspondence between signs and English word order (Marmor and Petitto, 1979; Kluwin, 1981a). Herein lies a major drawback to the feasibility of accurately signing and speaking English simultaneously. This method, referred to as simultaneous communication, requires more time to say a word when simultaneously signing it than when speaking only (Bornstein, 1979). Bornstein's study was based upon the time rate for sentences and may not apply to an extended dialogue. This procedure needs to be examined further before generalizations can be made concerning the distortion of speech timing during simultaneous communication (Bornstein, 1979). Bellugi and Fischer (1972) also examined the rate of production for signs and spoken language and found that signs required more time to produce than spoken words but a phrase produced in ASL had about the same rate as spoken English. This compatibility in time rate of spoken English and signing in ASL and the possible implications for learning English is a neglected area that needs to be pursued. Studies in this area could reveal ways of redesigning sign systems and possibly reducing the time distortion of simultaneous communication.
Klima and Bellugi (1979) have described various grammatical processes of ASL and the linguistic devices that allow proposition rates of ASL to be identical to that of spoken languages. Kluwin (1981b) has suggested that these findings too be incorporated into sign systems in order to increase their compatibility with spoken English.

The restricted environment of sign systems may in itself be self-defeating despite their purpose for teaching English through a visual mode. Language is a means of communication and as such serves a critical function in the community. The Deaf community does not use sign systems to communicate amongst themselves and generally use a form of Pidgin Sign Language when communicating with people who do not know ASL (Woodward, 1973b). In this sense a sign system is perhaps non-functional, yielding good sentences for writing but poor ones for conversations (Stevens, 1976). In this situation deaf students may find it inherently difficult or frustrating to comprehend a communication mode that apparently defies the logic of communication.

Identified synonyms for sign systems are 'contrived sign languages', 'see-signs', 'new signs' and 'new sign languages' (Stokoe, 1975). Yet, these systems are not deemed to be languages, rather they are means of representing English (Markowicz, 1972; Woodward, 1973b; Stokoe, 1976; Moores, 1978a; Crystal and Craig, 1978; Kluwin, 1981b; Erting, 1981). Thus,
the question remains whether sign systems are acquired in the same manner as native sign languages? Their relatively recent development imposes limits upon the possible assessment of this aspect. However, observations have revealed characteristics which may influence or inhibit the processes of natural acquisition. Battison (1974) believed that sign systems impose constraints on the natural phonology, morphology and syntax of ASL. This is to be expected as the signs themselves are limited by the articulatory dynamics of the body. His concern was the relationship between the naturalness of signs and phonological change. The English based rules of sign systems may or may not be compatible with the change of roles that signs themselves must undergo when borrowed from ASL.

Stokoe (1975), sees ASL as consisting of a set of lexico-semantic, syntactic, and expressive rules all operating together in a linguistic system. When signs are taken out of the language context in which they operate, and placed in a different language mode a change in meaning may result. Stokoe (1975) has stated that "the reduction or cannibalization of a sign language to serve as an imperfect code for English may fail in its purpose and leave the child with little competence in either language" (p. 419). Kluwin (1981a), warned against further complications brought on by the use of written English as a model for representing English manually. The basic premise is that people do not speak the way they write. Interestingly,
it has been said that the traditional emphasis on the syntax of written English in schools is a cause of confusion, because of the need to focus on what is being said rather than how it is said (Gormley and Franzen, 1978).

Hoemann (1978) examined the sociolinguistic aspect of sign systems and suggested that the invented signs of these systems may be accepted by the Deaf community, but if they violate the grammatical rules of ASL they are likely to be unstable. Consequently, in order to conform they will change over time.

The emphasis on the negative aspects of sign systems is not an attempt to criticize their utilization within classrooms. It is, however, an attempt to raise some of the fallacies inherent in their widespread adoption without demonstrated evidence of their usefulness. It is the confusion of educators and researchers, alike, that has caused sign systems to be widely accepted as the new "panacea" in methods of communication with the Deaf without the benefit of scientific research. Along with the problems of signing these systems, whether through lack of experience or the inherent difficulty of the systems themselves, objective assessment of their value has been hard to demonstrate.

The state of the art of sign systems is placed in historical perspective when one considers that the first system was used in a School for the Deaf in Paris during the eighteenth century by Abbe Charles Michel de l'Epee (Bender, 1970). He
employed methodical signs as a basis for instruction in French grammar (Stokoe, 1975). Furthermore, he distinguished between the 'natural' sign language used by the Deaf and signs which he invented. This insight into the nature of sign language by de l'Epee two hundred years ago is in sharp contrast to the only recent acceptance of native sign language as a language per se.

For a better understanding of the nature of sign systems, several will now be described. Descriptions of sign systems have been made by Anthony et al., (1971), Bornstein (1973, 1979), Meadow (1975), Penn (1976), Crystal and Craig (1978), Reimer (1979), and Griffith (1980). Their work will provide the basis for the descriptions given here. To be examined are the Paget-Gorman Sign System, Seeing Essential English, Signing Exact English, Linguistic of Visual English, Manual English and Signed English.

**Paget-Gorman Sign System (PGSS).**

Originally referred to as "A New Sign Language" (Paget, 1951), then changed to a "Systematic Sign Language" (Paget and Gorman, 1968) the present name was finally derived in 1971 in recognition of the fact that the PGSS is not a language and should not be categorized with the native languages of the Deaf (Craig, 1975).

Developed by Sir Richard Paget and used in England it is mentioned here only because it represents the first English-based system devised (Paget, 1951). Bornstein (1973)
has described the guidelines Paget used in selecting and arranging appropriate signs as: (1) a sign should represent a single English word or part of a word, (2) signs should be ordered as words are ordered in spoken languages, (3) signs should be "inflected" similar to inflections of spoken words, and (4) signs should be adapted or invented to form an initial basic vocabulary.

Paget added new signs for word roots, suffixes, and prefixes, thereby, enhancing a one-to-one correspondence with English. Within the system 37 "basic signs" are used to identify groups of words with a common theme and an additional modifier sign is added to each for further identification (Crystal and Craig, 1978). For example, one hand may form the basic sign PERSON and the other could form the modifier sign for TOOTH to give dentist; TEACH to give teacher or FIRE to give fireman (Wilbur, 1979). Fingerspelling is also used, but only for proper names. The major value of this system may well be the role it played in the lessening of hostility towards the use of manual communication in education, particularly since little or no conclusive data are yet available on its usefulness (Fenn, 1976). Of particular interest is the separation of PGSS and British Sign Language (BSL). Since the British Deaf community uses BSL it is possible that a system not based upon the signs they use would not be easily accepted (Bornstein, 1979).
Seeing Essential English (SEE I).

Originally, called Signing Essential English the name was changed to appeal to parents and educators and to offset the stigma of manual communication (Anthony et. al., 1971). It was developed under the direction of a deaf man David Anthony, for the purpose of providing a visual medium to complement speech. Described as having the largest number of vocabulary items (Bornstein, 1979), it uses ASL as its base and attempts to invent new signs in an effort to keep fingerspelling to a minimum and allow for a close one-to-one correspondence with English. Separate signs have been invented to represent roots, prefixes, and suffixes and individual signs may be used for a word, a base element in a complex word, or as a part of a compound word (Bornstein, 1973).

A special feature of this system is that it is not meaning based. Thus, two words will have the same sign provided they match on two out of three characteristics which are identified as sound, meaning, and spelling. The word 'call' will have the same sign regardless of intended meaning (Griffith, 1980). As an another example the sign for 'fire' will be the same whether the intended usage implied that something is burning or that the trigger of a gun should be pulled. Thus, SEE I is not a meaning or a concept based sign system.

In explaining the usefulness of SEE I Washburn (19) claimed that A.S.L. is hampered by its own syntax and idioms and
perceived SEE I as finally allowing English syntax to be visualized through the language of signs. The authors of SEE I, however, did not categorize SEE I as a sign language, but rather as a medium for communicating in English (Anthony et. al., 1971). The major beneficiaries of this system are English speaking parents and educators who have trouble communicating in ASL and deaf children who will now be able to acquire English. The use of ASL, is implied by the authors as being inefficient for the acquisition of English.

**Signing Exact English (SEE II).**

Signing Exact English is a spin off from SEE I and was developed by Gustason, Pfetzing and Zawolkow (1972) who participated in the development of SEE I (Bornstein, 1973). Consequently, there are many similarities between SEE I and SEE II. Notably, both are morphemic-based systems in that signs correspond to morphemic units and both incorporate the use of fingerspelling (Reimer, 1979). The two-out-of-three principle described for SEE I also applies here, thus, the affix "-ship", the noun "ship", and the verb "ship" are all given the same sign.

Bornstein (1973), in a personal communication from Gustason was given three reasons for the development of SEE II. Firstly, the notational system as described in the SEE I manual was too difficult to learn. Secondly, there were only a limited number of SEE I manuals printed and lastly, the signs of SEE I were in
some cases too unrelated to ASL. Specifically, in the last instance, root words were inappropriately defined leading to confusion amongst parents and teachers. For example, the authors of SEE II did not agree with SEE I's method of using the root "gene" as a sign in "general", "generous", or "genetic". Therefore, they used only those signs most representative of basic words. However, Bornstein (1973) has estimated that there is approximately an 80 percent overlap of signs within these two systems.

SEE II has the largest use in programs for the Deaf (Jordan et. al., 1976, 1979; Bornstein, 1979) and it is worthwhile to give some examples of these signs as described by Wilbur (1979). The word "redden" has two signs, one for the adjective "red" and one for the suffix "-en". The sign for "-en" is the FINISH sign which is also used with the CHICK sign to get "chicken". Some words do not follow the two-out-of-three principle but are broken down into morphemic divisions. "Height" becomes HIGH + T, "sorrow" becomes SORRY + W and "jewelry" becomes JEWL + R + Y. Compound words retain the meaning of each word in signs for "babysit (BABY + SIT) and "shepherd" (SHEEP + HERD). Compound words with unpredictable meanings are given new signs. "Carpet", for example, has only one sign and is not 'CAR + PET'.

In spite of, or possibly, as a result of its elaborateness the effectiveness of SEE II remains to be demonstrated. Even proponents of this system admit that as a method of
communication there is not sufficient research to justify its implementation (Reimer, 1979).

**Linguistic of Visual English (LOVE).**

This system developed by Wampler (1971) uses signs to parallel the rhythm of speech. As described by Griffith (1980), "each sign includes as many movements as there are syllables in a word" (p.101). It is also an off-shoot of SEE II with signs derived from ASL and is morphemic-based. LOVE differs from SEE I and SEE II in that each sign represents a morpheme, but the two-out-of-three principle still applies in distinguishing the morphemes.

Cokely and Gawlick (1973) have reviewed some of the principles of the LOVE system. They expressed concern that attempts made to retain a basic ASL vocabulary had not been successful. The reason for this failure was cited as being the adherence, by LOVE principles, to have a word signed in the same manner irrespective of meaning. Such a rule changes the ASL meaning of signs and therefore, can no longer be referred to as ASL signs. An example of this would be the word 'fly'. LOVE would have just one sign to indicate both the noun and the verb, whereas ASL would have two signs. Bornstein (1979) described LOVE as an abortive attempt which is in little use.

**Manual English (ME).**

Manual English was incorporated into the Washington State School for the Deaf (WSD) as a means of implementing a total
communication program (Anonymous, WSD, 1972). WSD is responsible for the format of this system which is used in conjunction with speech. Like all the previous systems, the representation of English structure was central in its development.

The distinguishing feature of ME is that it is meaning-based and relies heavily upon ASL. No attempt is made to alter the meaning given to a sign by the Deaf community. Rather, the distinction of English words is revealed by initialing of signs within certain classes, verb form markers, and signs for word endings. For example, the sign FINISH when initialized with a C-handshape becomes the sign for 'complete', and likewise an E-handshape will change the meaning to 'end'. The word "leave" will have a separate sign as a transitive and an intransitive verb. Fingerspelling is also more widely used than in previous systems (Wilbur, 1979). By depending upon ASL ME avoided some of the mistakes in inventing new signs without the approval or consultation of the Deaf community.

Signed English (SE).

Signed English is the most recent sign system devised, but its course of development and evaluation is comparatively well documented (Bornstein, 1973, 1974, 1979, 1982; Bornstein et. al., 1975, 1980; Bornstein and Saulnier, 1981). Originally intended for pre-school children it was extended to elementary school children and is presently being advocated by Bornstein (1982) as suitable for adolescents and adults. Like Manual
English, SE is not as complex as other contrived systems. ASL signs provide the basis for the vocabulary and fourteen sign markers are used to indicate word form changes with five of these markers being adopted from ASL. Only one sign marker may be added to a sign word and those words that cannot be represented are fingerspelled.

The effectiveness of SE has not been clearly demonstrated but a study by Bornstein and Saulnier (1981) on children who have used SE for four years, showed a noteworthy rate of growth in vocabulary. In the first three years of using SE, this rate was determined to be 43 percent of the rate hearing children normally progressed. However, in the final year of the study there was a decrease in this rate. Also indicated was the development of some competence in the English language. A parallel study with other methods of communication will be necessary before objective claims can be made for the value of using SE. Interestingly, the study did show that mothers involved in the study, acquired signing skills that ranged from beginner to an average level, whereas, fathers did not get past the beginner's stage.

One of SE's originators, Harry Bornstein (1982), is now advocating that the complete SE system be used with children in their early childhood until they have obtained a mastery, in any modality, of certain elements of English. At this time deletions of sign words and sign markers should be allowed if
the correct English can be inferred or if it is possible to substitute a single sign for two or more words. This change in philosophy is a result of conceding that SE is not an efficient mode for communicating and that older students who have obtained mastery of certain English elements should be allowed to sign in a more comfortable manner. The qualities of this modified form awaits future investigation but it may well be a variation of PSE.
EDUCATION OF THE DEAF AND SIGN LANGUAGE

Historically, the role of sign language in education of the Deaf has not always been recognized as a realistic and practical method. Except for a period in the 1800s, signing has been overshadowed by the popularity of oralism (see Bender, 1970). In Spain, Juan Martin Pablo Bonet in the first book written on teaching the Deaf, advocated the use of sign language and the manual alphabet (Bender, 1970). Using the manual alphabet, similar to the one used today in North America, Bonet encouraged families to surround their child in a language environment at an early age and to use fingerspelling as a basis for teaching speech (Moores, 1978a). Bonet's perception, in 1620, of the unique problems dictated by a hearing loss preceded current speculations that early intervention, family involvement, and total communication would provide avenues of success for a deaf child.

In England, the use of the manual alphabet and signs were first described by John Bulwer in 1648 (Bender, 1970). William Holden and John Wallis are acknowledged as the first teachers to apply the manual alphabet and signs in practice (Moores, 1978a). Also in the seventeenth century, George Dalgarno prescribed the continual use of fingerspelling and proposed that the deaf child's potential for learning was similar to a hearing child given appropriate educational strategies (Di Carlo, 1964; Moores, 1978a). The eighteenth century saw Thomas Braidwood add
gestures and signs to the two-handed alphabet used by others and in the early 1800s, John Arrowsmith, praised de l'Epee's method and expounded the need to assist parents in teaching their children at home (Bender, 1970; Moores, 1978a). No attempts to duplicate and expand upon these earlier techniques were forthcoming until recently when signs began its trial of acceptance (Denmark, 1975). This recognition, in England, has been set back by the attitudes of some authors, like Watson (1975), who contend that signing is perhaps most useful for children of low ability. Qualification of this statement might be relevant if such perspectives incorporated deaf children into a category separate from the Hearing with respect to human characteristics. Specifically, one can not generalize that low ability hearing children might benefit from a communication mode other than speaking, or perhaps, from a lower form of English.

Trends in education of the Deaf in Canada has paralleled those in the United States (Winzer, 1979, 1980) and will not be specifically dealt with. As noted earlier sign language has been given scant attention in North America since the first few years after it was introduced into education by Gallaudet as a means of teaching the Deaf. Conversely, sign language has always been the method of communication within the Deaf community, with ASL being recognized as the native language of most Deaf adults (Robinson, 1980). This contradiction is one reason why pedagogical techniques in educating deaf children are
beginning to incorporate input from the Deaf community. Other reasons include the acceptance of sign language as a language, as was discussed earlier, and the emergence of the total communication philosophy.

Total communication has been defined in various ways. Some definitions maintain that total communication is a philosophy (Denton, 1972), whereas, others regard it as a method (Levine, 1981). The term was first coined by Roy Holcomb in the late sixties (Clarke, 1972) and is essentially the use of "speech, lipreading, cued speech, amplified systems, writing, printing, appropriate gestures and possibly more" (Levine, 1981, p.133) in an effort to facilitate communication with deaf children. Holcomb (1972), viewed total communication as constituting one part of a total approach to teaching. This approach included the use of parents, hearing children, teacher, curriculum, the community, and extra-curricular activities. The Washington School for the Deaf has defined total communication to mean that the Deaf child understands and, in turn, is understood (W.S.D., Anonymous, 1972). Denton (1972) declared that it is the right of a deaf child to learn to use all forms of communication in order that language competence may be developed.

Confusion as to whether total communication is a method or a philosophy can be clarified by examining it from different perspectives. In theory, it reflects an attitude embraced by teachers, parents, and children which allows them to use any
available means of communication to express a thought. Thus, it is a philosophy that urges not how one communicates but that one communicates effectively. In practice, total communication calls for teachers and parents to develop both their skills, and those of a child, to utilize various abilities of transmitting and receiving information. Hence, it can also be viewed as a method.

The substance of total communication was the acceptance educators now extended towards the value of signing in the classroom. No longer was signing prohibited to ensure that a deaf child could be molded into a "fictitious version of a hearing child" (Vernon and Makowsky, 1971, p.4). Neither was sign language to be used as a last resort for oral failures (Newman, 1971). With the advent of total communication sign language gained respectability. Due to the role of sign language, total communication was also endorsed by the largest representation of the deaf in the United States, the National Association of the Deaf, (Pahz and Pahz, 1978). Kent (1971) summarized the impact of the Deaf on this new acceptance...

In the final analysis, it has been the living example of the familiarly deaf children and their deaf parents from whom we have learned most. They have demonstrated to us patiently and clearly the heights to which our deaf children can aspire. It is our aim to provide this same opportunity for all profoundly deaf children to have total communication from an early age .(p.7)

Stokoe (1976), has postulated that by learning to sign early deaf children of hearing parents will best be able to rise in
their society like those deaf children with deaf parents who are naturally enculturated. Deaf parents, too, are faced with the choice of signing or to use speech only. The majority has been found to favour signing (Meadow, 1972). Proponents of total communication are now applying similar strategies by encouraging the use of signs by hearing parents (Denton, 1972).

Newman (1971) identified accusations that total communication, is an older philosophy given new recognition. And Dykman (1972) identified detractors of total communication who claimed that it is only another form of manualism. Contrary to these beliefs, since the early days of education there has been no educators advocating the use of a manual only system (Pahz and Pahz, 1978). Manualism is a crutch that oralists use to discredit the use of sign language. Total communication advocates the use of signs and speech as well as other means to communicate. Under total communication, simultaneous communication is just one aspect that encourages the use of more than one means to enhance understanding (Newman, 1971).

An important concept within this new philosophy is an examination of the individual child to determine appropriate communication methods. To fully realize language potential, a child's modality preference must provide the guidance (Tervoort, 1980). Goss (1970) implied that an ability to interact which would make communication less difficult and frustrating is likely to aid hearing mothers in attaining a natural behaviour
with their deaf infants. Moores et al. (1973a) reported that among deaf children sign and gestures are the most commonly used form of communication irrespective of educational program. Beckmeyer's (1976) study on the various modes used within total communication programs showed that the most efficient mode was related to the child's preference. That is, for communicative purposes oral was best for those who preferred the oral method, and manual was best for those with manual preference as well as those with both oral and manual preference. Some educators have suggested the limiting of this preference by insisting that an English sign system be used (Herx and Hunt, 1976). Paul (1976b) stressed the need to adhere to a child's choice and to avoid instilling the notion that English and speech were superior by forcing a child to speak when he signs.

Total communication brings new considerations to the surface. Teachers should be aware that when communication is teacher dominated deaf children are prevented from expressing themselves freely (Craig and Collins, 1970). Total communication however, is a two way process. Complexities of the language situation facing the Deaf can best be understood and facilitated through social interactions with the Deaf community itself (Woodward, 1973a). This is especially necessary for Hearing individuals whose viewpoints are derived from a narrow sphere of contacts made within the office or classroom (Vernon and Mindel, 1971). To operate effectively
teachers need to know more than just a lot of signs (Brennan and Colville, 1979). The role of ASL in a total communication program must not be relegated to an inferior status as is usually the case when ASL is compared with a sign system which follows English word order (Markowicz, 1972).

Researchers were faced with many new questions that total communication posed. Reich and Bick (1976) in comparing fingerspelling with total communication showed that by using the latter there was a more visual representation of English. Greenberg (1980) noted that families using simultaneous communication skills had more positive attitudes and less stress than families using the oral method. Moores (1978b) called for an investigation into the processing of messages simultaneously presented by voice and signs and for research into the relationship between signs and the development of speech. Broadbent (1956) had earlier suggested that processing in two sensory channels is feasible given two distinctive channels such as the ear and the eye. Additionally, receptive skills were deemed to be better via direct simultaneous transmission in signs and speech than through an oral-manual interpreted communication (Caccamise and Blasdell, 1977).

Studies on the influence of using signs with deaf children are mainly positive. Examining pre-school rubella children with hearing parents, Howse and Fitch (1972) concluded that children exposed to signs gained an advantage in development. On the
other hand Luterman (1976) inferred from his results that the language skills of children trained by the auditory-oral method were superior to those trained by the visual-oral method. Klopping (1972) compared the level of language comprehension of students between the age of thirteen and twenty years using either total communication, the Rochester method, or speechreading with voice as their means of transmitting information. Of the three methods, total communication resulted in significantly higher scores followed by the Rochester method. This suggested possible benefits in supplementing speechreading and oral skills with the additional visual cues provided by fingerspelling and signs. White and Stevenson (1975) compared the effects of total communication, manual communication, oral communication, and graphics on the assimilation of factual information. Graphics resulted in the highest assimilation with no significant difference between total communication and manual communication. These three methods all obtained higher results than oral communication.

The question of whether methods of signing would result in differences was also raised. Both of the studies reviewed here compared ASL and Siglish, where Siglish is defined similarly to Pidgin Sign English. Higgins (1973) used videotaped presentations to determine whether fingerspelling, Siglish, or ASL was easier to understand. His findings, based on a multiple choice test, showed Siglish to be the most comprehensible
followed by ASL. Murphy and Fleischer (1977) however, found that there was no difference in the comprehension scores between Siglish and ASL presentations.

Perhaps the most conclusive statement which can be made regarding total communication is that it has had a positive effect upon deaf children's ability to receive more information when communicating. However, more research is needed to determine the extent and direction of its effectiveness. The role of ASL and sign systems need to be investigated more thoroughly. Examining the interrelationship of the various components of a total communication program may determine the effects that speech, signs, speechreading, auditory skills, fingerspelling and other aspects have upon each other. More importantly, to ensure that total communication receives a fair chance to prove itself, teachers and programs must increase their efforts in adhering to its philosophical principles. It has been observed that amongst schools and classes for the hearing impaired the trend is towards an increase in the number of total communication programs, largely at the expense of oral programs (Jordan et.al., 1976, 1979). Nevertheless, the philosophy, in many instances, is not being properly implemented (Alexander, 1978). This may imply that the philosophy itself is at fault or more likely that the conditions and skills required to implement a total communication program need more time to develop.
BILINGUAL EDUCATION

The introduction of the total communication philosophy gave sign language a status unheard of since the late eighteenth century when oralism came to dominate the methodological practices in education of the Deaf. This status was primarily based on the recognition of sign language as a trus language and as a native language of many deaf children. The logical consequence of this recognition was the realization that deaf children learning English were perhaps bilingual, using ASL as their native language and English as a second language. Acceptance of this notion necessitates an alteration of teaching strategies which accounts for language development patterns in children learning a second language. Interest in this field is minimal and basically conjectural, possibly, due to the novelty of the idea.

Various definitions and uses of the term bilingualism can be found. Schlesinger (1978), suggested a common definition as being "the coexistence of two languages which differ radically in most linguistic features with only minimal sharing of vocabulary items" (p. 63). Stokoe (1976), referred to bilingualism as "the constant use of two languages " (p. 22). Kannapell (1974) adopted a definition which has reference to people who are able to comfortably converse in two different languages. One who is comfortable speaking English and signing in ASL would be an example of a bilingual person.
A distinction between ASL and sign systems, as they relate to bilingualism, is crucial in understanding their possible roles in bilingual education. Bilingualism implies the use of two languages. Therefore, speaking English and signing in English word order represents the use of two modalities as opposed to two languages. Here, bimodalism is the appropriate descriptive term to describe the visual and auditory representation of a language utilizing two modalities (Schlesinger, 1978). Bimodalism is used when one language is expressed in two modalities or two languages in two modalities. One who can use speech or signs to communicate, regardless of extent of fluency, is able to offer a bimodal representation of language. Thus, bilingualism is a generic term separated from bimodalism because it represents the use of two languages rather than the manipulation of two communicative modes.

Further distinction is needed to describe situations in which a language is altered according to communicative needs. Woodward (1973b) conceptualized sign language as a continuum ranging from ASL at one extreme to the exact visual representation of English through signs at the other. Variation will occur according to the signing skills of the individuals involved. Shared knowledge of ASL, between two speakers for example, would tend to result in communication in signs representative of the ASL end of the continuum. A condition which utilizes different varieties of a language according to
the needs of the situation is referred to as diglossia (Ferguson, 1959). Pidgin Sign English is a diglossic form of ASL. Stokoe (1971) resorted to the concept of diglossia for possible clues to explaining the acquisition and use of signs. Both diglossia and bimodalism add to the complexities of integrating a bilingual philosophy with teaching strategies involving sign language.

As described earlier, studies involving total communication by Klopping (1972) and White and Stevenson (1975) demonstrated the efficacy of utilizing more than one communication mode in the learning of deaf children. Brooks et al. (1981), more specifically examined various combinations of modes and rates of learning. Using audition, lipreading, and fingerspelling as the three modalities it was concluded that bimodal presentations were superior to unimodal methods.

Fundamental to the issue of bilingualism is the resolution of the language question: Which language is to be a deaf child's first language, ASL or English? Superiority of one language is not a criteria in this debate and other factors need to be explored. Literature dealing with the spoken languages of minority groups revealed the nature of some possible factors. Fishman (1970) emphasized the importance of community attitudes towards different languages, the respective situations calling for a particular language usage, and the stability of each language in the community. Richards (1970) related educational
programs and bilingual policies by implying that a bilingual program will only be effective to the extent that it "recognizes and reinforces community aspirations and values" (p.1). Walker (1979), in reviewing Mackey's (1972) concept of bilingual education, described four relevant dimensions as the home behaviour of the bilingual, the school's curriculum, the surrounding community in the immediate area, and the status of each of the languages. It has been further noted that the difficulty which children from two cultures experience in school, arises from cultural rather than linguistic difference (Walker, 1979). To supplement the advantages brought on by using a child's first language, the state of Texas has included in its components of bilingual education the requirement of attending to the development in a child of "a positive identity with his cultural heritage, self assurance, and confidence" (Walker, 1979). Although, deliberately short, this review revealed that the accent in bilingual education is on respect for the minority 's language and the culture in which it is embedded.

That the Deaf population is widely dispersed within the larger Hearing population should not detract from the values and attitudes which the Deaf community upholds. Parallels between the Deaf community and other minorities are supportable due to sign language and Deaf culture being legitimate aspects having counterparts in all communities, majority based or not. Thus,
it is defensible to demand, as Kannapell (1974) did, that ASL be recognized as a deaf child's first language and used as a basis for developing English skills within the schools. Kannapell (1975b) further argued that in practice this recognition would lead to an improved self-concept and a desire by a deaf child to learn English as a foreign language. Other rewards in learning ASL first were shown by Hatfield et al. (1978) in a test of 219 deaf students' comprehension of videotaped stories in ASL and manually coded English. Their conclusions, based on their finding that the most fluent ASL signers made the fewest errors on the manually coded English stories, was to suggest that ASL may enhance development of English skills. Chinchor et al. (1976) reported that ASL signers were able to comprehend signed English more easily than signed English only users were able to understand ASL. Prinz and Prinz (1979) in a study of bilingual acquisition of language (i.e., English and sign language) in a hearing child insisted that simultaneous acquisition did not impede the child's overall semantic development.

Differences in modalities, may also lead to the development of different coding strategies. Coding, or internal information processing of hearing children is thought to consist of a phonetic component which relates to the sound of the words picked up auditorily or read from print (Hung et al., 1981). Deaf children, lacking a speech code, tended to rely on a
semantic code with regards to written and signed information (Frumkin and Anisfeld, 1977). Additional evidence pertaining to differences in coding strategies was obtained by Odom et al. (1970), who compared the ability to recall words that can be signed and words that must be fingerspelled. A hearing non-signing group was used as a comparison. A significantly higher score was obtained by the deaf group on the list of signable words. Wilbur (1974), proposed that ASL users converted English to a sign representation for coding and storage. The possibility of dual coding abilities is supported in the bilingual development of a young hearing child who demonstrated appropriate manual and oral babbling behaviour (Prinz and Prinz, 1981). Tervoort (1978), expressed concern about the unilateral or mutual influence of one language upon another. It is possible that the dominant language will tend to exert a greater influence upon the lesser used language, however, Tervoort advised that before bilingual interference occurring between two different modes may be examined it is essential to understand the nature of nonlinguistic information that occurs in the interpersonal communication of signers. Thus, a complete understanding of sign language must be attained before a credible comparison with spoken languages can be made.

In bilingual education amongst spoken languages the beliefs and values of the minority culture to which a child belongs has a central role in the development of that child's self-identity.
The neglect of this fundamental connection tended to disfavour the minority child's own perception of his self worth amongst peers of the predominant culture. This may be a partial explanation of the low achievement attained by hearing minority students in an Anglo oriented educational system (U.S. Commission on Civil Rights, 1971). Teacher expectations is another possible factor as disadvantaged students are not expected to achieve as high as others and therefore, do not (Rosenthal and Jacobson, 1968). The implication is that children must be accepted as individuals and not stereotyped (Walker, 1979). Acceptance starts in the home and as Corson's (1973) study has shown, parental acceptance is a critical factor in the development of deaf children. Acceptance of a child's deafness may, for some parents, mean the use of sign language to facilitate communication. Layton et.al.(1979) questioned the full advantages of nonfluent Hearing signers signing to their children. Concern is expressed at the possibility of signs learned through instructions not being compatible with normal language developmental sequence. Van Metre and Maxwell (1981) found that students do not use ASL with hearing parents but do so eighty percent of the time with their peers. They inferred this to be an indication of the need to make signs used at home conform with signs in the schools.

Research has not been carried out on bilingual experiences involving sign language to the same extent as it has with those
involving a minority spoken language. The question of whether ASL or English should be the first language still awaits scientific observations. Educational programs mostly use sign systems as their basis of teaching English. Based on the definition of bilingualism it is debatable whether this represents a true bilingual experience. Sallop (1973) in a six week experiment taught English as a second language. His experience suggested that for those children using gestures only, ASL should be taught, and for those who knew ASL, signed English was then appropriate. The Tutorial Center of Gallaudet College uses written English as a means for transmitting English and signs to impart concepts (Goldberg and Bordman, 1975). This brings to light a major obstacle in that ASL has no written form, although, Stokoe (1976) claimed that such a form is now possible. The notion of a written form for signs appeals to the pragmatic interests of educators and new insights into the peculiarities of a sign language may alter present methods in teaching language (ASL or English) to the Deaf. However, the present method of depicting signs by a graphic representation may prove to be too cumbersome to justify its application. Just as signs are appealing to Deaf signers, the printed form must also be presented as a practical and useful medium.

In summary, bilingual education offers a new and potentially effective method for teaching the Deaf. Its success depends on the choice of an appropriate first language and
investigations intent on incorporating the uniqueness of Deaf culture into school programs.
Educational systems are the established means of ensuring that the structures and value systems of the controlling society remain intact (Stokoe, 1978). Children are processed through these systems in order to be socially and communicatively effective citizens. Institutions depend upon a common language for a sharing of ideas and an inculcation of beliefs and mores. Using language as a code, information is transmitted through appropriate communicative modes representing various use of the sensory organs. Signing, speaking, writing, braille, and fingerspelling exemplify the use of visual, auditory, and tactile senses to express and perceive messages. The language used is related to an individual's society and represents a linguistic aspect of that society's culture (Hoijer, 1948). The mode used is usually speech which may be visual for the hearing impaired or tactile for the deaf-blind. A spoken language is the dominant form of communication, consequently, educational institutions catering to society's needs are generally based upon the norms established by hearing speakers of the common language.

The use of ASL among Deaf people is a salient gesture that the traditional educational system must adapt if it is to fulfill the role of teaching society's beliefs and mores. Foremost, in this adaption is the prerequisite that the Deaf be accepted as citizens with rights similar to Hearing citizens.
However, the common attitude towards those with physical deviations is one of aversion, especially if the disability is impaired hearing. Deafness however, is an invisible handicap and does not evoke the aversion displayed to more obvious handicaps such as cerebral palsy. It is the communication system used by the Deaf who otherwise look normal that frightens off Hearing persons.

The effects of deafness are generally misjudged by those persons who accept the myth or the 'obvious' solution that hearing aids and lipreading solve all problems. (Levine, 1981) Furthermore, the oral-manual controversy that has raged since the 1860s has failed to account for or base its argument upon the individual child's preference or the group preference (Lloyd, 1973). Likewise, as discussed earlier, the rationale for using various sign systems is not based upon objective analysis. Instead, the problem of overcoming the dual communicative problem imposed by a loss of hearing and a speech impairment has been instrumental in simple minded solutions being offered to assist in a deaf child's development (Mindel, 1972). 'Talk louder', 'Speak more slowly', 'Have him feel his throat when voicing', and 'Sign in the English word order' are not solutions and serve to divert attention from the crucial issue of accommodating a child's needs. Watson (1973), criticized the educational system for forcing the child to meet the needs of a system which is designed around a particular
communicative method. Mindel (1974) remarked that "deaf children seemed to be commodities utilized in the support of an educational system offering the greatest awards to parents and teachers" (p.83). As for Deaf adults, the price is too high to permit them to partake in educational policies which invariably leave the deaf child with undeveloped potential in favour of satisfied parents and educators (Carver, 1981). Ironically, intentionally good school policies may have contributed to a new perspective on deafness yielding the opinion that, perhaps, "the biggest handicap of the deaf man is the man with so-called normal hearing" (Carney, 1973, p.135). In response to these observations, researchers are beginning to look at the sign language used by the Deaf and also to seek out opinions of the Deaf community.

Deafness and a native sign language are two common characteristics of a Deaf community. Jacobs (1974b) described the Deaf community as the "natural result of a people who seek their own kind for mutual pleasure and benefit" (p.70). It is "free and easy communication" that serves to draw Deaf people together (Jacobs, 1974b, p.70). The impediment, to learning a spoken language, that a hearing loss signifies makes sign language the obvious choice for communicating. A common language serves to satisfy the basic human needs for communicating and is critical in the socializing of individuals into their culture (Stevens, 1976). Although, there are some
oral Deaf members within the Deaf community, the majority of the Deaf use sign language and view those deaf persons who do not as "outsiders" (Higgins, 1980).

This disassociation of speakers and signers, identified as an ethnocentric bias (Schlesinger and Meadow, 1972), is similar to the split between educators who hold that learning of speech during school age is more relevant than the learning of sign language (Nicholas, 1975), and those who advocated the learning of speech and signs together (Denton, 1972). Stokoe, (1971) equated ethnocentrism with a belief that one's language is the only language that can be linguistic and to "deny that some other language is 'systematic' and to impute to the out-group using the language a deficiency of mental functioning, .... comes perilously close to racism" (p.36). To regard signing as being inferior to speaking is to instil a sense of rejection and condescension in a deaf child that may be damaging (Freeman et. al., 1981). Others are convinced of the connection between language and the Deaf community and have suggested that deaf children represent a linguistic minority and should be treated as such (Charrow and Wilbur, 1975; Charrow, 1975).

That the rules for language usage are outside the conscious control of an individual and are culturally patterned behaviours learned through interpersonal interactions, is a sufficient condition for analyzing the relationship between language and culture (Erting, 1981). In this analysis, the existing skills
and strategies of deaf children are examined rather than focusing attention on their linguistic deficiencies. Woodward (1972) suggested that the Deaf community be a source for investigating how the language situation influences attitudes and social variables related to the deaf. Harris (1978) also emphasized the need to understand the role of ASL and the Deaf community in a deaf individual's life. Gustason (1973) warned against the denial of a deaf child's access through the medium of signs to Deaf culture and suggested that poor educational achievements is the result of not respecting the language of the Deaf.

More respect towards signing and the opinions of the Deaf is a surfacing trend. Davis (1975), stated that the deaf person's choice of communication modes is the key to the development of their personalities and educational potential. Wilson (1975), valued the experience of a deaf person that cannot be found in books, through college courses or learned from Hearing people. Others, like Reeves (1975) are concerned that the "opinions of the deaf themselves are based on personal experiences" (p.11) and due to their subjective nature "the validity of their opinions is in some part questioned" (p.12). Concern, in this latter sense, fails to account for the emotions of a minority group attempting to gain recognition of their own status and language. Despite this concern communication is a two way street requiring coordination between the two
participants (Tronick et. al., 1978). Which way the Deaf choose must be considered.

Researchers are beginning to assess the value of the Deaf community and its importance towards the educational and cultural development of the deaf child. Erting (1978) speaks of sign language as an "ethnolinguistic heritage" crucial in allowing deaf children to learn the values and goals of the Deaf community. This may be in direct opposition to the present educational goal of first teaching the language of the larger Hearing society. Denial or suppression of the right to learn sign language has resulted in ASL becoming a stigma (Kannapell, 1974). Kannapell (1974) linked this stigma to a negative self-concept amongst Deaf people, and postulated that "within the deaf world people are ranked, according to the degree that they can 'hide' their stigma and 'pass' for hearing" (p.10). That is, ASL is a lower form of communicating than English. Ultimately, the Deaf may feel that ASL makes them inferior to Hearing people (Kannapell, 1975a). This attitude has been exacerbated by years of schooling when the Deaf were taught to speak and write English in order that they might be assimilated into the Hearing society (Gustason, 1973). This type of educational practice has restricted the development of a positive self identity in deaf children (Mindel, 1974). A Deaf child needs to have adult Deaf models to help him understand his handicap and its affects on his self-image, self-esteem and
self-confidence (Bowe, 1973). Vernon (1973), spoke of the educational handicap being a greater disability than the handicap of deafness due to primary emphasis being placed upon speech, rhythm bands, audition, and lipreading.

In addition to avoiding the views of the Deaf, researchers and educators have been accused of being unqualified to deal with the complexities of sign language. Falberg, (1967), a deaf psychologist, does not pretend to be capable of completely examining hearing clients and is perplexed by studies on deaf subjects by hearing people who lacked efficient communication. Stokoe (1972) spoke of the intrinsic bias researchers, not born deaf, will have towards thought, language, and speech. Paul (1976a), deplored the notion of hearing teachers teaching signs when these same teachers cannot understand the sign language used by their students.

The 'coup de grace' for the Deaf community is felt in other ways as Jacobs (1974b) explains

"What makes this sadder and more infuriating to the deaf adults is that those educators, who have not better than secondhand experiences with deafness, should be in a position of authority where they have influenced the development of untold thousands of deaf children...They together with their political superiors and parents, have consistently refused to listen to, let alone consult the only people who have been through the mill - the deaf themselves."(p.200)

The literature convincingly indicates the need to formulate educational policies based upon the opinions of the Deaf
themselves. It may well be that the time has come to heed the premonition of Stewart (1972) that "the patience of the silent majority is growing thin." (p.)
TELEVISION CAPTIONING

In an effort to assist the Deaf and the Hard-of-hearing in partaking in a communication network, that is largely auditory dependent, scientists have created technical devices that are vision-oriented. In the area of telephones, telecommunication devices for the Deaf (TDDs) allows for orthographic exchange of information using the telephone lines for transmission. The significance of this development is apparent not only from its obvious value to the users but from its influence on the visibility of the needs of the Deaf and Hard-of-hearing. California, for example, has established regulations directing telephone companies to provide TDDs for prospective consumers just as they supply telephones to normally hearing customers (Stoker, 1982). For interpersonal communication TDDs offered accessibility through a visual display of printed words which in effect removed the need to possess adequate hearing as a prerequisite to utilizing the telephone.

In the field of television broadcasting technological developments have made the audio portions of television shows visible as printed words which are known as captions. This orthographic display on television is responsible for a tremendous increase in the perception of information by Deaf and Hard-of-hearing viewers. These viewers are now better able to experience and enjoy the educational and entertaining aspects which television has to offer.
Initially, captioning was suggested by Ross Hamilton in a doctoral dissertation in the late forties (Stepp, 1981). In 1950, the idea was implemented and sponsored by the Junior League of Hartford, Connecticut, which helped establish the Captioned Films for the Deaf (CFD) as a nonprofit corporation (Boatner, 1982). Later the Library of Congress under Public Law 85-905 in 1958, established a national office for CFD. During CFD's first few years of existence entertainment films were captioned and distributed to deaf clubs and organizations. With an amendment to the Captioned Films Act in 1962 and an increase in funding, captioned educational and training films became available (Propp, 1978). Further developments occurred and CFD expanded its function to include a systematic screening and selecting of films. Preparation of study guides based upon new films entered into the educational library and the organizing of workshops for writing captions (Parlato, 1977). In 1967, CFD became the Media Services and Captioned Films Branch (Gough, 1968). The name was again changed in 1974 to Captioned Films and Telecommunication's Branch (Stepp, 1981).

Among the activities initiated and sponsored by Captioned Films and Telecommunications (CF&T) was the captioning of television broadcasts. CF&T funded the captioning center at WGBH in Boston which captioned the ABC News, Zoom, and the French Chef. All of the shows displayed open captions which were a part of the regular broadcast. That is, the captions
were displayed on every television set carrying the program. Since viewers with adequate hearing may find the captions disrupting it was not feasible to allow many programs to be open captioned (Lucyk, 1979).

In 1971 as an alternative to open captioning, the National Bureau of Standards in cooperation with ABC Television Network demonstrated a system allowing captions to be viewed only on television sets equipped with decoding devices (Caldwell, 1981). This development, known as closed captioning, converted dialogue into electronic codes which were then inserted onto Line 21 on a regular television set. Since Line 21 is not visible on the screen a special decoding device is necessary to display the captions.

The success of closed captioning led to the establishment of the National Captioning Institute (NCI) in 1979. ABC, NBC, and PBS agreed to allow NCI to caption some of their programs and Sears, Roebuck and Company assumed the responsibility of marketing a decoding device for regular television sets (Caldwell, 1981). Spurred on by the enthusiastic response from Deaf and Hard-of-hearing viewers NCI experimented with live captioning which is the process of preparing captions from advance copies of speeches and then storing them for later replay in unison with a speaker's delivery (Caldwell, 1981). Inevitably the success of live captioning will be followed by technical changes permitting real-time captioning. Real-time
captioning is the instantaneous conversion of spoken conversation into print. Stuckless (1981) spoke of real-time graphic display as being the "presentation of language in printed or written form to one person as it is being generated orthographically or through speech by another." (p. 291) Thus, the advent of real-time captioning will not be limited to television but ultimately incorporated into a technical device that converts speech to print during interpersonal conversations.

Until recently, captioning in Canada has consisted of programs from United States with a few Canadian based shows being captioned by NCI for broadcast on CBC. However, in 1981, the federal cabinet approved funding for a Canadian Captioning Development Agency (CCDA) that is expected to become operational by mid-1982 (Canadian Coordinating Council on Deafness, 1981).

The importance of the historical development of captioning is the communication link that it provides for Deaf and Hard-of-hearing individuals. Stepp (1981), referred to education as being a "process of communication between the learned and his society." (p. 265) From a sociological and psychological perspective, the Deaf and Hard-of-hearing consumers of captioned television will be better able to communicate with others due to their newly acquired access to current information and entertainment (Caldwell, 1981). This area is still relatively new. Blatt and Sulzer (1981) concluded
in their report of a national survey of captioned television
viewers that there is a need to assess the impact of captioned
television as a mechanism for entertainment, education,
citizenship, and socialization in a culture influenced by
television.

From an educational viewpoint captioning offers a
potentially effective approach to the teaching of English.
Stuckless (1981) delineated three common approaches used in the
schools as being amplification and auditory training, intensive
language instruction focused on structure and vocabulary, and
manual communication. He then suggested that real-time graphic
display may be a viable fourth approach. Language is
sequentially processed by the ears and eyes. Whereas, the ears
are adapted to the processing of temporal-sequential information
the eyes are able to process spatial-sequentially. Captions are
a temporal sequential event. However, because of the necessity
of including vision and its spatial-sequential processing
abilities Stuckless (1978) proposed that with the aid of
technology the true language for many Deaf can be the
spatial-sequential language of written and printed English.

Although, one might argue whether a graphic form of English
can constitute a true language, it is tempting to postulate that
captions will inevitably assist in the acquisition of the
English language. Withrow (1981) calculated that an average
preschool child watches television approximately 35 hours/week.
This translated into 175,000 passive word experiences weekly. When print is associated with the action on the television screen, this may be the source of a strong motivation to read. Clarke School for the Deaf have recognized the importance of exposing children to printed English and have a campus-wide cable system that is installed in all classrooms, dormitory playrooms, teacher residences, and staff quarter (Canon, 1980). Widespread exposure to well-written captions helps to directly attack communication problems and develop overall linguistic competence (Caldwell, 1981). A study by Norwood (1976) showed that Deaf adults performed better on recall tests when viewing a captioned news broadcast than a interpreted news broadcast. The participants also expressed a preference for captions over interpreted news.

Television captioning is still a relatively novel experience. Subsequently, research is lacking with regards to specific characteristics of the captions. One study by Braverman (1981) attempted to determine effective captioning strategies for students nine to eighteen years of age. Using three levels of linguistic complexity it was found that there was no significant difference between the levels. This indicated that the students were able to understand captions containing fourth-grade words, relative clauses in the final position, if/then sentences, negative questions, and infinitive complements. Examining the effects of caption rates it was
shown that comprehension was maintained when captions were presented as fast as 120 words per minute. Braverman suggested that a multilevel captioning approach be implemented to assist lower level readers.

The larger question raised by the advent and widespread implementation of captioned television is whether an increase in the exposure to English language structure will have an effect on the deaf individual's method of communication. Will one tend to rely less upon ASL and use a sign system that follows the English word order? Would there be a significant increase in the overall English competency level of deaf school leavers that coincided with the use of captions to assist in learning English? What then will be the primary signs used by these individuals?
CHAPTER III: RESEARCH DESIGN

The purpose of the present survey was to investigate the views of the adult Deaf community toward the methods of communication used in total communication programs. As indicated in the review of the literature, sign language is not widely used in programs and there were some serious questions raised as to the feasibility of using sign systems. Additionally, opinions of the Deaf community in this respect could not be found in the literature. It is this omission that was addressed in this study. A questionnaire was designed to solicit relevant views toward communication and pertinent information on a respondent's background. The questionnaire was designed to be administered by sign and was given to Deaf adults living in the Greater Vancouver metropolitan area.

Due to the survey instrument including questions for three different users, the first section of the present chapter identifies these users and their contributions. This is followed by a description of the development of the questionnaire and a description of the pilot study performed to determine the suitability of the questions. Sample selection, data collection, and data analyses for the main study are then described in the second section.
DATA GATHERING INSTRUMENT

A. Background.

The questionnaire represented a joint effort of two user groups and the author. The two user groups were the Greater Vancouver Association of the Deaf (G.V.A.D.) and the Western Institute for the Deaf Interpreter's Committee. The G.V.A.D. was concerned with issues related to association membership, Deaf community involvement, and consumer issues. The interpreter's committee, which the author chaired, was specifically interested in issues related to interpreting. Therefore questions relevant to and prepared by these two groups were included in the questionnaire. The bulk of the questionnaire, however, was developed by the author and consisted of questions related to the theme of this document.

B. Questionnaire.

The questionnaire, presented in Appendix A, consisted of four sections: subject's personal status inventory; educational background information; subject's expectations of present day educational programs; and opinions on captioning, interpreting, and other services. Pertinent to this document, questions were composed to solicit viewpoints on the role of sign language in a deaf child's early language development, the value of Deaf signs and English signs relative to each other in the development of a deaf child, and the benefit of teachers of the Deaf using Deaf signs for communication. A total of 66 questions was used to
gather the necessary information. Specifically, questions 1-13, 21, 41, 46, and 48 were used to gather bio-demographic information descriptive of the sample. Questions 32-40 dealt with the respondent's viewpoints on the educational aspect of this document.

As indicated above, the majority of the questions were developed by the author. Input was obtained from the literature, particularly for the bio-demographic items (Schien and Delk, 1974; Shragge et al., 1975; Clarke et al., 1977), and from thesis committee members. Question number 9 was taken from the Greater Edmonton Survey of the Deaf sponsored by the Alberta Coordinating Council on Deafness (Shragge et al., 1975); questions 24-30 were slightly modified versions of questions used by VanMetre and Maxwell (1981). These modifications included division of the family category into a parent section and a sibling section; alteration of the communication with peers to show only the mode(s) of communication used by the respondent; deletion of the modes signs and pictures; and addition of the modes Deaf signs and English signs.

The research design of this study may be described as a descriptive survey-questionnaire study. A closed item format was chosen to facilitate compilation and analysis of data. The back of the questionnaire was used to record data in those instances where a respondent volunteered information not specifically requested.
C. Pilot Test.

The questionnaire was pilot tested with a sample of 15 Deaf adults living in the Greater Vancouver area. All of the adults were members of the G.V.A.D. Board of Directors. The respondents were asked to suggest modifications and for their approval.

The result of the pilot test led to only one alteration of the questionnaire: the addition of 'writing' to the list of possible methods of communication in questions 24-30.

Further modifications of the questionnaire format based on suggestions by thesis committee members were made before the final draft was produced. At this point suggested modifications referred to the layout of the questionnaire to facilitate data compilation. Included on the final draft was a coding for each answer to facilitate key punching.

PROCEDURE

A. Sample Selection.

The nature of the survey dictated the use of a sample. Subjects who met the following four criteria were eligible for selection:

1. deaf;
2. 19 years of age or over;
3. able to sign and to distinguish the difference between Deaf signs and English signs; and
4. presently residing in the Greater Vancouver metropolitan area.

Potential subjects were identified at G.V.A.D. social events and through personal contacts of the interviewers (see below). One hundred and sixty-eight subjects so contacted agreed to participate. Although it can be argued that the Deaf community consists largely of those who have a hearing loss, hearing individuals may also be a member provided they meet certain criteria (Baker and Cokely, 1980). However, this survey focused upon those individuals who saw themselves as being deaf. Therefore, five respondents who classified themselves as being hard-of-hearing, and not deaf, and one individual who was not sure were excluded. Thus, the final sample consisted of 162 deaf individuals.

B. Data Collection.

Interviewers were used to ask the questions and record the answers. Although the questionnaire was constructed in such a way that it could be self-administered, the rationale for using interviewers was to ensure comprehension of the questions and solicitation of comments from those reluctant to write them down themselves.

INTERVIEWER TRAINING

Members of the G.V.A.D. served as the interviewers. They were trained at a Board of Directors meeting. Initially, there were 14 potential interviewers who paired up and administered
the questionnaire to each other after being briefed on the recommended procedures of interviewing. The author observed each of the interviewers and was available at all time to respond to any concerns as they arose. Due to the fact that part of the questionnaire was of direct interest to the G.V.A.D. and due to a discussion with the President of the association, it was decided that each interviewer indicating an interest and confessing an understanding of all questions would be accepted to conduct interviews. This resulted in a final selection of 12 potential interviewers of which eight eventually conducted interviews. It should be noted that all interviewers were fluent in the use of colloquial Deaf signs. Additionally, they were all active in the Deaf community and well known by other community members.

Of the eight interviewers, two did a majority of the interviews. Both were observed during the early stages of interviewing to ensure interviewer consistency (based upon the author's subjective evaluations). Critical techniques looked for included: explanation of the questionnaire's purpose; impartial behaviour while conducting the interview; understanding of questions by the respondents; tolerance for respondents who side-tracked away from the question, intentionally or unintentionally; and ability to keep the focus of the questionnaire in proper perspective during the interview. Progress of all interviewers was monitored through personal
contacts made by the author, the G.V.A.D. President, and by consultation at a Board of Directors meeting which occurred after half of the interviews had been completed. Suggestions and assistance were given when needed, and no quotas were placed on the interviewers with regards to collecting questionnaires. Of the 162 interviews that were used for this study the author conducted approximately two-thirds. The eight members of the G.V.A.D. Board of Directors surveyed the remaining third.

INTERVIEW PROCEDURE

Each interviewer approached a prospective subject and briefly explained s/he was conducting a survey of the Deaf community for the purpose of gathering information for the G.V.A.D., obtaining opinions on interpreting services, and collecting data for the author who is doing a study on deaf children's method of communication in the classroom. The respondents were then asked if they would agree to be interviewed. Verbal consent only was required for the interview to proceed. No persuasion techniques were used, and respondents were allowed to terminate their interviews without prejudice or to request an alternate date.

The interviews began during the last week of February 1982, and were completed by April 17. Each interview required from 30 to 40 minutes to complete.
C. Data Preparation.

The questionnaire contained a coding device that allowed answers to be coded as they were recorded. Each completed questionnaire was checked by the author to ensure that correct codes were used. The numeric code '0' was assigned to any unanswered question and a '9' was used for those questions that were not-applicable to the subject.

The data were then transferred onto a computer file and verified by keypunch operators of the University's Computing Science Center. Additional verification procedures consisted of examining a printout of frequency tables for each item for out of range responses. On the whole the error rate was very low with 11 errors being detected out of a possible 76,626 allotted computer spaces.

Comments were recorded directly onto the questionnaire by the interviewers. These were not in any ways altered so as to conform to a convenient category. Rather, they were used during the process of discussing the results. The ones selected to be quoted in this document are representations of an English translation of the subject's sign language.

D. Data Analysis.

Reporting and analyses of the data were conducted using two procedures. The demographic characteristics were tabulated to show a frequency distribution of the responses. The following demographic variables were considered:
1. age
2. gender
3. onset of deafness
4. hearing aid usage
5. voice with hearing people
6. communication first learned
7. age learned to sign
8. social group preference
9. Deaf community membership
10. dormitory experience
11. decoder
12. preference for captioned or interpreted news
13. comprehension of captions on television.

The overall viewpoints of the subjects as indicated in their responses to the affective questions were likewise tabulated for each of the following variables:

1. type of signing to be initially acquired
2. time at which a deaf child should learn to sign
3. frequency of use of Deaf signs with a teacher
4. frequency of use of English signs with a teacher
5. frequency of use of Deaf signs with a child
6. frequency of use of English signs with a child.

By themselves, characteristics and opinions do not allow examination of the relationship between the two sets of variables and, consequently, of the relevant factors that may
influence the viewpoints of the respondents. Therefore, crosstabulations of the demographic variables with the affective variables were prepared and the corresponding chi-square for independence computed. The level of significance for this test was established at five percent. This significance level was selected to increase the possibility of establishing a pattern among the variables that, because of the overall increase in the possibility of a Type I error, would need to be confirmed in future studies. All analyses were computed using the SPSS: Statistical Package for the Social Sciences: Version 8.00 (Nie, N.H., et.al., 1975). The subprograms used were FREQUENCIES, CROSSTABS, and STATISTICS (option 1). All data were stored and analyzed on an AMDAHL 470 V/8 computer maintained by the Computing Center.
CHAPTER IV: RESULTS

The purpose of this study was to obtain the viewpoints of the Deaf adult community toward the use of sign language in the classroom. To address this issue questions were designed to compare the opinions of Deaf people towards Deaf signs and English signs. Questions were also included to obtain the reaction of the Deaf population towards the role of sign language in the early language acquisition of a deaf child and the use of Deaf signs by teachers of the Deaf.

This chapter is divided into two parts. Initially, a review of the results descriptive of the bio-demographic characteristics of the sample and the responses of the total sample to the the affective questions concerning respondent's viewpoints toward communication are presented. Subsequently, results from the data analyses on the influence of the demographic variables on viewpoints will be provided. The second part of the chapter will examine the sample characteristics related to the respondent's methods of communication. Similarly, these will be analyzed to determine their impact upon viewpoints.
PART 1: POPULATION CHARACTERISTICS

Age. The minimal age requirement for this survey was 19 years. A year by year frequency distribution revealed that the ages of the subjects ranged from 19 years to 92 years. As shown in Table 1, 36.6% were 19-30 years old, 33.5% were 31-44 years old, and 29.8% were 45 years and older.

Gender. Eighty-six of the respondents were male, representing 53.1% of the total sample (see Table 1). It is interesting to note that the relative proportions of the sexes are in line with other studies. Clarke et.al.(1977) in a study on school aged hearing impaired students in British Columbia found that 53.4% of the students were male. A higher incidence of deafness in males was also found in a study on the United States deaf population by Schein and Delk (1974). Their study showed that the males composed 58.7% of the population and the females 41.3%.

Onset of deafness. It is a common occurrence in the literature to divide onset of deafness into the following two categories: prelingual (0-2 years) and postlingual deafness (2 years and over). Adopting these categories, the sample consisted of 119 (79.6%) prelingually Deaf adults (see Table 1). Of the postlingually deaf adults (20.4%), approximately four-fifths became deaf by the age of five. The latest reported age for onset of deafness was 20 years.
**TABLE 1**

DEMOGRAPHIC CHARACTERISTICS OF THE FINAL SAMPLE

<table>
<thead>
<tr>
<th>Demographic Characteristic</th>
<th>frequency</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 - 30 years</td>
<td>59</td>
<td>36.4%</td>
</tr>
<tr>
<td>31 - 44 years</td>
<td>54</td>
<td>33.3%</td>
</tr>
<tr>
<td>45 years and above</td>
<td>48</td>
<td>29.6%</td>
</tr>
<tr>
<td>missing data</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>2. Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>male</td>
<td>86</td>
<td>53.1%</td>
</tr>
<tr>
<td>female</td>
<td>76</td>
<td>46.9%</td>
</tr>
<tr>
<td>3. Onset of deafness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 - 2 years</td>
<td>119</td>
<td>79.6%</td>
</tr>
<tr>
<td>2 years and above</td>
<td>43</td>
<td>20.4%</td>
</tr>
<tr>
<td>4. Hearing aids usage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>all the time</td>
<td>29</td>
<td>17.9%</td>
</tr>
<tr>
<td>some of the time</td>
<td>27</td>
<td>16.7%</td>
</tr>
<tr>
<td>never</td>
<td>105</td>
<td>64.8%</td>
</tr>
<tr>
<td>missing data</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>5. Communication system first learned</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sign language</td>
<td>38</td>
<td>23.5%</td>
</tr>
<tr>
<td>speaking</td>
<td>80</td>
<td>49.4%</td>
</tr>
<tr>
<td>both, sign language and speaking</td>
<td>39</td>
<td>24.1%</td>
</tr>
<tr>
<td>others</td>
<td>4</td>
<td>2.5%</td>
</tr>
<tr>
<td>6. Age learned to sign</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 - 4 years</td>
<td>28</td>
<td>17.3%</td>
</tr>
<tr>
<td>5 - 9 years</td>
<td>94</td>
<td>58.0%</td>
</tr>
<tr>
<td>10 - 18 years</td>
<td>32</td>
<td>19.8%</td>
</tr>
<tr>
<td>19 years and above</td>
<td>8</td>
<td>3.1%</td>
</tr>
<tr>
<td>7. Voice with Hearing people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>always</td>
<td>52</td>
<td>32.1%</td>
</tr>
<tr>
<td>sometimes</td>
<td>78</td>
<td>48.1%</td>
</tr>
<tr>
<td>never</td>
<td>31</td>
<td>19.1%</td>
</tr>
<tr>
<td>missing data</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>8. Dormitory experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>109</td>
<td>67.3%</td>
</tr>
<tr>
<td>no</td>
<td>53</td>
<td>32.7%</td>
</tr>
</tbody>
</table>
Hearing aid usage. Within the sample, 64.8% of the people did not presently wear a hearing aid, while 17.9% indicated that they wore a hearing aid all the time and 16.7% some of the time (see Table 1).

Communication system first learned. Nearly half of the sample (49.4%) first learned to speak (see Table 1). Almost equal percentages, 23.5% and 24.1% respectively, learned to sign first or to sign and speak at the same time. A very small proportion (2.5%) acquired a communication system other than the above and which was commonly referred to as a form of gesturing.

Age learned to sign. To provide a frame of reference, the typical ages at which students begin and graduate from school were used to help respondents identify the age range during which they began to learn to sign. Slightly less than one-fifth (17.3%; see Table 1) began to use signs between the ages 0 and 4 years, or the pre-school years. More than half (58.0%) began to sign between 5 and 9 years. This dropped to 19.8% from 10 through 18 years. And from 20 to 37 years 3.1% of the sample learned to sign.

Voice with hearing people. Nearly half (48.1%) of the respondents stated that they sometimes used their voices with Hearing people (see Table 1). Another third (32.1%) reported they always used their voices, while the remaining fifth (19.1%) reported they never used their voice. It should be noted that
the absence of voice does not necessarily imply an absence of speech. In some instances voiceless lip movements will suffice for the communication needed as, for example, when ordering food in a restaurant.

Dormitory experience. Two-thirds (67.3%) of the respondents indicated that they lived in a dormitory at one time or another, while 32.7% reported that they had not (see Table 1).

TABLE 2
PREFERENCE FOR SOCIAL GROUP AND COMMUNITY MEMBERSHIP

<table>
<thead>
<tr>
<th></th>
<th>frequency</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Social group preference</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaf</td>
<td>59</td>
<td>36.4%</td>
</tr>
<tr>
<td>Hard-of-hearing</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Hearing</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>Deaf and Hard-of-hearing</td>
<td>13</td>
<td>8.0%</td>
</tr>
<tr>
<td>Deaf and Hearing</td>
<td>23</td>
<td>14.2%</td>
</tr>
<tr>
<td>Hard-of-hearing and Hearing</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>Deaf, Hard-of-hearing, and Hearing</td>
<td>65</td>
<td>40.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>2. Deaf community membership</strong></th>
<th>frequency</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>full-time</td>
<td>89</td>
<td>54.9%</td>
</tr>
<tr>
<td>part-time</td>
<td>68</td>
<td>42.0%</td>
</tr>
<tr>
<td>not a member</td>
<td>5</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

Social-community membership. In response to the question "Which group describes the people you like to be with most of the time?", 40.1% responded that they preferred the group Deaf,
Hard-of-hearing, and Hearing (see Table 2). The second most frequently mentioned preference was with the Deaf only, 36.4%. The two next most frequently mentioned groups were the Deaf and Hearing, 14.2% and the Deaf and Hard-of-hearing, 8.0%. All other groups were preferred by less than one percent of the sample. It is obvious from these results that the Deaf prefer associating with other Deaf people; taken together the groupings that included Deaf people accounted for 98.7% of the total response.

A majority of the sample (54.9%) stated that they were full-time members of the Deaf community. Fewer people (42.0%) saw themselves as being part-time members and a very small percentage felt that they were not members.

Captioned television. Four questions were directed toward the use and understanding of captioned television. Sixty-three percent of the respondents reported they owned a decoder (see Table 3). More than two-thirds, 71.6%, indicated a preference for captioned news. A majority, 58.6%, of the respondents claimed to understand captions most of the time, while approximately a third, 30.9%, indicated they understood captions part of the time.
## TABLE 3
CAPTIONED TELEVISION STATISTICS

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Possession of decoder</strong></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>102</td>
</tr>
<tr>
<td>no</td>
<td>60</td>
</tr>
<tr>
<td><strong>2. News preference</strong></td>
<td></td>
</tr>
<tr>
<td>captioned</td>
<td>116</td>
</tr>
<tr>
<td>interpreted</td>
<td>34</td>
</tr>
<tr>
<td>cannot decide</td>
<td>12</td>
</tr>
<tr>
<td><strong>3. Comprehension of captions</strong></td>
<td></td>
</tr>
<tr>
<td>most of the time</td>
<td>95</td>
</tr>
<tr>
<td>part of the time</td>
<td>50</td>
</tr>
<tr>
<td>no</td>
<td>1</td>
</tr>
<tr>
<td>depends on the program</td>
<td>9</td>
</tr>
<tr>
<td>missing data</td>
<td>7</td>
</tr>
<tr>
<td><strong>4. English improvement</strong></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>133</td>
</tr>
<tr>
<td>no</td>
<td>9</td>
</tr>
<tr>
<td>don't know</td>
<td>19</td>
</tr>
<tr>
<td>missing data</td>
<td>1</td>
</tr>
</tbody>
</table>

A large number (82.1%) agreed that captioned television was helping them to improve their English. About one in ten (11.7%) did not know if it was, while 5.6% said that captioned television did not improve their English. This question did not attempt to determine what components of English (e.g., writing skills, vocabulary) that were improved. Instead the
questionnaire contained space for comments that will be discussed later in this document.
In response to the question "Should most deaf children learn to sign?", nearly all of the subjects (98.1%) agreed that deaf children should learn to sign (see Table 4). This result provides a strong indication of the value that Deaf adults attach to signing.
When faced with deciding the type of signs that deaf children should learn almost half of the respondents (45.7%) felt that both Deaf and English signs should be learned simultaneously. This was followed by a third (33.3%) opting for Deaf signs only and a fifth (20.4%) agreeing that English should be learned first.

When sign language was compared with speech, half (49.4%) of the subjects felt that sign language should be the first language learned. Thirty-eight percent agreed that children should learn to sign as they are learning to speak. A low percentage (9.3%) felt that a child should learn to speak before learning to sign. These results are indicative of a strong viewpoint (87.1%) that a child should learn to sign at the earliest age possible.

Benefit of a bilingual knowledge of signs. More than four-fifths (82.7%) of the respondents were of the opinion that English signs are an important addition to a child's communication (see Table 5). Only 6.8% felt that English signs would not be necessary and 9.9% did not know whether or not they should be learned.

Likewise, a high proportion, 83.3%, felt that Deaf signs should still be learned even if a child knew English signs. Very few, 6.8%, did not see the necessity of learning Deaf signs once English signs were known and 9.3% did not know if Deaf signs should be learned or not. It is evident that a bilingual
knowledge of signs is a favoured proposition of the sample.

**TABLE 5**

**BILINGUAL ACQUISITION OF SIGNS**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. English signs for Deaf sign users</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>134</td>
<td>82.7%</td>
</tr>
<tr>
<td>no</td>
<td>11</td>
<td>6.8%</td>
</tr>
<tr>
<td>don't know</td>
<td>16</td>
<td>9.9%</td>
</tr>
<tr>
<td>missing data</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td><strong>2. Deaf signs for English sign users</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>135</td>
<td>83.3%</td>
</tr>
<tr>
<td>no</td>
<td>11</td>
<td>6.8%</td>
</tr>
<tr>
<td>don't know</td>
<td>15</td>
<td>9.3%</td>
</tr>
<tr>
<td>missing data</td>
<td>1</td>
<td>0.6%</td>
</tr>
</tbody>
</table>

**Proper signs for deaf children and teachers.** Approximately two-fifths (37.7%) of the respondents felt that Deaf signs should always be used by the students with their teachers (see Table 6). One-third (32.7%) agreed that Deaf signs would be appropriate most of the time and one-quarter (25.9%) preferred that Deaf signs only be used part of the time. A very small percentage (3.1%) felt that Deaf signs should not be used at all.
TABLE 6

SIGNS TO BE USED BY THE STUDENTS AND TEACHERS

<table>
<thead>
<tr>
<th>always</th>
<th>mostly</th>
<th>partly</th>
<th>never</th>
</tr>
</thead>
</table>

1. Students

<table>
<thead>
<tr>
<th>Deaf signs</th>
<th>(N)</th>
<th>(%)</th>
<th>English signs</th>
<th>(N)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>61</td>
<td>37.7</td>
<td></td>
<td>58</td>
<td>35.8</td>
</tr>
<tr>
<td></td>
<td>53</td>
<td>32.7</td>
<td></td>
<td>60</td>
<td>37.0</td>
</tr>
<tr>
<td></td>
<td>42</td>
<td>25.9</td>
<td></td>
<td>39</td>
<td>24.1</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>3.1</td>
<td></td>
<td>4</td>
<td>2.5</td>
</tr>
</tbody>
</table>

2. Teachers

<table>
<thead>
<tr>
<th>Deaf signs</th>
<th>(N)</th>
<th>(%)</th>
<th>English signs</th>
<th>(N)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>61</td>
<td>37.7</td>
<td></td>
<td>67</td>
<td>41.4</td>
</tr>
<tr>
<td></td>
<td>54</td>
<td>33.3</td>
<td></td>
<td>61</td>
<td>37.7</td>
</tr>
<tr>
<td></td>
<td>41</td>
<td>25.3</td>
<td></td>
<td>31</td>
<td>19.1</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3.7</td>
<td></td>
<td>4</td>
<td>2.5</td>
</tr>
</tbody>
</table>

3. Deaf signs for teachers

<table>
<thead>
<tr>
<th>frequency</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>146</td>
</tr>
<tr>
<td>no</td>
<td>5</td>
</tr>
<tr>
<td>cannot decide</td>
<td>1.0</td>
</tr>
<tr>
<td>missing data</td>
<td>1</td>
</tr>
</tbody>
</table>

The group responded quite similarly to the use of English signs, although this time the choice "English signs most of the time" received the highest percentage (37.0%). English signs all the time recorded 35.8% of the responses and English signs part of the time received 24.1%. Again, a very small percentage (2.5%) felt that English signs should not be used at all.
Regarding the question of teachers using Deaf signs, the results were similar to those obtained for deaf children. Deaf signs used all the time received the highest percentage (37.7%) which was identical to the percentage received for deaf children. A third of the group felt teachers should use Deaf signs most of the time, and 25.3% felt that only part of the time should teachers use Deaf signs. Only 3.7% saw no place for Deaf signs in a teacher's communication system with students.

In contrast with the signing of deaf children, viewpoints concerned with teachers' signs revealed that English signs, received the highest support (41.4%) for full time usage. Next there were 37.7% that felt that the teacher should use English signs most of the time and 19.1% considered part of the time to be sufficient. Only one in forty (2.5%) of the respondents did not believe that English signs should be used by the teacher signing to the teacher.

Comparing students' and teachers' signing, there is a tendency amongst the subjects to see English signs as being more appropriate when used by teachers.

An overwhelming majority (90.1%) felt that teachers of the Deaf should learn deaf signs. A small percentage (3.1%) did not think that this should be the case, and twice as many (6.2%) could not decide. This is interesting information, as many Hearing teachers of the Deaf do not know Deaf signs.
Involvement of Deaf people in deciding educational policies for deaf children. A strong majority (84.6%) agreed that there was a need for Deaf involvement in educational policies (see Table 7). Only one in forty (2.5%) did not see the need for this involvement, and 13% could not decide.

**Table 7**

DEAF INVOLVEMENT IN EDUCATIONAL POLICIES

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>137</td>
<td>84.6%</td>
</tr>
<tr>
<td>no</td>
<td>4</td>
<td>2.5%</td>
</tr>
<tr>
<td>cannot decide</td>
<td>21</td>
<td>13.0%</td>
</tr>
</tbody>
</table>
CROSSTABULATIONS AND CHI-SQUARES

In the previous sections, the bio-demographic characteristics of the sample, their viewpoints on captioned television, their opinions with regards to deaf children's methods of communication, and their support for the involvement of Deaf people in the determination of educational policies were examined separately. In the present section the results of the Chi square analysis of the possible relationship between selected bio-demographic variables and the affective variables related to methods of communication are presented in summarized form. The corresponding two way tables for those cases in which a significant relationship was found are presented in Appendices B and C.

**Age.** A greater percentage of Deaf adults over 30 years of age favoured the learning of Deaf signs (44.4% and 41.7%) or both Deaf and English signs (37.0% and 41.7%) first (p<0.02; see Table B1). While over half (57.6%) of the youngest group indicated that both Deaf sign and English signs should be learned together, only 16.9% would like to see Deaf signs be initially acquired. The remaining 25.4% favoured the deaf child learning to use English signs first.

Focusing on the question of when a child should learn sign language, a statistical problem was encountered, since two out of nine cells had an expected cell frequency of less than 5 (see Table B2). However, since there is an obvious difference in the
opinions of the younger group as compared with the older group, it was decided to report it at this point. Additionally, one of the low cell frequencies (n=0) resulted from not one of the 51 middle aged subjects selecting English as the only language deaf children should first learn. This is a very strong statement that may have resulted from the influence of an oral education, which was in vogue during their years of education.

Related to opinions concerning the age at which a child should learn sign language there was some discrepancy evidenced with respect to the age of the respondents (p<0.002, see Table B2). The general trend has all the groups agreeing that sign language should either be the first language learned or one of the first. This opinion becomes stronger with age. Speech by itself is not seen to be an important aspect of a child's first language, although it is seen to be desirable when learned with sign language. The oldest group were the least supportive of learning both sign language and speech together (26.1% versus 44.1% and 45.1%).

Finally, there was no difference between age groupings with respect to viewpoints on the use of Deaf signs and English signs in the classroom. That is to say, the age of the respondents was not found to be an influential factor in this regards.

Gender. Crosstabulations by gender revealed no significant results. Thus, it would appear that both male and female adults hold the same opinions regarding type of signs to be initially
acquired, the time at which signs are to be learned, and the kind of signs to be used in the classroom.

Onset of deafness. Age of onset of deafness of the respondents was significantly related to the amount of time the respondents felt teacher's should spend using Deaf signs (p<0.02; see Table B3). While a larger proportion of the prelingual group than the postlingual group felt that teachers should always use Deaf signs (43.4% versus 24.2%), a larger proportion of the latter group felt that teachers should use Deaf signs most of the time (54.5% versus 28.7%).

Age of onset of deafness was not significantly related to the remaining variables. Taken together, it would appear that onset of of deafness is not a major factor in the opinions of the respondents.

Hearing aid usage. When the variable hearing aid usage was crossed with the time at which a child should learn to sign, a significant chi-square (p<0.002) was found (see Table B4). Although one of the cells had a cell frequency less than five it was felt that the pattern observed and the level of significance obtained warranted commenting on this result. A majority of the people who never wore hearing aids (60.2%) felt that sign language should be learned first. This contrasts with 35.7% of the group that always wear a hearing aid, and 33.3% for the group that sometimes do. For those who wore an hearing aid all of the time or some of the time, the largest numbers felt that
sign language and speech acquisition should be concurrent (39.3% and 58.3% respectively). Further discrepancy was noted where speech was given precedence over sign language. Bearing in mind that the overall percentage was low (9.0%), it is seen that those who wear hearing aids all of the time responded affirmatively to the suggestion that signs be learned after speech has been acquired at a higher percentage (25.0%) than the others (8.3% and 4.9%).

Thus, those people who rely upon auditory support for some communication skills tend to give more weight to the importance of speech. However, the overwhelming majority of all groups preferred that sign language be acquired at an early age. Furthermore, there was no significant difference found in the opinions of hearing aid users and non-users with regards to the type of signs that are to be acquired or used in the classroom. The use of a hearing aid tends only to affect one's viewpoints of the relative roles of signs and speech in a deaf child's communication.

Age learned to sign. The age at which a person learned to sign was not found to be a factor in the viewpoints of the subjects. Thus, it would appear that those who acquired sign language at an early age hold the same viewpoints as those who acquired sign language at a later age with respect to the type of signs to be initially acquired, the time at which signs are to be learned, and the kind of signs to be used in the
Use of voice with hearing people. A significant chi-square (p<0.04) occurred when this variable was crossed with the question of which signs should be learned first (see Table B5). The only group to show a majority preference (60.8%) consisted of those who always use their voices. They preferred that a child learn Deaf signs and English signs together. Within the same group, an identical proportion (19.6%) felt that one or the other should be initially acquired. For the group using their voice some of the time, the bilingual acquisition of signs and acquisition of signs only were preferred by more equal percentages (43.6% and 38.5%). For people who never used their voices, Deaf signs were favoured by the largest number (41.9%).

The critical observation is that those who used their voices all or part of the time deemed both Deaf and English signs to be important; whereas, those who did not saw Deaf signs as being the primary language during initial sign language acquisition.

Social group preference. Social group preference refers to the group of people whom the subjects most often liked to associate with. No significant chi-squares were revealed. Thus, the social preference of an individual has little or no effect on the characteristics of a group's consensus.
**Communication first learned.** The results for type of communication first learned by the subject, indicated that when the question of interest revolved around the type of signs to be initially acquired a significant chi-square was found (p<0.02; see Table B6). Two-thirds (69.2%) of the group that learned sign language and speech simultaneously felt that Deaf and English signs should be learned together. The groups that learned sign language first or that initially acquired speech were more similar in their points of view. A small discrepancy between the two occurred with the selection of English signs with those who learned sign language first being more supportive of English signs than the group that had initially acquired speech (28.9% versus 21.5%).

When communication method first learned was crossed with the responses to the question "When should a deaf child learn to sign?", a significant chi-square (p<0.0001) was revealed (see Table B7). Caution must be exercised here as two out of the nine cells had an expected cell frequencies of less than 5.0. This resulted from very few people indicating that speech only should be initially acquired. Specifically, only 5.4% of the sign language group and 2.6% of the sign language and speech group were in favour of speech being learned before sign language. This is compared with 16.0% for the group that acquired speech before sign language. The other major difference appeared in the selection of sign language as the
child's first language. A large majority (81.1%) of the sign language first group made this their choice.

A third significant chi-square (p<0.003) was observed for the question revolving around the use of Deaf signs by a teacher (see Table B8). The source of the differentiating factor appears to be the bilingual group. Nearly two-thirds (65.8%) of these people felt Deaf signs should be used all of the time. This can be compared with 34.3% for the sign language group and 27.3% for the speech group.

Thus, the communication first learned by the adults does seem to have a significant role in determining the opinions held toward Deaf signs in early language acquisition and Deaf signs used by the teacher in the classroom.

Deaf community membership. The two categories of membership that were crosstabulated were the full-time and part-time members and two significant chi-squares were found: with which signs a child should initially acquire (p<0.008; see Table B9) and use of Deaf signs by the teacher (p<0.02; see Table B10). The first result stemmed from the full-time group giving more preference to Deaf signs than did the part-time group (43.8% versus 22.1%) while the part-time group favoured English signs more than the full-time members (29.4% to 14.6%).

Approximately 80% of the full-time group felt that teachers should use Deaf signs most or all of the time with their students, while slightly more than 60% of the part-time members
felt this way.

**Dormitory experience.** Nearly all of those adults who spent at least one year living in a dormitory while at a school for the Deaf favoured the learning of signs at or before the learning of speech (36.2% and 61.0%; see Table B11). Conversely, nearly a quarter of those who had not lived in a dormitory favoured the learning of speech first.

Apparently, dormitory experience influences respondent's opinion with regards to the time at which signs should be learned. However, there were no significant findings observed when dormitory experiences were related to type of signs to be used in the classroom.

**Decoder.** The ownership of a decoder did not seem to have an effect on the subject's opinion toward methods of communication for a deaf child.

**Preference for captioned or interpreted news.** A significant relationship was observed (p<0.03) between preference for captioned or interpreted news and teachers using Deaf signs with their students (see Table B12). Those who preferred captioned news felt more strongly about teachers using Deaf signs all the time than did those who preferred interpreted news (44.0% versus 26.5%). The interpreted news group responded more favourably to Deaf signs being used most of the time (52.9% versus 28.4%).

Other than with method of communication in the classroom no other significant relationship could be found involving the
variable preference for captioned or interpreted television.

Understanding of captions on television. Of the possible responses to the question "Do you understand the captions on television?" only two, comprehension of captions most of the time and part of the time, had a sufficient number of responses to be entered into the crosstab analyses of caption comprehension with the variables related to methods of communication (see Table 3). One significant chi-square (p<0.02) was found: caption comprehension was significantly related to which signs should be first learned (see Table B13). Of those who reported they understood captions most of the time, 87.2% suggested that Deaf signs should be taught either before or at the same time as English signs while 68% of those who indicated they understood some of the captions felt this way. The other source arises from the part of the time group favouring English signs more than the most of the time group.

A subject's comprehension of television captions was not found to be related to viewpoints concerned with the time at which signs are to be learned and with methods of communication in the classroom.
PART 2: METHODS OF COMMUNICATION

The second part of the data analyses was concerned with methods of communication. Two questions were asked. The first one addressed the methods of communication most used by the respondents. The second question dealt with their preference for a method of communication given that they could only use one method. The results are displayed in Tables 8 and 9.

The respondents were asked to indicate the method of communication they used for each group and activity shown in Table 8. More than one method was permitted within each group or activity. Thus, the numbers reported provide in Table 8 an indication of the number and percentage of the full sample of 162 who used each method with a specific group of people or in a particular activity. Consequently, the total frequency and percentage may exceed 162 and 100 percent respectively. For example, under the heading 'work' a subject may respond that s/he uses fingerspelling, speech, and writing most of the time.

Conversely, when asked to state their preferred method, the respondents were allowed to choose only one method of communication. Again the percentage in each cell represented a part of the total sample population (162), but in this case the "column" sums are 100%.
To maintain the focus of this paper an overview of Tables 8 and 9 will be presented. Subsequently, selected crosstabulations of these demographic variables with the affective variables will be discussed with the tables corresponding significant relationships presented in Appendix C.

Method of communication presently used. As shown in Table 8, Deaf signs are used by at least 95% of the sample when conversing with deaf friends or at Deaf social events. This expectedly high percentage supports the contention by many researchers that knowledge of Deaf signs (American Sign Language) is a prerequisite for membership in a Deaf community (Higgins, 1980; Baker and Cokely, 1980; Kannapell, 1982). There were 65.4% who used Deaf signs at home and 37.0% with hard-of-hearing friends. Almost one in five (18.5%) used Deaf signs at work. It would have been interesting to determine the characteristics of the people, at home and in the workplace, with whom Deaf signs were used. Such information would provide an insight into the extent to which Deaf signs are used outside the circle of Deaf people.

The use of English signs was highest with Hard-of-hearing people (25.3%). Following this was the use of English signs with Deaf people (17.3%). A low percentage (12.3%) sign this way with hearing friends. Since English signs are more easily understood by Hearing people one would have expected a higher
percentage here. However, in light of the fact that almost as many people (11.7%) used Deaf signs with hearing friends, a

**TABLE 8**

**METHOD OF COMMUNICATION PRESENTLY USED**

<table>
<thead>
<tr>
<th>METHOD OF COMMUNICATION</th>
<th>DEAF FRIENDS</th>
<th>HARD-OF-HEARING FRIENDS</th>
<th>HEARING FRIENDS</th>
<th>HEARING PEOPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deaf signs</td>
<td>155</td>
<td>60</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>95.7%</td>
<td>37.0%</td>
<td>11.7%</td>
<td>3.7%</td>
</tr>
<tr>
<td>2. English signs</td>
<td>28</td>
<td>41</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>17.3%</td>
<td>25.3%</td>
<td>12.3%</td>
<td>3.1%</td>
</tr>
<tr>
<td>3. Fingerspelling</td>
<td>14</td>
<td>36</td>
<td>38</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>8.6%</td>
<td>22.2%</td>
<td>23.5%</td>
<td>4.3%</td>
</tr>
<tr>
<td>4. Gestures</td>
<td>9</td>
<td>23</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>5.6%</td>
<td>14.2%</td>
<td>16.7%</td>
<td>14.8%</td>
</tr>
<tr>
<td>5. Speaking</td>
<td>4</td>
<td>51</td>
<td>78</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>2.5%</td>
<td>31.5%</td>
<td>48.1%</td>
<td>40.7%</td>
</tr>
<tr>
<td>6. Writing</td>
<td>6</td>
<td>19</td>
<td>81</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>3.7%</td>
<td>11.7%</td>
<td>50.0%</td>
<td>77.2%</td>
</tr>
</tbody>
</table>

| 1. Deaf signs           | 30           | 106                     | 154            | 9              |
|                         | 18.5%        | 65.4%                   | 95.1%          | 5.5%           |
| 2. English signs        | 24           | 22                      | 22             | 10             |
|                         | 14.8%        | 13.6%                   | 13.6%          | 6.2%           |
| 3. Fingerspelling       | 22           | 21                      | 15             | 11             |
|                         | 13.6%        | 13.0%                   | 9.3%           | 6.8%           |
| 4. Gestures             | 17           | 5                       | 4              | 17             |
|                         | 10.5%        | 3.1%                    | 2.5%           | 10.5%          |
| 5. Speaking             | 47           | 59                      | 5              | 52             |
|                         | 29.0%        | 36.4%                   | 3.1%           | 32.1%          |
| 6. Writing              | 67           | 15                      | 2              | 107            |
|                         | 22.8%        | 9.3%                    | 1.2%           | 66.0%          |
wider range of demographic questions might have demonstrated the peculiarities of the group. For example, it may well have been that the hearing ones who used Deaf signs were spouses, teachers, or interpreters which would bear out these statistics.

Of the remaining methods of communication, the use of speech is perhaps the most relevant to this paper. Nearly half (48.1%) used speech with their hearing friends and 40.7% with hearing people they do not know. In this latter instance Hearing people would include salespeople, bank tellers, waitresses and other people involved in servicing the public. A little more than one third (36.4%) used speech at least some of the time at home. The lowest number (2.5%) spoke with their deaf friends. These figures must be examined carefully as they do not necessarily mean that voice was used with speech. Rather it could be implied that the movements of lips, either with or without voice, was necessary for comprehension of communication.

Finally, it is noted that much communication between deaf and Hearing people is in the form of writing. The categories hearing friends, Hearing people and Hearing social events contained a large number of people who use writing for communication on these occasions (50.0%, 77.2% and 66.0%, respectively).

Preference for method of communication. Here, subjects were asked to select the one method of communication for each group that they would prefer to use given that such communication with
the group would be possible. In six out of eight groups Deaf signs were selected the most. From Table 9 it is seen that almost nine out of ten people preferred this method with deaf friends and in Deaf social events.

TABLE 9

METHOD OF COMMUNICATION PREFERRED TO USE

<table>
<thead>
<tr>
<th></th>
<th>deaf friends</th>
<th>hard-of-hearing friends</th>
<th>hearing friends</th>
<th>hearing people</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deaf signs</td>
<td>143</td>
<td>94</td>
<td>52</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>88.3%</td>
<td>58.0%</td>
<td>32.1%</td>
<td>24.7%</td>
</tr>
<tr>
<td>2. English signs</td>
<td>17</td>
<td>29</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>10.5%</td>
<td>17.9%</td>
<td>13.6%</td>
<td>6.8%</td>
</tr>
<tr>
<td>3. fingerspelling</td>
<td>1</td>
<td>11</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>0.6%</td>
<td>6.8%</td>
<td>7.4%</td>
<td>4.9%</td>
</tr>
<tr>
<td>4. gestures</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>1.9%</td>
<td>0.6%</td>
<td>2.5%</td>
</tr>
<tr>
<td>5. speaking</td>
<td>1</td>
<td>17</td>
<td>36</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>0.6%</td>
<td>10.5%</td>
<td>22.2%</td>
<td>16.7%</td>
</tr>
<tr>
<td>6. writing</td>
<td>0</td>
<td>3</td>
<td>32</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>1.9%</td>
<td>19.8%</td>
<td>42.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>work</th>
<th>home</th>
<th>Deaf social events</th>
<th>Hearing social events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deaf signs</td>
<td>114</td>
<td>66</td>
<td>146</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>70.4%</td>
<td>40.7%</td>
<td>90.1%</td>
<td>27.2%</td>
</tr>
<tr>
<td>2. English signs</td>
<td>19</td>
<td>18</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>11.7%</td>
<td>11.1%</td>
<td>8.0%</td>
<td>11.7%</td>
</tr>
<tr>
<td>3. fingerspelling</td>
<td>6</td>
<td>9</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>3.7%</td>
<td>5.6%</td>
<td>0.6%</td>
<td>1.2%</td>
</tr>
<tr>
<td>4. gestures</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>1.2%</td>
<td>0.0%</td>
<td>1.9%</td>
</tr>
<tr>
<td>5. speaking</td>
<td>18</td>
<td>26</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>11.1%</td>
<td>16.0%</td>
<td>0.6%</td>
<td>16.7%</td>
</tr>
<tr>
<td>6. writing</td>
<td>3</td>
<td>34</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>1.9%</td>
<td>21.0%</td>
<td>0.0%</td>
<td>37.0%</td>
</tr>
</tbody>
</table>
(Note that Tables 8 and 9 cannot be statistically compared relative to one another. Instead relationships within each group must first be determined, then the conclusions drawn here may be utilized for inter-table comparisons.)

In all categories speech preference was seen to be much lower than present usage. For example, where 78 people presently used speech at some time or another with hearing friends, only 36 indicated they preferred to use it. To determine the statistical relevance of this data it would be necessary to know the extent to which the 78 people used their speech and their reliance upon it.

English signs did not appear to be a popular choice. Only one in ten (10.5%) would prefer to use it with deaf friends. Slightly more (13.6%) would use it with hearing friends and the hard-of-hearing group was the highest at 17.9%.

In conclusion, Deaf sign were by far the most popular choice. Surprisingly, given the possibility of everyone being able to learn Deaf signs many Deaf people could still not fathom this as a reality and chose to trust their own experiences when questioned about the signs they would prefer to use with hearing people and during Hearing social events. In these instances it was indicated that writing would be the best manner of communication (42.0% and 37.0% respectively).
CROSSTABULATIONS AND CHI-SQUARE

A total of 384 tables would result if all of Tables 8 and 9 were crossed with the affective variables. Many of these tables would not be valid due to insufficient cell frequencies. As an example, the variable, 'English signs with hearing people' could not be meaningfully analyzed since the contingency table contained expected cell sizes of insufficient number (n=11, see Table 9). Therefore, only selected method of communication variables were crossed (see Appendeix C). Furthermore, all variables selected involved either Deaf signs, English signs, or speech. The significant results will now be discussed. Results of data analyses have been arranged by the affective variables in order to provide a focused description.

Type of signing to be initially acquired. Three method of communication group combination were found to be significantly related to initial language to be acquired. A significant relationship (p<0.001) was found with "use Deaf signs at home" (see Table C1). Where 43.4% of the Deaf signs users at home felt that Deaf signs should be learned first, only 13.7% of the non-users did. Those who do not use Deaf signs were highly supportive (56.9%) of a child learning both Deaf and English signs together, whereas 39.6% of Deaf sign users also felt this way. A higher percentage of the non-users (29.4%) favoured English signs that did deaf sign users (17.0%). However, these results do indicate that a large percentage of both groups feel
that signs should be at least one of the signs initially acquired.

A similar relationship was observed with "preference for use of Deaf signs at home" (p<0.01; see Table C2). Nearly equal percentage of those who preferred Deaf signs at home and those who did not felt that both Deaf and English signs should be learned simultaneously (45.8% and 46.0%). And while 38.9% of those who preferred Deaf signs felt that Deaf signs should be learned first, only 20.8% of the non-users made this choice; one-third (33.3%) of those non-users suggested that English signs should be the initially acquired signs compared to 15.0% for the users.

The third significant (p<0.02) relationship involved "preference for use of English signs at home." Although the expected cell frequency for one of the cell was less than 5, the discrepancy is still large enough to warrant mention. The group preferring English signs were almost equally divided between recommending that both signs should be learned first and English signs should be learned first (47.4% and 42.1%). Nearly the same percent (45.8%) of the "preferred not to use English signs" group felt that both sign methods should be acquired concurrently. They were, however, less in favour of English signs (17.6%); more suggested Deaf signs ought to be learned first (36.6%); in contrast to those who preferred English signs at home (10.5%).
Time at which a deaf child should learn to sign. Three significant chi-squares were found. One (p<0.004) was for the variable "used Deaf signs at home" (see Table C4). Approximately 60% of those who used Deaf signs at home felt that sign language should be learned first. This contrasts with 32.0% for the non-users. Of the Deaf sign users, 33.0% thought that both sign language and speech should be learned together, whereas 54.0% of the non-users felt this way. A small number of both groups believed that speech should be learned first.

The relationship between "use speech at home" and time at which a deaf child should learn to sign was also significant (p<0.006; see Table C5). Sixteen percent of the speakers wanted children to learn to speak first, while 5.2% of the non-speakers did. More of the speakers felt both sign language and speech should be learned concurrently than did the non-speakers (48.2% versus 35.1%). The strongest support for sign language first came from the non-speakers (59.8%). The speakers, however, still gave a fair amount of support (35.7%) for sign language.

A third significant (p<0.002) relationship of times at which sign should be learned was with preference to speak at home (see Table C6). Half (50.0%) of the people who preferred to speak at school suggested both sign language and speech should be acquired together, 31.3% favoured speech being learned first, and 18.0% stated sign language as their preference for children. In contrast the corresponding percentage for the
non-speakers were 37.9%, 7.1%, and 55.0% respectively. Caution must be exercised here, as one out of six cells had an expected frequency of less than 5.0.

**Frequency of use of Deaf signs with a teacher.** Frequency of teacher use of signs was significantly related (p<0.0005) to "use of English signs with deaf friends" (see Table C7). This is clearly in the opposing direction of tendency between the two groups. English sign users were less likely than non-English sign users to see Deaf signs as being a part of a child's communication system with the teacher. For the categories part of the time, most of the time, and all of the time, the English sign users responded affirmatively 57.7%, 23.1% and 19.2% for the group. On the other hand, non-English sign users responded 20.8%, 36.2%, and 43.1% for the respective categories. Obviously, those who use English signs are less inclined to want children to use Deaf signs all of the time, yet, 42.3% wanted them to use it at least most of the time.

The second significantly related variable (p<0.03) was "preference for Deaf signs at home" (see Table C8). There was an opposite trend between the two groups with those preferring deaf signs at home tending to favour more use of Deaf signs by the children with their teachers. From all of the time, to part of the time this group showed 43.8%, 34.8%, and 21.4% support. In contrast, the group not preferring Deaf signs at home were 27.3%, 31.8% and 40.9% in favour of Deaf signs in the respective
categories.

**Frequency of use of English signs with a teacher.** Four significantly related variables were found. First, for those who use speech at home (p<0.04), there was firmer support (47.4%) for the child to use English signs all of the time (see Table C9). The non-users did not feel as strong (31.7%), however, they did feel strong (46.9%) that English signs most of time was an appropriate guideline. Thus on the whole, both groups felt that the child should use English signs at least most of the time, with the non-users coming slightly ahead (78.2% versus 73.7%).

The next three significant relationships all involved a preferred method of communication with hearing friends. People preferring Deaf signs (p<0.007) showed an opposite inclination than those who did not (Table B10). From all of the time, to part of the time, their spread was 23.5%, 37.3%, and 39.2%. This compared with 43.4%, 38.7%, and 17.9% for those who did not prefer Deaf signs with hearing friends.

For those who preferred to use English signs (p<0.0083) a very strong stand on the use of English signs by children was made (see Table C11). One hundred percent of the group (excluding those who stated that English signs should never be used) thought that children should use English signs at least most of the time. A majority (69.9%) of these saw English signs as being used most of the time. The other group were almost
evenly divided amongst the three choices, with English signs all of the time being chosen by 36.8% and most of the time by 34.6%.

Finally, there was a significant relationship (p<0.02) for the 35 people who preferred to speak with hearing friends (see Table C12). They were strong (57.1%) on the child using English signs all of the time compared to 31.1% for those not preferring to speak. The overall response for English signs at least most of the time was 82.8% for the speech group, and the non-speaking group were 72.9% in support.

Frequency of use of Deaf signs with a child. There was a difference in opinions between those who preferred Deaf signs at home and those who did not when the question asked referred to a teacher's frequency of use of Deaf signs with a deaf child (p<0.03; see Table C13). The major difference occurred in the part of the time category, where 20.5% of this group agreed and 41.9% of those who did not prefer Deaf signs agreed. Overall, the group preferring Deaf signs wanted to see teachers using Deaf signs to a greater extent than those who did not prefer Deaf signs.

Frequency of use of English signs with a child. A difference of opinion was evidenced between those who used English signs with their deaf friends and those who did not (p<0.003; Table C14). A majority (71.4%) of these people believed that it was important for teachers to use English signs all of the time, and a low percentage (7.1%) felt that part of
the time was enough. This compares with 36.4% and 21.7% respectively for the other group. Thus, people who use English signs are more in favour of its usage in the classroom.

The significant relationship \( p<0.01 \) which resulted from the cross with the group preferring Deaf signs with deaf friends may in fact not be so since one of the cell frequency was 0.0 (see Table C15). Nevertheless, an apparent wide discrepancy existed where 38.8% of the people preferring Deaf signs felt that a teacher should use English signs all of the time. Conversely, the other group, which only consisted of 18 people, was 72.2% in favour.

There was significant difference \( p<0.02; \) see Table C16) between people who preferred Deaf signs with hearing friends and those who preferred another communication system. Most of the people preferring Deaf signs (37.7%) saw a place for English signs being used most of the time. They were evenly divided for the other two categories (31.4%). The group that did not prefer Deaf signs felt strongly (48.1%) about teachers using English signs all of the time, and relatively few (13.2%) saw it being used only part of the time.

There was a difference in opinion between the group preferring Deaf signs in the home and those who preferred another method of communication \( p<0.01; \) see Table C17). Those that did not prefer Deaf signs felt stronger about English signs being used by the teacher. For the always and mostly
categories, they were 57.4% and 36.2% in favour for a total of 93.6%. The group preferring to use Deaf signs were 36.4% and 39.1% in favour in the same instances, for a total of 75.5%.

In the present chapter, findings taken from the responses of 162 questionnaires were highlighted and displayed. Crosstabulations of demographic and affective variables had been performed and significant data were reported. The following chapter will present a discussion of these results in greater detail.
CHAPTER V: DISCUSSION OF RESULTS

The opinion of the Deaf community has not been a factor in determining educational policies regarding method of communication used with and by deaf children. Deaf adults have not been consulted as to the role and the feasibility of a particular form of communication, nor have the Deaf been surveyed to see if they support present means of sign communication in the classroom.

Presently, the Ministry of Education in British Columbia advocates the use of signed English in all total communication programs. American Sign Language (or Deaf signs) does not receive any recognition either as a language with important cultural values or as one with potential benefit as a means of communication between students and teachers. This remains the case in spite of the fact that ASL is a feature of cultural identity within the Deaf community (Meadow, 1972).

The present study was designed to enhance the implementation of educational communication strategies by gathering and quantifying the viewpoints of the adult Deaf community. To facilitate comprehension of previous results the discussion presented in this chapter is focused upon nine questions related to the subject's expectations of children's methods of communication and upon those questions concerned with captioned television.
Sign Language as a Method of Communication

The overwhelming affirmative response (98.1%) to the question "Should most deaf children learn to sign?" is highly indicative of the strong support the adult Deaf community gives to signing. Although, a pro-signing attitude was to be expected given that all of the subjects were skilled signers the validity of this support still remains. Encroachment of a Hearing and speaking society has not mellowed the value which the Deaf have placed on signing. Possibly, the necessity of survival as a linguistic minority was an influential factor in favouring signing. Additionally, the response of the Deaf offers considerable support to researchers contending that sign language is an identifying characteristic of the Deaf community (Meadow, 1972; Markowicz and Woodward, 1978; Higgins, 1980; Baker and Cokely, 1980).

Further insight as to the reason signing is so heavily favoured is evidenced in comments given by the respondents. There was a pronounced statement from many that signing facilitated communication and allowed for an ease of interaction necessary for socialization. Emphasis was given to signs being a more natural form of communication. That signing is in fact proper for deaf children to learn was succinctly stated by one subject who said that "it is their native language and they learn communication better if it is not tampered with."
Comparison with a spoken language was also put forth in a number of comments. Several subjects noted that signing was "more expressive and had more life" than spoken languages. And where speech was acceptable it was also felt that it should be taught using a "no-force approach" paying special attention to a child's "wishes and interests". Another observed that a "visual language is easier for the Deaf to master just as braille is easier for the blind to read." And still another person concluded that "all children should sign ... (as) years have been wasted on gestures and pretending to understand the spoken language."

Thus, responses to this question revealed that signing should be a key part of a deaf child's communication.

Signs to be Initially Acquired

Dealing with the issue of which signs a deaf child should learn almost half of the respondents (45.7%) felt that both Deaf and English signs should be learned simultaneously. This question revealed a number of discrepancies within the sample population that were related to the demographic variables of age, use of voice with Hearing people, communication method the subject first learned, membership in the Deaf community, understanding of captions on television, and method of communication presently used and preferred to use. Each of these variables will now be discussed.
A substantial number of each age grouping were in support of both Deaf and English signs being learned, however, there was a stronger tendency for the younger to favour both types of signs (see Table B1). This could be interpreted as a more accepting attitude of the younger group towards English signs. The relatively recent implementation of total communication programs is a plausible reason for this discrepancy. The few comments that were offered by young respondents indicated that the use of English signs were to "assist in the development of reading and writing skills." However, a typical comment that was made tends to emphasize that communication is most important. This is exemplified in a quote from a 31 year old subject who stated "Deaf children must first learn Deaf signs while they are under 5 years old. This would help them express their feelings and to demonstrate beautiful expressions."

One might have expected those people who use their voice with Hearing people to be more favourable towards English signs due to their practical application of the English language. The survey supported this expectation when English signs were viewed as part of a bilingual framework. That is, it is the consensus of those who use their voices that English signs will be of benefit provided the deaf child also knows Deaf signs.

Regarding method of communication first learned it might have been hypothesized that given speech is a valuable skill and that speaking is more closely related to a spoken language than
a sign language then one would expect native speakers to be more in support of English signs than native signers. That is, the benefits of learning English signs would be related to the benefits as perceived by English language users. However, in the sample this was not evidenced (see Table B6). In fact, a higher proportion of native speakers responded in favour of English signs than did native signers. This is a profound statement by the Deaf. It has possible implications for a bilingual-bimodal education that encourages the acquisition of signs first, to ensure mastery of the language in a visual mode, followed by the oral usage of the spoken counterpart.

It has been widely stated that ASL is an identifying characteristic of the Deaf community (Meadow, 1972; Markowicz and Woodward, 1978; Baker and Cokely, 1980). Therefore, it is not surprising that those people who considered themselves full-time members of the Deaf community were more supportive of Deaf signs than part-time members (see Table B9). One might assume that the part-time members experience more social contact with Hearing people, thereby having a greater need to use English than the others. These experiences are projected onto future Deaf adults which helps to explain their tendency to support the acquisition of English signs.

The significance of appropriate English usage when interacting with Hearing people was hinted at by a part-time member of the Deaf community favouring the acquisition of
English signs first..."if deaf children are given the basics of good English at an early age then this will save them embarrassment in their later years." However, it is quite possible that for many Deaf adults the learning of Deaf signs is a foregone conclusion, thus this question is interpreted to indicate whether or not English signs are to be learned. Such a possibility is presented in the following comment..."English signs should be first learned to promote better development of English. They (deaf children) will naturally start to use Deaf signs."

The understanding of captions on television demonstrated that those who understood most of the captions showed very little support for English signs being learned first (see Table B13). It is possible that captioned television is influencing those who do not understand much of it into believing that English signs at a young age would help deaf children's grasp of English. Conversely, those who do understand most of the captions on television believed that Deaf signs acquired alone or Deaf and English signs learned together would be most advantageous to the deaf child. Perhaps this is an indication that communication is most important at a younger age. Having mastered a language which is more suitable for their senses to acquire, the child may then extrapolate this knowledge while learning a second language.
Finally, those who either presently use Deaf signs at home and/or prefer to do so also expressed a higher support for deaf children to acquire Deaf signs first, either by itself or with English signs (see Tables C1 and C2). This is reasonable since these subject's present life styles and preferences indicate a strong reliance upon Deaf signs. Likewise, people preferring English signs at home favoured English signs more than Deaf signs. However, it must be noted that a high percentage of all groups tended to favour a bilingual approach in language acquisition. In other words, one's communication style can be used to a small extent to predict one's tendency in expectations of deaf children's language acquisition.

Age to Start Signing

This question addressed the issue of which mode of communication the Deaf community felt was most critical for young deaf children to learn first. It was seen that half the respondents (49.4%) felt that signs should be learned before speech (see Table 4). One might have expected this since signing as a utilized and a preferred means of communication was chosen by a majority of the subjects (see Tables 8 and 9). Possibly, the subjects did not view their own experiences with language acquisition as being advantageous for others to follow. Also, they may have decided that the benefits of signing outweighed those of speaking.
From comments to the previous questions it is observed that signing was seen as a means of providing efficient communication. One example of this was by a lady who had herself first learned to speak. She said that signing "makes it easier to communicate." Although simply stated, this remark was frequently repeated by many. Of further interest were comments on the use of English signs. The advantages of learning English signs were always related to orthographic representation of English and not to speech.

When analyzed by age it was noted that all age groups were in favour of having signs learned either first or in conjunction with speech (see Table B2). An interesting statistic was revealed by the 51 respondents in the age group 31-44 years. Not one of them felt that speech should be learned first, whereas the younger group showed the largest (18.6%) support for speech being learned first. Perhaps this is an indication of the effects of an oral versus a total communication program. Total communication for all ages was not adopted in British Columbia until the early seventies and until then all elementary programs were oral. It may well be that an oral education at a younger age, serves to stigmatize the advantages of speech. This analysis of the data is not within the scope of this document, however, it is to be hoped that later investigations will lend some insight into this question.
Data provided by users of hearing aids demonstrated that those who wear them felt signs and speech acquired simultaneously or signs learned by itself were most appropriate (see Table B4). Only those who wore their hearing aids all of the time gave any sizeable support (25.0%) to speech being learned first. However, even with hearing aid users sign language remains the most valuable communication means. It would be interesting to determine the relative value of speech and hearing aids as discerned by the Deaf. Historically, these two facets have been the centerpiece in education of the Deaf. Whether for the purpose of assimilating the Deaf into or interacting them with hearing members of society much money has been invested in these areas (Vernon, 1973). Perhaps, the message being delivered here is that sign language should become the new focus for educational research and certainly for instructional purposes.

Further confirmation of the foregoing supposition is revealed with the communication method first learned by the subjects. Here, of the 75 people who acquired speech first only 12 felt that deaf children today should learn speech first (see Table B7). On the other hand, a high proportion (81.9%) of those who acquired sign language first also felt signs should be first learned. Again, the value given to sign language acquisition is impressive warranting serious considerations.
Dormitory living experience offered a possible factor of influence. Those who had this experience were more in favour of signs being learned first then the others (see Table B11). Although, the speech first category was the lowest for both groups those people who lived at home valued speech at a young age more than the dormitory group. Environmental pressure in the home might account for these data as most deaf children come from homes where at least part of the family is hearing. Dormitories, on the other hand offered an environment consisting mostly of other deaf peers.

Of the three significant relationships found in the crosstabulations of method of communication presently utilized and preferred, the two areas concerned with speech in the home offered the most interesting information. Half of the group that presently speaks at home (N=56) and half of the group that preferred to speak at home (N=16) felt that deaf children should learn signs and speech simultaneously (see Tables C5 and C6). Although more of the preference group favoured children learning speech first then signs the small sample sizes (N=5 and 3 respectively) does not justify serious generalizations other than to say that those people who preferred to use speech at home tend to slightly favour speech before signs.
Benefit of a Bilingual Knowledge of Signs

A large percentage of the respondents answered affirmatively for the questions concerning the learning of Deaf signs given that English signs were already known or the learning of English signs given that Deaf signs were already known (82.7% and 83.3%, respectively). This is a strong gesture by the Deaf community that deaf children should have the benefits of learning both kinds of signs. These statistics also give firm support to the concept of a bilingual education. Furthermore, an interesting challenge to administrators, educators and professionals involved with the education of deaf children is raised. Specifically, if the Deaf are willing to become bilingual in a Hearing society are the members of this Hearing society willing to recognize and expand the role of the sign language of the Deaf in the educational system.

Proper Signs for Deaf Children

The results in Table 6, demonstrate similar support for the use of both Deaf signs and English signs by deaf children in the classroom. When the variables method of communication presently used and preferred to use is excluded no significant crosstabulations with any of the demographic variables could be found. When method of communication was examined it was found that those with leanings towards Deaf signs tended to favour a higher amount of Deaf signs (see Table C8) and a lesser amount of English signs (see Table C10). However, generalizations
should not be made as both of these categories are references to a specific group of people. That is, they refer to people preferring to use Deaf signs at home and those preferring to use Deaf signs with Hearing friends.

Likewise, a similar trend was noted with those with leanings towards English signs (see Tables C7 and C11) and towards speech (see Table C9). All of these groups favoured the deaf child using less Deaf signs and more English signs with their teacher. It seems that personal experience with a language seems to be a critical factor in determining one's opinion of language usage for deaf children. Theories of ethnocentrism gives support to this observation. It may well be that this is an indication of a possible line of division amongst the Deaf. That is, polarized groups of pro-Deaf signs and pro-English signs may presently exist or be in the process of evolving. However, the overall consensus on the question at issue here indicated that the child should be bilingual in the classroom.

Comments expressed by the respondents give further insight. One person who was more in favour of English than Deaf signs said:

...in an educational setting for English, use English signs. For other content areas that require the expression of ideas and opinions then the child should have the right to express in the most comfortable sign system.

Another person who felt that Deaf signs should be used more than
English signs stated:

...when deaf children grow up they will be able to learn more about English. While they are young it is better to concentrate on communicating.

This foregoing comment suggests that English signs are more useful as a tool for learning English than communicating. Finally, from one person who gave equal support to both Deaf and English signs:

...this would facilitate understanding between the teacher and children. The children's education and communication would improve.

Implied in the above comment is a feeling that was echoed by many of the Deaf, that is, that the biggest stumbling block in education of the Deaf is the lack of efficient communication between the teacher and students. Possibly, this sample's suggestion of using both Deaf and English signs in the classroom is one way of overcoming this barrier.

Proper Signs for Teachers

As with the previous aspect of classroom communication there was similar support for the use of both Deaf signs and English signs by the teacher in the classroom (see Table 6). A major difference between a child's and a teacher's use of signs was a tendency amongst the respondents to see English signs as being more appropriate when used by teachers. A likely explanation of this is in the following comment, "teachers should give their students a good example to follow." It does seem fitting that a model for English would have to include the
teacher since deaf peers most likely use Deaf signs and hearing members of the family most probably use speech and thus an adequate example of English may not be available. However, this is not to suggest that the teachers should sign in English most of the time as appropriate signing would "depend on the class situation." Also, there is possibly a danger of overuse of English signs that may well defeat the primary purpose of using them. This danger is expressed quite commonly amongst the Deaf and very clearly in the following comment, "English signs are slow and boring."

Demographic variables whose influences were shown to be statistically significant included onset of deafness (see Table B3). The prelingually deaf felt more strongly that the teacher should use Deaf signs than did the postlingually deaf. One could speculate that the postlingual group most likely learned to speak first which therefore may have been a determining factor. An examination of the crosstabulation of method of communication first learned, which was also significant (see Table B8) supports this speculation. Although the difference is slight the group that learned sign language first was more in favour of teachers using Deaf signs than was the group that had acquired speech first. The strongest support for Deaf signs, however, came from the group which had acquired signs and speech simultaneously. Thus, the age at which one becomes deaf and the method of communication one first learn do seem to affect one's
opinion of appropriate classroom signing by the teacher.

Method of communication was previously noted to be an influential factor when the issue was Deaf and/or English signs and sign language and/or speech (see Tables B6 and B7). Although there seems to be an obvious relation between communication initially acquired and present opinion there are not sufficient data upon which one might make predictions based solely upon this one variable.

Membership in the Deaf community was also a significant factor. Those who saw themselves as full-time members were more inclined to have teachers using Deaf signs than those who were part-time members (see Table B10). As with the Deaf signs and/or English signs in the classroom aspect mentioned earlier, the reason for this could possibly be related to the identity characteristic which Deaf signs have within the Deaf community. That is, the full-time members value the advantages of Deaf signs more than the part-time members. Also, the fewer contacts with members outside of the Deaf community may have been a factor as this implies less exposure to English.

A significant influence was found when a subject's preference for captioned or interpreted news was investigated (see Table B12). One might have postulated that those who preferred captioned news found comfort in reading captions and therefore would be more favourable towards English signs. However, this was not the case. The captioned news group tended
to favour the teacher using Deaf signs more than the interpreted news group. It could be that the captioned news group might have felt more comfortable with English and thus focused their attention on ease of communication. Conversely, the other group may not have felt at ease with English and somehow related the use of English signs as a way of improving English skills. Nevertheless, this proposition is purely speculative and further research is needed before firm statements may be issued relating captioned television with perspectives on signing. Yet, as noted earlier, those who understood only some of the television captions were also more in favour of English signs than those who understood most of the captions (see Table B13). Thus, such speculation is justified and deserves investigation.

Also with regards to teachers using Deaf signs there was a difference between people who preferred Deaf signs at home and those who did not (see Table C13). Those who preferred Deaf signs favoured teachers using Deaf signs more than the other group. It would seem that the home situation had been projected into the classroom. Possibly, the comfortable communication provided by using Deaf signs at home was extended to imply a meaningful environment in the classroom to be one which had teachers using Deaf signs.

Finally, addressing the issue of teachers using English signs the cause of variation within the sample resulted from the variable method of communication presently used and preferred to
use. Unsurprisingly, those who use English signs with Deaf friends also gave greater support for teachers to use English signs with their students (see Table C14). Again the theory of ethnocentrism helps to explain this. In other words, what is good for oneself would also hold for others.

Further significant relationships were found when the categories were those who preferred to use Deaf signs with deaf friends, hearing friends and at home (see Tables C15, C16, and C17). It was the non-preferring group in each of these categories that were proportionately more supportive of teachers using English signs even though the preferring groups also gave substantial support in this direction. As in other instances, one's own habits seemed to determine one's perspectives.

**Deaf Signs for Teachers of the Deaf**

A formidable majority (90.1%) responded that teachers should be required to learn Deaf signs. Presently, provincial teacher certification in Education of the Deaf does not require the candidates to have some signing skills. Nor are there any teacher training programs at a Canadian University that require prospective teachers to achieve a minimum standard of signing skill as a prerequisite for coursework completion. This response by the Deaf community exposes a serious omission in the training of future teachers of the Deaf. It is not within the scope of this document to dwell upon the reason for such an oversight other than to say that its discovery would represent a
major breakthrough in bridging the gap between education of the Deaf and the Deaf community.

Comments by the respondents help to portray the intensity of this feeling. One subject compared sign languages with other linguistic communities by saying:

...teachers of French children are required to have a good knowledge of the French language -- the same treatment should be given to Deaf signs.

As noted in the review of the literature a serious issue in the education of ethnic minorities is the recognition of their languages. Deaf signs should be no exceptions to this recognition.

One person stated, "if teachers want to work with the Deaf then they should know the language" and another quite briefly claimed that "knowing Deaf signs should be mandatory" amongst teachers of the Deaf. These comments are summarized by a deaf teacher of the Deaf who implied that teachers knowing Deaf signs enable a better educational environment:

...teachers of the Deaf should learn Deaf signs since their students are deaf. This way their would be easier access, better morals, happiness and no barriers.

Other comments alluded to the need for respecting Deaf ethnicity as in the following statements:

...to be aware of Deaf culture; that signs represent an unique language and is deserving of respect as other languages.
...to respect Deaf culture and Deaf tradition.

It has been said that ASL is a means by which the deaf retain their cultural identity and that when Hearing people are allowed to partake in using ASL to communicate the Deaf would lose a certain measure of identity (Kannapell, 1982). At first glance, the above comments may seem to be a direct challenge to these views. However, the term Deaf signs may be extended along a continuum as suggested by Woodward (1973b). Thus, it may be that the respondents here have no intentions of having Hearing teachers become fluent in Deaf signs to the extent that they match the signing skills of the Deaf themselves. Rather, for these people, it may be necessary to obtain a knowledge of Deaf signs equivalent to only a surface understanding of Deaf signs. Perhaps, just enough to facilitate easier communication between teacher and students. Further research would certainly assist in clarifying this issue. And finally:

...if a student has the right to use whatever sign system is most comfortable, he also has the right to be understood, which includes being understood while he explains himself in Deaf signs.

Thus, it is the prerogative of the child to have a teacher that is able to understand him/her in the language that is most used by the Deaf community.

Involvement of Deaf People in Deciding Educational Policies for Deaf Children

A higher percentage (84.1%) of the sample felt that Deaf people should be involved in deciding educational policies for
deaf children. The import of this statement becomes more visible when it is observed that there has never been a Deaf education administrator in British Columbia. Presently, all levels of administration at the provincial school for the Deaf and all administrative positions across the province that are connected with the education of Deaf individuals are held by Hearing persons. It is not within the realm of this discussion to speculate as to why this has been the case. However, a valuable insight into the present situation is provided by a number of Deaf community members:

...Most education policies now are decided by professionals with no background experience with the Deaf.

...Too many communication and educational methods have been set up by Hearing professionals who know nothing about the Deaf.

...Deaf people should be making all of the decisions because they are the only people who know anything about deafness.

...Hearing people usually cannot communicate well enough to get first hand information about deafness.

...Must! They know what is best for deaf children through their rich experiences.

These claims are difficult if not impossible to ignore. The control of educational policies for deaf children is similar to past practices with other ethnic minorities (see Jones, 1976). The comments above illustrate that the problem is compounded when language and cultural characteristics of the Deaf community are considered.
Further remarks relate the empathy that the Deaf have towards each other:

...The Deaf themselves have 'had' experience in the educational policies for deaf children.

...Deaf people understand each other better, they have more feelings toward each other and they have had the experience.

...Deaf people are the best bet since they have gone through it all.

It is hard to prove objectively why there has been little or no involvement at a policy deciding level. Possibly, few qualified Deaf adults have attempted to obtain important administrative positions. On the other side of the fence, perhaps Hearing professionals have evolved a comfortable niche that has become self-protecting through the exclusion of the Deaf. No matter which explanation seems reasonable the viewpoint of the Deaf community as presented here cannot be dismissed. It is indeed a strong message to the Ministry of Education. Finally, one last comment is presented as a summary of the frustrations that have been experienced over the years. Relating past experiences with his answer to the question of Deaf involvement in the educational policies one middle aged gentleman remarked:

...Definitely! Deaf adults climbed out of the pitfalls of poorly arranged educational policies. They know what is needed and what to avoid.
Captioned Television

More than four-fifths of the respondents (82.1%) felt that captioned television was helping improve their English (see Table B13). As only 58.6% claimed to understand captions most of the time, then there is obvious leeway for improvement in the viewer's English and/or a need for more appropriate captions. As the mass produced decoder is a relatively recent development a close investigation of possible changes in captioning techniques and on trends in viewer's perspectives on captioning will help in directing the development of captioned programs. Also, such an investigation would provide valuable information for classroom use of captioned television.

This question did not attempt to focus upon a particular aspect of English, nevertheless, comments give some insight in this respect:

...It opens my mind for vocabulary, especially in science and slang.

...helps my vocabulary.

Many of the subjects agreed with these two comments. Vocabulary acquisition and reinforcements were the areas that seemed to be benefitting the most from captions.

Not everyone felt this way. As the question may have had a negative connotation attached to it, a remark like the following was certainly understood, "I think my English is good enough, thanks." To avoid the derogatory appearance of this question,
future studies should restate it more openly. For example, one might ask "In what way do you feel that captioned television is of advantage to you?" or more simply "Why do you enjoy watching captioned television?" However, this question did reveal that the value of captioned television lies deeper than mere orthographic representations of dialogue.

A higher proportion of the sample also preferred captioned news to interpreted news (see Table 3). Many people frankly stated that captioned television was "easier to follow." However, extraneous variables must be considered before a conclusive statement can be justified. The quality of the interpreting was an influential factor as seen in the following comment, "will watch interpreted news as long as the signing is good." Another comment suggested that the interpreters use signs that are perhaps too English, "...interpreters use signs for some words that are different than what the Deaf use." In the other direction one person mentioned that "captioned news change too fast." This is a crucial point for improvement of captioned programs that is related to the receptibility of the eye. An optimum captioning speed needs to be found to ensure that a substantial majority of the viewers are able to read the captions. It may well be that speed was the reason for some of the people not understanding captions all of the time.
CHAPTER VI: SUMMARY, CONCLUSIONS, IMPLICATIONS, LIMITATIONS, AND RECOMMENDATIONS FOR FUTURE RESEARCH

Summary

The purpose of this study was to survey the adult Deaf and document their viewpoints on appropriate methods of communication for deaf children. Questions asked dealt with sign language and its role in the development of a deaf child's communication. In a review of the literature, it was concluded that although sign language was an integral part of the Deaf community the educational system, until recently, had not recognized the value of using signs in the classroom. Upon widespread adoption of sign language under the banner of total communication in the early seventies it was then observed that a wide gamut of newly created sign systems were being utilized for instructional purposes instead of the sign language used by the Deaf. Furthermore, input from the Deaf community was not a factor in the implementation of signs in the classroom. These findings gave direction for a survey of the Deaf community.

The questionnaire was self-designed and pilot-tested on fifteen adults. The final version was then administered to a sample of adults in the Greater Vancouver metropolitan area. Sample selection was made on the basis of convenience. Data compilation and analyses were performed using the Statistical Package for the Social Sciences: Version 8.00 (Nie, et.al.,
Analyses of the demographic data revealed a sample consisting of 86 males and 76 females. Approximately 80% were prelingually deaf and 75.3% had begun to learn signs by the time they were nine years old. A little more than half (54.9%) were full-time members of the Deaf community and 42.0% felt they were part-time members. Almost all of the respondents (95.7%) presently use Deaf signs with deaf friends.

Personal preference for a method of communication showed that when in an environment consisting of other Deaf people a large majority of the subjects would prefer to use Deaf signs. When the environment is to consist of Hearing people not likely to know how to sign then the most preferred method was writing.

Overall expectations of the Deaf community of deaf children's methods of communication revealed that a hypothetical deaf child should learn to sign before s/he learns to speak. S/he should acquire language bilingually, thus learning Deaf and English signs together. If the child only has knowledge of one kind of signing then the other one should also be learned. While in school both Deaf and English signs should be used and the teacher should sign likewise. Acting as a role model the teacher should use more English signs than the students. All of the child's teachers must be able to converse in Deaf signs to allow for comfortable communication. And finally, decisions concerned with present and future policies in education of the
Deaf needs to involve other members of the child's linguistic minority group, namely, the Deaf adults.

Crosstabulations of the affective variables with demographic variables helped to find which factors were probable influences. With respect to when sign language should be learned the pertinent factors were age, hearing aids, dormitory experiences and method of communication initially acquired. Regarding which signs should be learned first the critical factors were age, use of voice with Hearing people, method of communication initially acquired, Deaf community membership and understanding of captions on television. The only other variable on which there was a variety of factors was the question of the amount of Deaf signs a teacher should use. In this instance, onset of deafness, method of communication initially acquired, Deaf community membership, and one's preference for captioned or interpreted news had significant effects. It should be noted that the 0.05 level of significance established for this study increased the likelihood of a Type 1 error. Due to the exploratory nature of this study future replications of this questionnaire is necessary to reflect the significance of the demographic variables.

Focusing on the methods of communication presently used and preferred to be used the following relationship with affective variables were observed:

1. When a child should learn sign language?
1. Which signs should be learned first?
- associated factors
  a) use of Deaf signs at home
  b) preference for Deaf signs at home
  c) preference for English signs at home

2. Amount of Deaf signs a child should use to their teachers.
- associated factors
  a) use of English signs to deaf friends
  b) preference for Deaf signs at home

3. Amount of English signs a child should use to the teacher.
- associated factors
  a) use of speech at home
  b) preference for Deaf signs with hearing friends
  c) preference for English signs with hearing friends
  d) preference for speech with hearing friends

4. Amount of Deaf signs a teacher should use.
  a) preference for Deaf signs at home

5. Amount of English signs a teacher should use.
  a) use of English signs to deaf friends
b) preference for Deaf signs to deaf friends

c) preference for Deaf signs at home

d) preference for Deaf signs with hearing friends

Due to the nature of the demographic variables and the specific effects to which each one was statistically related, it is not feasible to present a summary. The uniqueness of each variables effect requires careful examination of the relevant tables contained in Chapter IV and Chapter V.

Lastly, more than half the sample population (63.0%) own a decoder. A majority (71.6%) of the sample prefer captioned news to interpreted news. And where just over half of the respondents (58.6%) understand captions most of the time a larger proportion (83.1%) felt that captions were helping them with their English.

Conclusions

The present survey was conducted to obtain the viewpoints of the adult Deaf community with respect to methods of communication for deaf children. The following opinions were clearly articulated by the Deaf community:

1) Most deaf children should learn to sign. The advantages of signing were that it provided, among other things; an ease of communication, the use of a native language, a fuller and more expressive language, and that it was easier to learn than a spoken language. The adult Deaf have empathy
for today's children and future ones and desire that these children have the benefits of being able to communicate with signs.

(2) Deaf children should acquire signs bilingually. That is, they should learn both Deaf signs and English signs in the process of developing two languages. A separation was usually made on the function of the two languages. Deaf signs were viewed as the appropriate language to use for the purpose of interpersonal communication. English signs served as a model for the English language and as a means of improving one's reading and writing skills.

(3) Deaf children should learn to sign before they learn to speak. A key rationale given was the necessity of developing efficient communication. Early acquisition of sign language also ensures the assimilation of an entity of Deaf culture at an early age. This is a possible indication of kinship amongst the Deaf of all ages.

(4) Deaf children of all ages should have the opportunity of knowing both Deaf signs and English signs. Knowledge of Deaf signs allows for maintenance of an identity characteristic of the Deaf community and for a common means of communication. English signs would be an assistance in learning to read and write English.

(5) Deaf children should be able to use both Deaf signs and English signs when communicating with their teachers.
Bilingual language acquisition should thus be followed by bilingual education. The classroom becomes a focal point for the further development of two languages with the ultimate goal of being at ease with both.

(6) Teachers should use both Deaf signs and English signs while placing slightly more emphasis on the latter. The teacher is to provide a model of the English language. Deaf signs are to be used to facilitate comprehension of instructional material and student's dialogue.

(7) Teachers should be able to understand Deaf signs. This is to optimize communication and to avoid misunderstandings. Adherence to this objective would provide a gesture of respect to the Deaf culture. The extent to which Deaf signs are to be learned was not found. Comments suggested that a minimum standard would be one that required the teacher to be able to understand the students when they use Deaf signs.

(8) The Deaf are to become involved in the decisions regarding educational policies for deaf children. To deny them this opportunity is to deprive the Deaf of a basic right to determine their own destiny. Personal experience with deafness is too valuable to further neglect. A political framework is thus needed to ensure Deaf involvement at a policy-decision level.

(9) Captioned television is an useful tool in helping the Deaf
acquire and reinforce English vocabulary. The English model that is provided by captions is vastly different from that provided by English signs. Previous research has shown that a sign-for-word representation of the English language may be too awkward to be feasible thereby rendering it inappropriate for the classroom. Moreover, it has been criticized as being "too slow and boring" to watch. On the other hand captions on television are a welcome addition to a home leisure activity. The attitude towards English language exposure that is presented on television is more positive than that which is presented through interpersonal communication using English signs. Therefore, the use of captioned television in the classroom may supplement deaf children's overall development of competence in communication.

(10) One's personal experience with a language affects the value one places upon it. Although a seemingly obvious conclusion it is important to note that one's present use of a language is a relevant factor of determination in a language perspective. In other words language utilization by a larger majority is not a sufficient reason in itself to suggest that linguistic minority groups likewise use it. Instead, one's own ethnocentrism is influenced more by the practicality of a language in its application to communication.
Implications

In this survey it was the opinions of the respondents that Deaf signs should become an integral part of a child's method of communication. During the years of language acquisition it is considered to be essential either in conjunction with English signs or by itself. On the other hand, English signs received support when they were to be learned in conjunction with Deaf signs. During the school years both are of equal importance with English signs expected to be used slightly more by teachers. These opinions raise serious implications for the language development of deaf children, educational systems and teacher training programs. The implications if these opinions are correct, in no order of importance are as follows:

(1) Whereas, hearing parents can be expected to learn signs and provide a model of the English language to their deaf child, they must also be prepared to learn Deaf signs to ensure that their child learns an efficient means of communication at as early an age as possible. Methods of instruction would have to be utilized that would allow parents to attain this goal. The solution should present serious logistical problems.

(2) Development of an attitude favourable to the notion of implementing a bilingual environment would have to be recognized and seriously dealt with. When one examines the skills of most hearing professionals it is little wonder...
that most Hearing people do not develop good signing skills in either Deaf or English signs. There are relatively few hearing models of inspiration available. The present state of the art indicates that the attempt to learn Deaf signs and English signs may be jeopardized by one's own compatriots. That is, one is hard pressed to succeed where failure or resistance are the rules of the game.

(3) If bilingual education is to be implemented then professionals presently in the field, especially teachers, should become bilingual. As it is the prerogative of the Deaf to obtain the skills to interact in two cultures it must likewise be with hearing and hearing impaired professionals in the field. Where one's financial stability is related to the trials and tribulations of deaf children, no effort would be considered too overwhelming to justify continuation of monolingual interaction within a bilingual educational setting.

(4) Bilingual education would also require that the Ministry of Education restate their job descriptions to ensure that future teachers meet an appropriate level of bilingual skills in Deaf signs and English signs. The use of Deaf adults in establishing a standard for Deaf signs would be an example of the kind of involvement that the Deaf desire. To support this amendment the requirement for teacher certification would need to be changed. Such action would
likely result in a change in a university's training program.

(5) Consequently, the curriculum of university's teacher training programs in Education of the Deaf would need to be revised to ensure that graduating teachers have bilingual competence in Deaf and English signs. As with other language studies at this level, course prerequisites could be used as a motivational force. The university is also an ideal place for instituting positive attitudes and respect towards an ethnic minority.

(6) A framework needs to be established that will ensure that qualified Deaf adults be involved at a policy making level where educational matters are concerned. Furthermore, a strong representation at this level would help to eliminate notions of tokenism that are a common accusation, where minority groups are concerned.

(7) Captioned television may be the start of a new revolution in the education of the Deaf. As more homes obtain decoders and as the schools begin to implement more captioned related instructional material it is possible that the side benefits of captioned television would be a significant improvement in the lexical and syntactical comprehension of the English language by the Deaf. Thus, a partial answer to the problem of how to teach the English language to the Deaf may presently be at hand. Only
time will tell if this supposition is correct. However, the response of the Deaf in this study give good reasons to be optimistic.

(8) If bilingualism is to become a cornerstone in the education of deaf children then it is essential that features of Deaf culture be investigated to determine possible advantages of recognizing the children's bicultural environment. Although this paper did not focus on the cultural aspects of the Deaf community it did indicate that a large proportion of the sample did have a bilingual attitude and a significant number preferred Deaf signs as their language of communication. If language is a cultural entity then these points suggest that biculturalism may have a possible role in the education of the Deaf. Future research needs to be undertaken to clarify the relationship of the two cultures and the emphasis both are to receive within the educational setting.
Limitations

(1) This survey contained the obvious limitations that are common to all questionnaires of this type. This would include the factor of response effect which is the tendency of a respondent to give incorrect responses (Borg and Gall, 1979). There was no way to verify whether or not this did occur nor whether subjective comments were indicative of the true nature of the respondents.

(2) The selection of the sample led to the inclusion of many people who attend Deaf social and athletic events. Whether this is a significant factor remains for statistical verification. Although, this does place a restriction on generalizations, the size of this sample may be large enough with respect to the size of the Greater Vancouver Deaf community to permit such generalizations.

(3) Generalizations based upon the conclusions could only be made to a population with demographic characteristics similar to the sample. Therefore, significant factors must be used for extrapolation only to those populations displaying features similar to the sample.
Recommendations for Future Research

(1) Replication of this study in other Deaf communities should be undertaken. The obtained information would help to define the role of sign language in total communication programs; develop a composite of ethnographic similarities and/or variations in the opinions of the Deaf; allow for further evaluations of the effects of bio-demographic variables on the viewpoints of the Deaf towards methods of communication; assist in bridging the gap between the Deaf community and the field of education of the Deaf; assist in formulating suggestions for parents and pre-school programs with regards to methods of communication for young children; and evaluate the role and effects of captioned television on language-related perspectives.

(2) Research is needed to design implementation strategies for bilingual programs and to evaluate the effectiveness of such programs. Consideration needs to be given to input from Deaf signers especially those who are bilingual in Deaf signs and English signs. Studies on the attitudes of educators towards the concept of bilingual education is necessary to determine possible obstacles that may be encountered. In this respect, studies on other linguistic minority groups may prove to be of invaluable assistance.

(3) Studies are needed to develop an operational definition
of the terms 'Deaf signs' and 'English signs'. This information would help provide guidelines for sign language instructional programs as well as to offer directions for parents, teachers, and professionals involved in the education of the Deaf.

(4) A survey is needed that is focused upon the relative value which the Deaf have placed upon speech and hearing aids. This would provide useful information on environmental situations that favour their use. Likewise, it would help determine the emphasis that should be given to speech training and auditory training in programs for the Deaf, especially in relation to time spent on other aspects of communication.

(5) Evaluation of teacher training programs is needed to ascertain their effectiveness in preparing teachers for interaction with a linguistic minority group. Factors to be investigated should include communication competency; acceptance of the Deaf community's cultural values and language; and understanding and appreciation of a child's bicultural environment.

(6) Research is needed to identify factors in the Deaf community that are critical to cultural identity and to examine the relationship of these factors to their counterparts in a Hearing society. The concept of a bicultural education needs to be investigated from a
point of view that incorporates Deaf cultural values. Subsequently, possible implications for biculturalism in the classroom should then be investigated.
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Appendix A
SUBJECT'S PERSONAL STATUS

1. Would you say that you are...
   1. deaf
   2. hard-of-hearing
   3. not sure

2. Age ______ years

3. Gender
   1. male
   2. female

4. When did you become deaf? ______ years
   (Were you born deaf? Was your deafness sudden or did it happen slowly? Were you at first deaf in one ear and then the other?)

5. Do you wear a hearing aid?
   1. all the time
   2. some of the time
   3. never

6. At what age did you learn to sign? ______ years
   (From your parents? When you started school? Did you learn gestures at first and then signs?)

7. Do you use your voice with hearing people?
   1. always
   2. sometimes
   3. never

8. What is your present occupation?

9. Which of the following groups describe the people you like to be with most of the time?
   1. deaf people
   2. hard-of-hearing
   3. hearing people
   4. deaf and hard-of-hearing
   5. deaf and hearing
   6. hard-of-hearing and hearing
   7. deaf, hard-of-hearing and hearing

10. What communication did you first learn to use?
    1. Sign language
    2. Speaking
    3. Both, sign language and speaking
    4. Other

11. Method of communication presently used:
    (select the ones most used with...)
    (Can the subjects sign in 1. English signs
     2. Deaf signs?)

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<tr>
<th>Method of Communication</th>
<th>Deaf Friends</th>
<th>Hard-of-Hearing Friends</th>
<th>Hearing Friends</th>
<th>Hearing People</th>
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<td>Gestures</td>
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<td>Speaking</td>
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<td>Writing</td>
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(select the ones most used at...)

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<th>Deaf social events</th>
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12. Method of communication you would prefer to use.
(select the one most preferred)

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<th>hearing friends</th>
<th>hearing people</th>
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13. Do you feel that you are a member of the Deaf community?
1. all the time
2. part of the time
3. not a member

14. What kind of clubs and organizations do you belong to?
What kind of activities are you involved in?
____________________________________________________________________
____________________________________________________________________

15. Are you a G.V.A.D. member?
1. yes
2. no

16. If no, why not?
1. costs too much
2. never go to G.V.A.D. events
3. do not like other members
4. other reasons
(specify __________________________________________)
17. How often during the last year did you go to these deaf community events? Use the following numbers to show how often:

1. most of the time
2. some of the time
3. never

- bingo
- gym nights at J.H.S.
- dances
- movies
- games (Beat the Clock; etc.)
- meetings
- wine and cheese
- cards
- others (specify)

18. When you do not go to social events, what is usually the reason?

1. not interested
2. too expensive
3. no babysitter
4. too far to go
5. it's on the wrong day
6. other reasons
   (specify)

SUBJECT'S EDUCATION

19. Did you go to school before 5 years of age?

1. yes
2. no

20. Which type of school did you go to?

- School for the Deaf
- Off-campus
- Regular school program
- Special class in regular school
- Others (specify)

21. Did you live in the school dormitory?

1. yes
2. no

22. If yes, how many years? ______ years

23. Where did you last go to school?

1. school for the Deaf
2. off-campus
3. regular school
4. community college
5. university
6. Gallaudet College
7. other (specify)
METHOD OF COMMUNICATION DURING SCHOOL YEARS
(select the ones most used)

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<th>24. Self with teacher</th>
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29. Self with siblings (brothers and sisters)

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30. Siblings mostly used

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<td>319</td>
</tr>
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<td>4. Fingerspelling</td>
<td>326</td>
<td>324</td>
<td>322</td>
<td>319</td>
</tr>
<tr>
<td>5. Gestures</td>
<td>319</td>
<td>319</td>
<td>321</td>
<td>322</td>
</tr>
<tr>
<td>6. Writing</td>
<td>357</td>
<td>357</td>
<td>355</td>
<td>322</td>
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</table>

SUBJECT'S EXPECTATIONS OF PRESENT DAY EDUCATIONAL PROGRAMS

31. Which type of school do you think most deaf children should go to?

<table>
<thead>
<tr>
<th>Year</th>
<th>5-8</th>
<th>9-12</th>
<th>13-16</th>
<th>17-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. School for the Deaf</td>
<td>323</td>
<td>314</td>
<td>326</td>
<td>326</td>
</tr>
<tr>
<td>2. Off-campus special class</td>
<td>317</td>
<td>322</td>
<td>324</td>
<td>326</td>
</tr>
<tr>
<td>3. Regular school class</td>
<td>321</td>
<td>324</td>
<td>322</td>
<td>319</td>
</tr>
<tr>
<td>4. Special class in a regular school</td>
<td>326</td>
<td>324</td>
<td>322</td>
<td>319</td>
</tr>
<tr>
<td>5. Oral School for the Deaf</td>
<td>319</td>
<td>319</td>
<td>321</td>
<td>322</td>
</tr>
<tr>
<td>6. Others (specify)</td>
<td>357</td>
<td>357</td>
<td>355</td>
<td>322</td>
</tr>
</tbody>
</table>

COMMENTS: ____________________________

32. Should most deaf children learn to sign?

1. yes
2. no
3. don't know

COMMENTS: ____________________________

33. If yes, what kind of signing should deaf children first learn?

1. Deaf signs
2. English signs
3. Both, Deaf and English signs

Why? ____________________________
34. When should deaf children learn signs?
   1. Sign language should be the first language learned.
   2. After they learn to speak.
   3. At the same time as they are learning to speak.
   4. Other.
       (explain: ____________________________ )

35. If deaf children know Deaf signs should they learn
   English signs?
   1. yes
   2. no
   3. don't know

36. If deaf children know English signs should they learn
   Deaf signs?
   1. yes
   2. no
   3. don't know

37. Deaf children should use which signs with their teachers?

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Mostly</th>
<th>Partly</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaf</td>
<td>412</td>
<td>411</td>
<td>411</td>
<td>417</td>
</tr>
<tr>
<td>English</td>
<td>414</td>
<td>415</td>
<td>416</td>
<td>417</td>
</tr>
</tbody>
</table>

COMMENTS: ________________________________

38. Teachers should use which signs?

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Mostly</th>
<th>Partly</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaf</td>
<td>414</td>
<td>415</td>
<td>420</td>
<td>426</td>
</tr>
<tr>
<td>English</td>
<td>427</td>
<td>423</td>
<td>424</td>
<td>425</td>
</tr>
</tbody>
</table>

COMMENTS: ________________________________

39. Should teachers of the Deaf be required to learn
   Deaf signs?
   1. yes
   2. no
   3. cannot decide

COMMENTS: ________________________________

40. Do you think deaf people should be involved in deciding
    educational policies for deaf children?
   1. yes
   2. no
   3. cannot decide

COMMENTS: ________________________________

OPINIONS ON CAPTIONING, INTERPRETING AND OTHER SERVICES

41. Do you have a decoder?
   1. yes
   2. no

COMMENTS: ________________________________

42. If no, why not?
   1. costs too much
   2. not interested
   3. waiting for more captioned programs
   4. other reason
43. If yes, how many hours a week do you watch captioned programs?
   1. 1 to 2 hours
   2. 2 to 10 hours
   3. more than 10 hours

44. Do you watch the C.B.C. Interpreted News?
   1. most of the time
   2. some of the time
   3. cannot get, but would watch
   4. no

45. Do you watch the A.B.C. Captioned News?
   1. most of the time
   2. some of the time
   3. cannot get, but would watch
   4. no

46. Which one do you prefer?
   (If Canadian News were captioned which one would you prefer?)
   1. captioned news
   2. interpreted news
   3. cannot decide
   COMMENTS:

47. If you watch C.B.C. Interpreted News, how would you describe the interpreting?
   1. excellent
   2. good
   3. okay
   4. poor
   5. depends on which interpreter

48. Do you understand the captions on television?
   1. most of the time
   2. some of the time
   3. no
   4. depends on the program

49. Is captioned television helping you with your English?
   1. yes
   2. no
   3. don't know
   COMMENTS:

50. In the past did you watch the Show of Hands?
   1. most of the time
   2. some of the time
   3. could not get, but would have watched
   4. no

51. How often have you used interpreters from W.I.D. during the last year?
   1. never
   2. 1 to 2 times
   3. 3 to 5 times
   4. 6 to 10 times
   5. more than 10 times
52. How often have you used other interpreters during the last year?
   1. never
   2. 1 to 2 times
   3. 3 to 5 times
   4. 6 to 10 times
   5. more than 10 times

53. During the last year have you asked for an interpreter from W.I.D. and been told none was available?
   1. yes
   2. no
   3. never tried

54. If yes, how often did this happen? ______ times

55. What kind of situation was the interpreter requested for?
   1. yes
   2. no
   1. emergency
   2. medical
   3. educational
   4. job
   5. recreational
   6. other

56. Have you ever hired an interpreter yourself instead of asking W.I.D. for one?
   1. yes
   2. no

57. If yes, why?
   1. no W.I.D. interpreter available
   2. other reason

58. How would you rate W.I.D.'s interpreters? (not on television)
   1. excellent
   2. good
   3. okay
   4. poor
   5. depends on which interpreter

59. How often did you use W.I.D.'s answering service in the last month?
   1. not at all
   2. 1 to 2 times
   3. 3 to 5 times
   4. 6 to 10 times
   5. more than 10

60. Are you satisfied with W.I.D.’s TTY answering service?
   1. yes
   2. no
   3. never tried

61. How often have you tried the Crisis Center's answering service in the last month?
   1. not at all
   2. 1 to 2 times
   3. 3 to 5 times
   4. 6 to 10 times
   5. more than 10
62. Are you satisfied with the Crisis Center's answering service?
   1. yes
   2. no
   3. never tried

63. How often did you use the repair service of W.I.D. in the last year (e.g.: TTY, doorbells, etc.)
   1. not at all
   2. 1 to 2 times
   3. 3 to 5 times
   4. more than 5

64. Would you be willing to pay a fee for any of W.I.D.'s service?
   1. yes
   2. no

65. If W.I.D. had to charge fees, which services should be charged?
   1. yes
   2. no
   1 for YES     2 for NO

66. The deaf community wants to improve services. Using the numbers 1 to 5 show which services are of most importance. 1 is the most important and 5 is the least important.
   1. interpreting services
   2. telephone services
   3. adult education
   4. children education
   5. social activities
   6. athletic activities
   7. public awareness
   8. employment services
   9. counselling services
   10. understanding of the law and legal services
Appendix B
### Table B1
Age of Respondents by Type of Signing to be Initially Acquired

<table>
<thead>
<tr>
<th>Count</th>
<th>Initial</th>
<th>Deaf Signs</th>
<th>English Signs</th>
<th>Both</th>
<th>Row Total</th>
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</thead>
<tbody>
<tr>
<td>Age</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-30 Yrs</td>
<td>10</td>
<td>15</td>
<td>34</td>
<td>59</td>
<td>57.6</td>
</tr>
<tr>
<td></td>
<td>16.9</td>
<td>25.4</td>
<td>57.6</td>
<td></td>
<td>36.6</td>
</tr>
<tr>
<td>31-44 Yrs</td>
<td>24</td>
<td>10</td>
<td>20</td>
<td>54</td>
<td>37.0</td>
</tr>
<tr>
<td></td>
<td>44.4</td>
<td>18.5</td>
<td>33.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 Yrs &amp; Above</td>
<td>20</td>
<td>8</td>
<td>20</td>
<td>48</td>
<td>41.7</td>
</tr>
<tr>
<td></td>
<td>41.7</td>
<td>16.7</td>
<td>29.8</td>
<td></td>
<td></td>
</tr>
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<td>Column Total</td>
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<td>20.5</td>
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Chi Square = 11.72213  Df = 4  p < 0.0195

Missing Data = 1
Table B2
Age of Respondents by Time at Which Signs Should be Learned

<table>
<thead>
<tr>
<th>Time</th>
<th>Signs First</th>
<th>After Speech</th>
<th>With Speech</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-30 Yrs</td>
<td>22</td>
<td>11</td>
<td>26</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>37.3</td>
<td>18.6</td>
<td>44.1</td>
<td>37.8</td>
</tr>
<tr>
<td>31-44 Yrs</td>
<td>28</td>
<td>0</td>
<td>23</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>54.9</td>
<td>0.0</td>
<td>45.1</td>
<td>32.7</td>
</tr>
<tr>
<td>45 Yrs &amp; Above</td>
<td>30</td>
<td>4</td>
<td>12</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>65.2</td>
<td>8.7</td>
<td>26.1</td>
<td>29.5</td>
</tr>
<tr>
<td>Column Total</td>
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<td>15</td>
<td>61</td>
<td>156</td>
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<tr>
<td>Total</td>
<td>51.3</td>
<td>9.6</td>
<td>39.1</td>
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Chi Square = 16.90514  Df = 4  p < 0.002
Missing Data = 6
Table B3

Onset of Deafness by Frequency of Use

of Deaf Signs with a Child

<table>
<thead>
<tr>
<th>Count</th>
<th>Partly</th>
<th>Mostly</th>
<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row Pct</td>
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<td></td>
<td></td>
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<tr>
<td>Onset</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-2 Yrs</td>
<td>34</td>
<td>35</td>
<td>53</td>
<td>122</td>
</tr>
<tr>
<td></td>
<td>27.9</td>
<td>28.7</td>
<td>43.4</td>
<td>78.7</td>
</tr>
<tr>
<td>More than 2 Yrs</td>
<td>7</td>
<td>18</td>
<td>8</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>21.2</td>
<td>54.5</td>
<td>24.2</td>
<td>21.3</td>
</tr>
<tr>
<td>Column Total</td>
<td>41</td>
<td>53</td>
<td>61</td>
<td>155</td>
</tr>
<tr>
<td>Total</td>
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<td>34.2</td>
<td>39.4</td>
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</table>

Chi Square = 7.94689  Df = 2  p < 0.0188

Missing Data = 7
### Table B4

Hearing Aid Usage by Time at Which Signs Should be Learned

<table>
<thead>
<tr>
<th>Time</th>
<th>Count</th>
<th>Signs First</th>
<th>After Speech</th>
<th>With Speech</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearing Aid</td>
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<td></td>
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<tr>
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<td>7</td>
<td>11</td>
<td>28</td>
<td>35.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25.0</td>
<td>39.3</td>
<td></td>
<td>18.1</td>
</tr>
<tr>
<td>Sometimes</td>
<td>8</td>
<td>2</td>
<td>14</td>
<td>24</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.3</td>
<td>58.3</td>
<td></td>
<td>15.5</td>
</tr>
<tr>
<td>Never</td>
<td>62</td>
<td>5</td>
<td>36</td>
<td>103</td>
<td>60.2</td>
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</tr>
<tr>
<td>Column Total</td>
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<td>36</td>
<td>155</td>
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<tr>
<td>Total</td>
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<td>39.4</td>
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Chi Square = 17.00606  Df = 4  P < 0.0019

Missing Data = 7
Table B5
Voice with Hearing People by Type of Signing to be Initially Acquired

<table>
<thead>
<tr>
<th>Row Pct</th>
<th>Deaf Signs</th>
<th>English Signs</th>
<th>Both</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voice</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Always</td>
<td>10</td>
<td>10</td>
<td>31</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>19.6</td>
<td>19.6</td>
<td>60.8</td>
<td>31.9</td>
</tr>
<tr>
<td>Sometimes</td>
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<td>14</td>
<td>34</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>38.5</td>
<td>17.9</td>
<td>43.6</td>
<td>48.8</td>
</tr>
<tr>
<td>Never</td>
<td>13</td>
<td>9</td>
<td>9</td>
<td>31</td>
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<td>41.9</td>
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</table>

Chi Square = 10.00475  Df = 4  P < 0.0403
Missing Data = 2
Table B6

Communication first Learned by Type of Signing to be Initially Acquired

<table>
<thead>
<tr>
<th>Count Row Pct</th>
<th>Deaf Signs</th>
<th>English Signs</th>
<th>Both</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Sign Language</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sign</td>
<td>14</td>
<td>11</td>
<td>13</td>
<td>38</td>
</tr>
<tr>
<td>Language</td>
<td>36.8</td>
<td>28.9</td>
<td>34.2</td>
<td>24.4</td>
</tr>
<tr>
<td>Speech</td>
<td>30</td>
<td>17</td>
<td>32</td>
<td>79</td>
</tr>
<tr>
<td>Both</td>
<td>8</td>
<td>4</td>
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<td>39</td>
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<td></td>
<td>20.5</td>
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</tbody>
</table>

Chi Square = 12.15121   Df = 4   P < 0.0163

Missing Data = 6
Table B7
Communication First Learned by Time
at Which Signs Should be Learned

<table>
<thead>
<tr>
<th>Count Row Pct</th>
<th>Signs First</th>
<th>After Speech</th>
<th>With Speech</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>30</td>
<td>2</td>
<td>5</td>
<td>37</td>
</tr>
<tr>
<td>Sign Language</td>
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</tr>
<tr>
<td>Speech</td>
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<td>75</td>
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<td>36.0</td>
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<td>48.0</td>
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<td>19</td>
<td>39</td>
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<td></td>
<td>48.7</td>
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<td>48.7</td>
<td>25.8</td>
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<tr>
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<td>15</td>
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Chi Square = 24.18982  Df = 4  P < 0.0001
Missing Data = 11
Table B8

Communication First Learned by Frequency of Use of Deaf Signs with a Child

<table>
<thead>
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<th>Partly</th>
<th>Mostly</th>
<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Count</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Row Pct</strong></td>
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</tr>
<tr>
<td>Sign</td>
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<td>13</td>
<td>12</td>
<td>35</td>
</tr>
<tr>
<td>Language</td>
<td>28.6</td>
<td>37.1</td>
<td>34.3</td>
<td>23.3</td>
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<td>Speech</td>
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<td>32</td>
<td>21</td>
<td>77</td>
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<td></td>
<td>31.2</td>
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<td>13.2</td>
<td>21.1</td>
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<td>35.3</td>
<td>38.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 16.34944 Df = 4 P < 0.0026

Missing Data = 12
Table B9

Deaf Community Membership by type of Signing to be Initially Acquired

<table>
<thead>
<tr>
<th>Count</th>
<th>Initial</th>
<th>Deaf Signs</th>
<th>English Signs</th>
<th>Both Signs</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Member</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Full-time</td>
<td>39</td>
<td>13</td>
<td>37</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>43.8</td>
<td>14.6</td>
<td>41.6</td>
<td>56.7</td>
</tr>
<tr>
<td></td>
<td>Part-time</td>
<td>15</td>
<td>20</td>
<td>33</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22.1</td>
<td>29.4</td>
<td>48.5</td>
<td>43.3</td>
</tr>
<tr>
<td></td>
<td>Column</td>
<td>54</td>
<td>33</td>
<td>70</td>
<td>157</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>34.4</td>
<td>21.0</td>
<td>44.6</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 9.74553  Df = 2  P < 0.0077

Missing Data = 5
### Table B10

Deaf Community Membership by Frequency of Use of Deaf Signs with a Child

<table>
<thead>
<tr>
<th>Count</th>
<th>Partly</th>
<th>Mostly</th>
<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>15</td>
<td>35</td>
<td>37</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>17.2</td>
<td>40.2</td>
<td>42.5</td>
<td>57.6</td>
</tr>
<tr>
<td>Part-time</td>
<td>24</td>
<td>17</td>
<td>23</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>37.5</td>
<td>26.6</td>
<td>35.9</td>
<td>42.4</td>
</tr>
<tr>
<td>Column</td>
<td>39</td>
<td>52</td>
<td>60</td>
<td>151</td>
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<tr>
<td>Total</td>
<td>25.8</td>
<td>34.4</td>
<td>39.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 8.26274  
Df = 2  
P < 0.0161  
missing Data = 11
Table B11

Dormitory experience by Time at Which Signs Should be Learned

<table>
<thead>
<tr>
<th>Count</th>
<th>Signs First</th>
<th>After Speech</th>
<th>With Speech</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row Pct</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dormitory</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>64</td>
<td>3</td>
<td>38</td>
<td>105</td>
</tr>
<tr>
<td></td>
<td>61.0</td>
<td>2.9</td>
<td>36.2</td>
<td>67.3</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>12</td>
<td>23</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>31.4</td>
<td>23.5</td>
<td>45.1</td>
<td>32.7</td>
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<tr>
<td>Column</td>
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<td>61</td>
<td>156</td>
</tr>
<tr>
<td>Total</td>
<td>51.3</td>
<td>9.6</td>
<td>39.1</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 21.80946  Df = 2  P < 0.0000

Missing Data = 6
Table B12
Preference for Captioned or Interpreted News by Frequency of Use of Deaf Signs with a Child

<table>
<thead>
<tr>
<th>Deaf Signs with a Child</th>
<th>Partly</th>
<th>Mostly</th>
<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preferred</td>
<td>30</td>
<td>31</td>
<td>48</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>27.5</td>
<td>28.4</td>
<td>44.0</td>
<td>76.2</td>
</tr>
<tr>
<td>Did Not</td>
<td>7</td>
<td>18</td>
<td>9</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>20.6</td>
<td>52.9</td>
<td>26.5</td>
<td>23.8</td>
</tr>
<tr>
<td>Column</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Total</td>
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<td>49</td>
<td>57</td>
<td>143</td>
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<tr>
<td></td>
<td>25.9</td>
<td>34.3</td>
<td>39.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 7.02806  Df = 2  p < 0.0298
Missing Data = 19
### Table B13

Understanding of Captions by Type of Signing to be Initially Acquired

<table>
<thead>
<tr>
<th>Count</th>
<th>Deaf Signs</th>
<th>English Signs</th>
<th>Both</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Row Pct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most of Captions</td>
<td>36</td>
<td>12</td>
<td>46</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>38.3</td>
<td>12.8</td>
<td>48.9</td>
<td>65.3</td>
</tr>
<tr>
<td>Some of Captions</td>
<td>13</td>
<td>16</td>
<td>21</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>26.0</td>
<td>32.0</td>
<td>42.0</td>
<td>34.7</td>
</tr>
<tr>
<td>Column</td>
<td>49</td>
<td>28</td>
<td>67</td>
<td>144</td>
</tr>
<tr>
<td>Total</td>
<td>34.0</td>
<td>19.4</td>
<td>46.5</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 7.99798  
Df = 2  
P < 0.0183  
Missing Data = 18
Appendix C
<table>
<thead>
<tr>
<th>Count Row Pct</th>
<th>Deaf Signs</th>
<th>English Signs</th>
<th>Both</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaf Signs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td>46</td>
<td>18</td>
<td>42</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>43.4</td>
<td>17.0</td>
<td>39.6</td>
<td>67.5</td>
</tr>
<tr>
<td>Do Not</td>
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<td>29</td>
<td>51</td>
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<tr>
<td></td>
<td>13.7</td>
<td>29.4</td>
<td>56.9</td>
<td>32.5</td>
</tr>
<tr>
<td>Column Total</td>
<td>53</td>
<td>33</td>
<td>71</td>
<td>157</td>
</tr>
<tr>
<td>Total</td>
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<td>21.0</td>
<td>45.2</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 13.77398  Df = 2  P < 0.001
Missing Data = 5
Table C2
Prefer Deaf Signs at Home by Type of Signing to be Initially Acquired

<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Deaf Signs</td>
<td>English Signs</td>
<td>Both</td>
</tr>
<tr>
<td></td>
<td>Row Pct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaf Signs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preferred</td>
<td>44</td>
<td>17</td>
<td>52</td>
<td>113</td>
</tr>
<tr>
<td>Did Not</td>
<td>10</td>
<td>16</td>
<td>22</td>
<td>48</td>
</tr>
<tr>
<td>Column</td>
<td>54</td>
<td>33</td>
<td>74</td>
<td>161</td>
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<tr>
<td>Total</td>
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<td>20.5</td>
<td>46.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 8.79042  Df = 2  P < 0.0123
Missing Data = 1
Table C3
Prefer English Signs at Home By Type of Signing to be Initially Acquired

<table>
<thead>
<tr>
<th>Count</th>
<th>Initial</th>
<th>Deaf Signs</th>
<th>English Signs</th>
<th>Both Signs</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Signs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preferred</td>
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<td>8</td>
<td>9</td>
<td>19</td>
<td>11.8</td>
</tr>
<tr>
<td></td>
<td>10.5</td>
<td>42.1</td>
<td>47.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did Not</td>
<td>52</td>
<td>25</td>
<td>65</td>
<td>142</td>
<td>88.2</td>
</tr>
<tr>
<td></td>
<td>36.6</td>
<td>17.6</td>
<td>45.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Column</td>
<td>54</td>
<td>33</td>
<td>74</td>
<td>161</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>33.5</td>
<td>20.5</td>
<td>46.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Chi Square = 8.31841
Df = 2
P < 0.0156

Missing Data = 1
Table C4

Use of Deaf Signs at Home by Time at Which signs should be Learned

<table>
<thead>
<tr>
<th>Time</th>
<th>Signs First</th>
<th>After Speech</th>
<th>With Speech</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count Row Pct</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaf Signs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td>62</td>
<td>7</td>
<td>34</td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>60.2</td>
<td>6.8</td>
<td>33.0</td>
<td>67.3</td>
</tr>
<tr>
<td>Do Not</td>
<td>16</td>
<td>7</td>
<td>27</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>32.0</td>
<td>14.0</td>
<td>54.0</td>
<td>32.7</td>
</tr>
<tr>
<td>Column</td>
<td>78</td>
<td>14</td>
<td>61</td>
<td>153</td>
</tr>
<tr>
<td>Total</td>
<td>51.0</td>
<td>9.2</td>
<td>39.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 10.87724  Df = 2  P < 0.0043

Missing Data = 9
Table C5
Use Speech at Home by Time at Which Signs Should be Learned

<table>
<thead>
<tr>
<th>Count</th>
<th>Signs First</th>
<th>After Speech</th>
<th>With Speech</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row Pct</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speech</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td>20</td>
<td>9</td>
<td>27</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>35.7</td>
<td>16.1</td>
<td>48.2</td>
<td>36.6</td>
</tr>
<tr>
<td>Do Not</td>
<td>58</td>
<td>5</td>
<td>34</td>
<td>97</td>
</tr>
<tr>
<td></td>
<td>59.8</td>
<td>5.2</td>
<td>35.1</td>
<td>63.4</td>
</tr>
<tr>
<td>Column</td>
<td>20</td>
<td>9</td>
<td>27</td>
<td>153</td>
</tr>
<tr>
<td>Total</td>
<td>51.0</td>
<td>9.2</td>
<td>39.9</td>
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</tr>
</tbody>
</table>

Chi Square = 10.20484  Df = 2  P < 0.0061
Missing Data = 9
Table C6
Prefer Speech at Home by Time at Which Signs Should be Learned

<table>
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<tr>
<th>Time</th>
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<th>With Speech</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Row Pct</td>
<td>Speech</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speech</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preferred</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>18.8</td>
<td>31.3</td>
<td>50.0</td>
<td>10.3</td>
</tr>
<tr>
<td>Did not</td>
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<td>10</td>
<td>53</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>55.0</td>
<td>7.1</td>
<td>37.9</td>
<td>89.7</td>
</tr>
<tr>
<td>Column</td>
<td>80</td>
<td>15</td>
<td>61</td>
<td>156</td>
</tr>
<tr>
<td>Total</td>
<td>51.3</td>
<td>9.6</td>
<td>39.1</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 12.89940  Df = 2  P < 0.0016
Missing Data = 6
Table C7
Use English Signs to Deaf Friends by Frequency of Use of Deaf Signs with a Teacher

<table>
<thead>
<tr>
<th>Count Row Pct</th>
<th>Partly</th>
<th>Mostly</th>
<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Signs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td>15</td>
<td>6</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>57.7</td>
<td>23.1</td>
<td>19.2</td>
<td>16.7</td>
</tr>
<tr>
<td>Do Not</td>
<td>27</td>
<td>47</td>
<td>56</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>20.8</td>
<td>36.2</td>
<td>43.1</td>
<td>83.3</td>
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<tr>
<td>Column</td>
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<td>Total</td>
<td>26.9</td>
<td>34.0</td>
<td>39.1</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 15.21281  Df = 2  p < 0.0005
Missing Data = 6
Table C8
Prefer Deaf Signs at Home by Frequency of Use of Deaf Signs with a Teacher

<table>
<thead>
<tr>
<th>Count</th>
<th>Partly</th>
<th>Mostly</th>
<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row Pct</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaf Signs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preferred</td>
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<td>39</td>
<td>49</td>
<td>112</td>
</tr>
<tr>
<td></td>
<td>21.4</td>
<td>34.8</td>
<td>43.8</td>
<td>71.8</td>
</tr>
<tr>
<td>Did Not</td>
<td>18</td>
<td>14</td>
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<td>44</td>
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<td></td>
<td>40.9</td>
<td>31.8</td>
<td>27.3</td>
<td>28.2</td>
</tr>
<tr>
<td>Column Total</td>
<td>42</td>
<td>53</td>
<td>61</td>
<td>156</td>
</tr>
<tr>
<td>Total</td>
<td>26.9</td>
<td>34.0</td>
<td>39.1</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 6.72992  
Df = 2  
P < 0.0346

Missing Data = 6
Table C9
Use Speech at Home by Frequency of Use of English Signs with a Teacher

<table>
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<th>Partly</th>
<th>Mostly</th>
<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
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<td>Count Row Pct</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speech</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use</td>
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<td>15</td>
<td>27</td>
<td>57</td>
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<tr>
<td></td>
<td>26.3</td>
<td>26.3</td>
<td>47.4</td>
<td>37.3</td>
</tr>
<tr>
<td>Do Not</td>
<td>21</td>
<td>45</td>
<td>30</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>21.9</td>
<td>46.9</td>
<td>31.3</td>
<td>62.7</td>
</tr>
<tr>
<td>Column</td>
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<td>60</td>
<td>57</td>
<td>153</td>
</tr>
<tr>
<td>Total</td>
<td>23.5</td>
<td>39.2</td>
<td>37.3</td>
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</table>

Chi Square = 6.64871  Df = 2  P < 0.036

Missing Data = 9
### Table C10

Prefer Deaf Signs with Hearing Friends by Frequency of Use of English Signs with a Teacher

<table>
<thead>
<tr>
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<th>Partly</th>
<th>Mostly</th>
<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Count</strong></td>
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</tr>
<tr>
<td><strong>Row Pct</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Deaf Signs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preferred</td>
<td>20</td>
<td>19</td>
<td>12</td>
<td>51</td>
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<td>39.2</td>
<td>37.3</td>
<td>23.5</td>
<td>67.5</td>
</tr>
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<td>41</td>
<td>46</td>
<td>106</td>
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<td>17.9</td>
<td>38.7</td>
<td>43.4</td>
<td>67.5</td>
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<td>24.8</td>
<td>38.2</td>
<td>36.9</td>
<td>100.0</td>
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Chi Square = 9.98068  
Df = 2  
P < 0.0068

Missing Data = 5
Table C11

Prefer English Signs with Hearing Friends by Frequency of English Signs with a Teacher

<table>
<thead>
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<th>Mostly</th>
<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Signs</td>
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<td></td>
</tr>
<tr>
<td>Preferred</td>
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<td>13</td>
<td>8</td>
<td>21</td>
</tr>
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<td>0.0</td>
<td>61.9</td>
<td>38.1</td>
<td>13.4</td>
</tr>
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<td>Did Not</td>
<td>39</td>
<td>47</td>
<td>50</td>
<td>136</td>
</tr>
<tr>
<td></td>
<td>28.7</td>
<td>34.6</td>
<td>36.8</td>
<td>86.6</td>
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<tr>
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<td>39</td>
<td>60</td>
<td>58</td>
<td>157</td>
</tr>
<tr>
<td>Total</td>
<td>24.8</td>
<td>38.2</td>
<td>36.9</td>
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</table>

Chi Square = 9.59030  Df = 2  p < 0.0083

Missing Data = 5
Table C12

Prefer Speech with Hearing Friends by Frequency of Use of English Signs with a Teacher

<table>
<thead>
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<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
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<td></td>
</tr>
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<td></td>
</tr>
<tr>
<td>Preferred</td>
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<td>20</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>17.1</td>
<td>25.7</td>
<td>57.1</td>
<td>22.3</td>
</tr>
<tr>
<td>Did Not</td>
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<td>51</td>
<td>38</td>
<td>122</td>
</tr>
<tr>
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<td>27.0</td>
<td>41.8</td>
<td>31.1</td>
<td>77.7</td>
</tr>
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<td><strong>Column Total</strong></td>
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<td>60</td>
<td>58</td>
<td>157</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>24.8</td>
<td>38.2</td>
<td>36.9</td>
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Chi Square = 7.89161  
Df = 2  
P < 0.0193

Missing Data = 5
Table C13
Prefer deaf Signs at Home by Frequency of Use of Deaf Signs with a Child

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<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Row Pct</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Deaf Signs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preferred</td>
<td>23</td>
<td>42</td>
<td>47</td>
<td>112</td>
</tr>
<tr>
<td></td>
<td>20.5</td>
<td>37.5</td>
<td>42.0</td>
<td>72.3</td>
</tr>
<tr>
<td>Did Not</td>
<td>18</td>
<td>11</td>
<td>14</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>41.9</td>
<td>25.6</td>
<td>32.6</td>
<td>27.7</td>
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<td>Column Total</td>
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<td>53</td>
<td>61</td>
<td>155</td>
</tr>
<tr>
<td>Total</td>
<td>26.5</td>
<td>34.2</td>
<td>39.4</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 7.33091  Df = 2  P < 0.0256
Missing Data = 7
Table C14

Use English Signs with Deaf Friends by Frequency of Use of English Signs with a Child.

<table>
<thead>
<tr>
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<th>Partly</th>
<th>Mostly</th>
<th>Always</th>
<th>Row Total</th>
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<tbody>
<tr>
<td>Count Row Pct</td>
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<td></td>
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<tr>
<td>English Signs</td>
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</tr>
<tr>
<td>Use</td>
<td>2</td>
<td>6</td>
<td>20</td>
<td>28</td>
</tr>
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<td></td>
<td>7.1</td>
<td>21.4</td>
<td>71.4</td>
<td>17.8</td>
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<tr>
<td>Do Not</td>
<td>28</td>
<td>54</td>
<td>47</td>
<td>129</td>
</tr>
<tr>
<td></td>
<td>21.7</td>
<td>41.9</td>
<td>36.4</td>
<td>82.2</td>
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<td>30</td>
<td>60</td>
<td>67</td>
<td>157</td>
</tr>
<tr>
<td>Total</td>
<td>19.1</td>
<td>38.2</td>
<td>42.7</td>
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Chi Square = 11.66836  Df = 2  P < 0.0029

Missing Data = 5
### Table C15

**Prefer Deaf Signs with Deaf Friends by Frequency of Use of English Signs with a Child**

<table>
<thead>
<tr>
<th>English Signs with a Child</th>
<th>Count</th>
<th>Partly</th>
<th>Mostly</th>
<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Row Pct</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td><strong>Deaf Signs</strong></td>
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<td>Preferred</td>
<td>30</td>
<td>55</td>
<td>54</td>
<td>139</td>
<td>88.5</td>
</tr>
<tr>
<td></td>
<td>21.6</td>
<td>39.6</td>
<td>38.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did Not</td>
<td>0</td>
<td>5</td>
<td>13</td>
<td>18</td>
<td>11.5</td>
</tr>
<tr>
<td></td>
<td>0.0</td>
<td>27.8</td>
<td>72.2</td>
<td></td>
<td></td>
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<tr>
<td><strong>Column</strong></td>
<td>30</td>
<td>60</td>
<td>67</td>
<td>157</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>19.1</td>
<td>38.2</td>
<td>42.7</td>
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</table>

Chi Square = 8.62380  
Df = 2  
P < 0.0134  
Missing Data = 5
Table C16

Prefer Deaf Signs with Hearing Friends by Frequency of Use of English Signs with a Child

<table>
<thead>
<tr>
<th>Count Row Pct</th>
<th>Partly</th>
<th>Mostly</th>
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<tbody>
<tr>
<td>Deaf Signs</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Preferred</td>
<td>16</td>
<td>19</td>
<td>16</td>
<td>51</td>
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<tr>
<td></td>
<td>31.4</td>
<td>37.3</td>
<td>31.4</td>
<td>32.5</td>
</tr>
<tr>
<td>Did Not</td>
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<td>41</td>
<td>51</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>13.2</td>
<td>38.7</td>
<td>48.1</td>
<td>67.5</td>
</tr>
<tr>
<td>Column Total</td>
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<td>60</td>
<td>67</td>
<td>157</td>
</tr>
<tr>
<td>Total</td>
<td>19.1</td>
<td>38.2</td>
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</table>

Chi Square = 8.22553  Df = 2  P < 0.0164
Missing Data = 5
Table C17
Prefer Deaf Signs at Home by Frequency of Use of English Signs with a Child

<table>
<thead>
<tr>
<th>Count</th>
<th>Row Pct</th>
<th>English Signs with a Child</th>
<th>Partly</th>
<th>Mostly</th>
<th>Always</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaf Signs</td>
<td>Preferred</td>
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<td>43</td>
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<td>110</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>24.5</td>
<td>39.1</td>
<td>36.4</td>
<td>70.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Did Not</td>
<td>3</td>
<td>17</td>
<td>27</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.4</td>
<td>36.2</td>
<td>57.4</td>
<td>29.9</td>
<td></td>
</tr>
<tr>
<td>Column Total</td>
<td>30</td>
<td>60</td>
<td>67</td>
<td>157</td>
<td></td>
<td></td>
</tr>
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<td>Total</td>
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<td>38.2</td>
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Chi Square = 9.18831  Df = 2  P < 0.0101
Missing Data = 5