



# 35 years of Bilingual Deaf Education – and then?

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## *35 anos de Educação Bilíngue de surdos – e então?*

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### ABSTRACT

In this article, an overview of the last 35 years of bilingual education for the deaf in Sweden is presented. A short presentation is given of the terms ‘first language/mother tongue’ and ‘second/foreign language’, used in this specific context, to debate some of the main assumptions underlying first and second language teaching to deaf children. We discuss the main results from the bilingual approach, demonstrating the high level of achievements when considered in an international perspective. These results are compared to data from the first period of deaf education in Sweden, after the foundation of the Manilla school in 1809. The common basis for these examples of successful deaf education can be summarized as a positive attitude to sign language and its users. Then, we analyze some differences between natural sign languages versus simultaneous use of signs and speech, wherein the deaf addressee usually receives inconsistent linguistic information, thus making this practice less appropriate for the language learner. A discussion follows up language teaching to deaf children, including teaching a third language to them, such as English, for example. It is noted that the group of sign language users is currently undergoing a great change, especially because of the growing number of children with cochlear implants: their need for bilingualism, including sign language, is emphasized.

*Keywords:* bilingual education; deaf education in Sweden; sign language.

### RESUMO

Neste artigo, apresenta-se um panorama dos últimos 35 anos de educação bilíngue para surdos, na Suécia. Faz-se uma breve apresentação dos

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conceitos de “primeira língua/língua materna” e “segunda língua/língua estrangeira”, utilizados neste contexto específico, para debater alguns dos principais pressupostos subjacentes ao ensino de primeira e segunda língua para crianças surdas. Discutimos os principais resultados da abordagem bilíngue, demonstrando o alto nível de conquistas, quando consideradas em uma perspectiva internacional. Esses resultados são comparados com dados do primeiro período de educação de surdos na Suécia, após a fundação da escola de Manilla em 1809. A base comum para estes exemplos de sucesso na educação de surdos pode ser resumida como uma atitude positiva em relação à língua de sinais e seus usuários. Em seguida, discutem-se algumas diferenças entre as línguas de sinais naturais versus a utilização simultânea de sinais e fala, quando o interlocutor surdo normalmente recebe informações linguísticas inconsistentes, fazendo com que esta prática seja menos adequada para o aprendiz da língua. Segue-se uma discussão de ensino de língua para crianças surdas, incluindo o ensino de uma terceira língua, como o Inglês, por exemplo. Observa-se que o grupo de usuários de língua de sinais está sofrendo uma grande mudança na atualidade, especialmente devido ao crescente número de crianças com implantes cocleares: enfatiza-se a necessidade do bilinguismo para este grupo, incluindo a língua de sinais.

*Palavras-chave:* educação bilíngue; educação de surdos na Suécia; língua de sinais.

## Introduction

When developmental work and research within the bilingual education for the deaf field began to take shape around 1980, the outcome of deaf education in Sweden was similar to what could be found elsewhere all around the world where deaf children were offered special education. Reading and writing the language of the surrounding society were skills that few deaf school-leavers mastered, not to mention their lack of oral skills in the language concerned (CONRAD, 1979; KRETSCHMER Jr., R. R.; KRETSCHMER, L. W., 1978; SVARTHOLM, 1984).

In spite of the fact that deaf education focused mainly on speech and speech training, most of the early studies within the field concentrated on the writing of deaf students – presumably because of the relatively unintelligibility of the oral language of most prelingual deaf individuals (DAWSON, 1981). As to reading skills, it was considered ‘normal’ for deaf students to reach a maximal level corresponding to the 3<sup>rd</sup> grade; as to their writing it was difficult to make any

comparisons to hearing children because it showed many ‘peculiar’ grammatical errors and mistakes not found in texts from the latter (SVARTHOLM, 1984).

Generally speaking, such disappointing results have continued to be quite the same over the years with only slight changes to the better. In the U.S., academic achievement, including reading level in deaf school leavers, was described as follows around ten years ago:

[...] on average, 18-year-old deaf students leaving high school have reached only a fourth to sixth grade level in reading skills. Only about 3 percent of those 18 years old read at the same level as the average 18-year-old hearing reader, and more than 30 percent of deaf students leave school functionally illiterate. (MARSCHARK; LANG; ALBERTINI, 2012).

The situation has not been reported to have changed radically since then, internationally. Deaf education has a long way to go before the results are satisfactory.

### **First, second, foreign, third language?**

The terms used for sign language versus spoken language (‘first/second language’) in relation to the deaf may sometimes cause misunderstandings. Since sign language only by way of exception is transferred between adults and children within the family from the very beginning of the child’s life, many people avoid the term ‘mother tongue’ and use instead ‘first language’ or ‘primary language’ for it.

The term ‘first language’ is normally not used for the precise order in which the language is learned but rather for its role in the child’s development. This term is used for the language that fulfils important functions for the child (cognitive, emotional, social) and it is extra important when applied to deaf children, for the language that is learned naturally in normal, interactive situations together with other children and adults who use the language.

Besides ‘first language’, terms like ‘primary language’ or ‘dominant language’ are used in a similar sense. The term ‘second language’ often refers to a language that is taught within the society where it is used. When teaching

this, the methods used can be founded on the first language, as in the case of teaching, *e.g.*, Swedish as a second language to the deaf. ‘Foreign language’ usually refers to languages that are used in other countries and thus require another approach in education.

## **Bilingual education: the Swedish model**

During the early 80’ies a lot of important changes were carried through in the Swedish special schools for the deaf and in their national steering documents. Following the decision of the Swedish Parliament in 1981 of acknowledging Swedish Sign Language as a language in its own right, as well as the right of deaf people to become bilinguals, a new National Curriculum was worked out and the implementation of the new ideas in the schools for the deaf could begin (SVARTHOLM, 2010b).

The model for bilingual teaching is based on the assumption that deaf children do have sign language as their first language, even if for most individuals this must be provided to them by extra support to their families as well as preschools where sign language is used, and thus also a primary language as a base for teaching a second language to them. This second language is presumed to be mainly the written language form of the society’s language, not speech, simply because written language is visually accessible in full, but speech is not. Speech is, however, not excluded from teaching. Instead, it has another role here than what it has usually been assigned in deaf education. In this bilingual perspective, speech is considered mainly as a complement to sign language and written language, not as a means for learning the language as such. Instead, speech and lip-reading are looked upon principally as ways of practicing already existing knowledge about the language.

The developmental work within the schools was supported by Swedish linguistic research about similarities and differences between deaf and hearing children’s second language acquisition (SVARTHOLM, 2006, 2010b, SCHÖNSTRÖM, 2010). Linguists cooperated with teachers within the classrooms. Contrastive work was central: together with deaf children, teachers – both hearing and deaf – ‘read’ texts, in the sense that they looked for meaning in the texts and retold this meaning in Swedish Sign Language; the teachers explained linguistic expressions found in the texts, they compared the two languages and discussed linguistic features found in them (MAHSHIE, 1995, SVARTHOLM, 1993).

## Results from the Bilingual Approach

The first experimental group of deaf children that completed their schooling according to this model reached a reading level corresponding to hearing children in the same age group. In their writing they still made some grammatical errors, showing that Swedish was their second language, but their written language was nevertheless well-functioning and fully intelligible to others (SVARTHOLM, 1998). The insights gained from research about their reading and the strategies they used to understand Swedish texts were important for further development of bilingual teaching methods and of teacher training programs within and outside Sweden.

It was, however, not until after the year 2000 that it became possible to evaluate the general outcomes of this bilingual approach. That year The National Agency for Special Schools for the Deaf and Hard of Hearing (SPM) was established (in 2008: The National Agency for Special Needs of Education and Schools, SPSM). In the annual reports from this Agency statistics regarding the results among school leavers from all special schools were published.

Passing in the so-called core subjects, Swedish, Mathematics and English (and, for deaf students, also Swedish sign language), is a prerequisite for entrance to the Swedish ‘gymnasium’ (‘Senior High School’), whether the students are deaf or hearing. National tests were used to judge that, basically the same for regular schools and the special schools. For the subjects Swedish and English though, speech skills were excluded from the tests when used within the schools for the deaf.

Here it may suffice to present the figures for the school-year 2007/2008 (see SVARTHOLM, 2010b for an overview). The percentages of deaf students who passed the tests were ranging between Mathematics (55%), English (59%), Swedish (69%) and Sign Language (77%). The corresponding figure for hearing students that year was nearly 95% on average for these core subjects. Thus, deaf students did not reach the same levels as hearing students did. There were many deaf students with top results but there were also many with very poor ones.

Figures like these caused worries because of the differences found. An investigation was initiated by the Government, aiming at mapping the attainments among deaf and hard of hearing students not only in the special schools but also in other types of school settings (HENDAR, 2008). It became clear that deaf and hard of hearing students had difficulties in achieving high grades in general, irrespective of the type of school they attended.

In the discussions that followed this report an international perspective on achievements among deaf students in general was lacking. Instead, the results were considered as more or less disastrous by many, including representatives of educational authorities. The ‘poor’ results were even used by some of them as arguments for rejecting the need for special schools for the deaf and hard of hearing; flexibility in the choice of schooling became a new concept in the discussion (SOU 2011:30).

The international perspective was lacking also when taking another factor which was not highlighted in the discussions, namely the relative number of deaf students within higher education. Just as hearing students, deaf students must pass the ‘gymnasium’ before entering higher education, including university studies. Elsewhere I have reported the following about the situation in Sweden:

[...] the number of deaf students at universities and university colleges all over Sweden has increased steadily. In 1993/1994 there were altogether 48 students using sign language interpreters to take part in higher education. The corresponding figure for the year 2003 was approximately three times higher, namely 149 students (HSV, 2004, p. 12). This figure might seem very small, but it corresponds to approximately three age cohorts of the deaf population in Sweden. (SVARTHOLM, 2005)

Ten years later the corresponding figure shows a stable trend, with 141 students. Moreover, other 28 students must be added that year, namely deaf students from the Stockholm University with signing university teachers (SU ÅRSREDOVISNING, 2013). So far, I have not seen any comparable data from any other country. Such a growing number of deaf academicians must however be considered an important sign of deaf education being successful at lower levels.

## **A short historical flashback**

When searching for earlier educational results that could be considered successful, one must go far back in time, namely to the earliest period of institutionalized deaf education in Sweden, when the Manilla School for the Deaf had been founded in Stockholm in 1809, to find something similar.

During the first 50 years of this school’s history Swedish sign language was used as a course matter within and outside the classrooms. The idea was

that the deaf students hereby should gain knowledge and get the opportunity to develop individually, on their own merits. Sign language was also used for teaching written Swedish with literacy as the goal for this teaching. Those students that could benefit from speech training were taught speech, but it was seen as important that this training did not interfere with the training in other school subjects (SVARTHOLM, 2010a).

School subjects were of a wide variety such as religion, mathematics, geography, astronomy, natural sciences, history, and bookkeeping. The main goal of the education offered was that the deaf students could have a profession and could make their own living after finishing school. Training in more than 15 different trade skills was offered to boys; girls were mostly offered training in housekeeping.

From this first period of deaf education in Sweden a long list of successful former students from the Manilla school can be formed, since there were deaf persons that became important in different ways within society and in the deaf community. Some became teachers for the deaf, some of them even founded schools for the deaf themselves, including the very first school for the deaf in Finland, and there were founders of deaf associations; one became a highly recognized marine painter and so on (SVARTHOLM, 2010a).

The basis for this early, remarkably successful deaf education can be summarized by its two interdependent components: recognition of the need for sign language in the lives of deaf people alongside with a great faith in the abilities of the deaf. The importance of these components becomes evident when comparing this period with later periods of deaf education, both in Sweden and in other countries, when oralism took over as the dominating philosophy. Rejecting sign language and showing a fundamentalist attitude towards deaf people who were taken as deficient, without speech skills, were their hallmarks. Satisfactory reading and writing skills became rare among the deaf and the number of deaf people being successful in society dropped significantly (SVARTHOLM, 2010a).

## Natural Sign Language versus Speech + Signs

For a deeper understanding of the advantages that the use of sign language in deaf education entails, it is important to understand some of the linguistic properties of signed languages and the implications of them for its users. Swedish sign language, i.e. the language used among the deaf in Sweden, is a gestural-visual language just as any other natural sign language is. ‘Gestural’ implies

that the language is produced not only manually, by the hands, but also by other gestural means such as head and mouth movements and by using the eyes and eyebrows and so on. ‘Visual’ implies how the language is perceived, by vision.

Other words used for characterizing natural sign languages are that they are ‘visual-spatial’. This means a focus on not only the perception of these languages but also on a very typical feature of their linguistic organization, their so called spatiality. The three-dimensional space in front of the signer is actually used in different ways for expressing linguistic information. Manually expressed signs can be directed to different intended positions in that space; gaze and the posture of the head, among others, can also ‘point’ to those positions. Altogether, spatiality is a linguistically very complex property of signed languages, characterizing sentence structures as well as text structures and individual signs (AHLGREN; BERGMAN 2006; BERGMAN, 2012).

Another characteristic feature of signed languages is that they permit much more simultaneously produced information than what spoken languages do. For instance, linguistic information can be added to a signed sequence by adding specific mouth movements or by moving the eyebrows with the manual signs. What is often thought of as ‘a lively mimicry’ by non-signers when they watch sign language users is in fact an additional layer of linguistic information.

Those complex structural and organizational differences between spoken and signed languages entail that it is impossible to use the two types of languages simultaneously. It is of course possible to pronounce words together with performing a manual sign, but what happens then is that pairs of words/signs are produced simultaneously, not two languages. It is not possible to express more complex linguistic information as in full sentences and longer, coherent linguistic entities in this way. The linguistic organization differs too much between the languages.

There is also another obstacle for those who wish to speak and sign simultaneously, namely the lexical differences between the languages involved. For Swedish and Swedish sign Language, for instance, there is no one-to-one relationship between words and signs: sometimes one word corresponds to several signs and sometimes one sign corresponds to several words. Thus, consistency in choosing the ‘correct’ word and sign pair is impossible, especially when speech + signs are used in normal, natural conversations. It may function to some degree for very short, simple messages such as the ones used to very small children but not for any fuller communication.

The lack of one-to-one relationship between the languages leads typically to an inconsistent and thus also a quite confusing linguistic input for the deaf language learner, i.e. a child, a fact well-known from earlier research (e.g., JOHNSON; ERTING, 1989). Of course the situation is different for those deaf



persons who already know the languages involved – signs used simultaneously with speech can then be used as a support for lip-reading, as a tool for communication. But for actual language learning this kind of activity does not work very well.

## Interaction and learning

The interactive, communicative setting in the classroom is of course very important for any child's learning, whether hearing or deaf. It is out of meeting language, understanding information presented in diverse linguistic forms and from using language oneself that development takes place, which is linguistic as well as cognitive. Increasing complexity of the language used is important for this development as well.

The older the child grows the more the needs grow for a language that works for more complex and advanced functions. These functions include using language for such things as arguing, for discussing abstract matters, for making hypotheses and for testing these hypotheses, for generalizing, for drawing conclusions and so on. This can hardly be done with a scattered, fragmented form of linguistic representation such as the one provided by use of speech + signs only.

Every child in class should have access to fully perceptible and intelligible language, whether produced by the teacher or by the classmates. Such access is a prerequisite for learning from participation in dialogue with others and for actively negotiating meaning with others at a more advanced level. 'Dialogue competence' implies so much more than asking short, simple questions and answering them just as short and simple. Participating in dialogues is central to learning in the classroom (SVARTHOLM et al., 1993, WENNERGREN, 2007).

For enhancing the opportunities for deaf children's participation in dialogue and group discussions with others, the teacher needs some basic insights about requirements for successful, visually based communication. To begin with, the teacher must know strategies for efficient, visually based teaching. Simple, practical rearrangements of chairs and tables might be necessary for securing that all children in class can see each other and thus also communicate with each other. Another external, physical factor is the lighting of the room – a signing mate who has the light from behind could be very difficult to perceive (LISSI et al., 2012).

But fostering effective participation in group discussions requires more than just physical adaptation of the classroom. Actual training is also required.

The rules for turn-taking in group communication are different among sign language users than among users of spoken languages, due to the needs for visual access to the signed messages. Thus, eye contact is needed and so are the markers for who wants to join the discussion and when this taking of the turn in the dialogue is accomplished and so on. Awareness of such requirements for smooth functioning group communication must be made clear and recalled over and over again by the teacher and among the students themselves (SVARTHOLM et al., 1993; LISSI et al., 2012).

## Language teaching

Using sign language fluently and establishing a supporting environment for its use in class could undoubtedly be characterized as the basis for adequate deaf education. However, this is not enough for fostering the students to become bilinguals, it is not even enough for a school or a program to call itself ‘bilingual’. For this, much more is needed.

In the bilingual school or program the students must get the opportunity to learn their second language from proper second language teaching. It was mentioned above that linguistic, contrastive work was central in the Swedish bilingual approach from the very beginning. Such work presupposes that the teacher not only has basic knowledge about the two languages and their structures and typical features, but that he also has linguistically based pedagogical and methodological training for accomplishing this kind of work in class. Of course teaching sign language, as with any other mother tongue/first language teaching in schools, must be central and the teacher must be adequately trained for carrying this out.

As it also has been pointed out above, the focus is on written language in teaching the deaf their second language, simply because deaf children cannot use their hearing efficiently for language learning. This means that learning the language cannot be differentiated from learning to read the language; the two processes coincide and are intertwined. Strategies for building up reading competence out of texts should be provided by the teacher and by the explanations and translations offered. Awareness of recurrent text structures and text schemes seems to be useful for the language learner for developing efficient ‘reading’, i.e., searching for meaning embedded in these structures in texts. Text structures, schemes and other tools for genre recognition can thus be regarded

as guidelines for the learner in this search for meaning (LISSI et al., 2012; SVARTHOLM, 2006).

Another aspect of language teaching in deaf education concerns teaching and learning a third language. As mentioned above, English is a ‘core’ school subject in Sweden, both in the regular school and in the special schools for the deaf. In Sweden just as in many other countries, English has a prominent position beside the official language(-s), not least within business and higher education. It also plays the role of a ‘Lingua Franca’, a language for communication across language barriers in international settings and for international contacts. Learning English is as important for the deaf as for hearing people.

‘English as a third language for the deaf’ implies that teaching can be based on already acquired skills in, e.g., Swedish and Swedish sign language and on knowledge about these languages (SVARTHOLM, 2008). This could in fact enrich the whole language learning situation for any student: The new perspective that studying a foreign language entails is undoubtedly valuable for further, in-depth understanding of any first and second language – that is, for deaf children, sign language and the spoken/written language of the surrounding community.

## Sign Language Users – Now and Tomorrow

The group of sign language users is undergoing a great change today. The majority of sign language users in Sweden are in fact hearing themselves – parents, siblings, relatives, teachers, assistants, etc., all those around a deaf child that learn signing (BERGMAN; NILSSON, 1999). There are also Codas (Children of Deaf Adults) and interpreters, and people that have learned sign language out of merely a genuine interest in the language. It is a reasonable guess that the ratio is about 8-10 hearing persons that know sign language to every signing deaf person in Sweden. Thus, the deaf themselves are indeed already a minority among signers.

In the next future, profoundly deaf sign language users will be in an even more obvious minority position, due to cochlear implants, CIs. Today, in Sweden, there are very few deaf children – in fact only a handful – in the preschool ages that do not have a technical hearing device of this kind. The vast majority of deaf children, a higher proportion than 90%, gets an implant and nowadays it is most often having that very early. Sweden has in fact the comparatively

highest ratio of implantations in relation to its population size (WASS, 2009; SOCIALSTYRELSEN, 2009).

In the Swedish legislation, it is stated that '[...] persons who are deaf or hard of hearing, and persons who, for other reasons, require sign language, are to be given the opportunity to learn, develop and use Swedish sign language.' (The Language Act, SFS 2009:600). The need for sign language and bilingualism in children with cochlear implants was especially emphasized in the proposal that preceded this law: 'These children should.../not be regarded as hearing. They need sign language for all life situations in which, despite CIs, their hearing cannot cope' (SOU 2008:26, transl.).

The Swedish national organization for hard of hearing people, HRF, which also is an active member of the International Federation of Hard of Hearing People, IFHOH, argues strongly for the need for sign language among hard of hearing children. There are many parents that recognize this need, but there are also many that keep to a 'wait-and-see' attitude.

The same holds true for parents to children with cochlear implants. Some find it important to provide their children with opportunities to learn sign language early in life and other parents prefer not to do it but wait.

So, we know very little about who the sign language users will be in the future. It is reasonable, though, to expect that many of its users will encounter sign language quite late in life and that they will have at least some hearing out of using either conventional hearing aids or from cochlear implants. Many of them will probably manage reasonably well with spoken language, but they can nevertheless be expected to have a need for sign language as a complement to speech.

## **Children with Cochlear Implants – some words about their need for bilingualism**

Sometimes one can face claims about sign language as something negative for children with cochlear implants and that bilingualism that includes sign language is not optimal for raising these children linguistically. Instead, signing skills are supposed to 'destroy' speech and interest for speech in the child. This view was prevalent also in Sweden among medical doctors and others during the first years of surgery on deaf children. However, to begin with a policy issued by the health and welfare authorities demanded that sign language communication should be established in the family before implantation (PREISLER,

2001). This requirement was gradually abandoned but all children with severe to profound hearing impairment are offered access to sign language in Sweden (IBERTSSON, 2009).

Actual research about the veracity of the claims about negative impact of sign language for children with cochlear implants is sparse, however (HYDE; PUNCH, 2011; MARSCHARK; HAUSER, 2012). From a systematic literature review in which more than 1,500 international scientific references were studied, a Norwegian research team found that there were in fact no studies at all reflecting ‘real’ bilingual communication among children with cochlear implants, i.e. a natural sign language was used as one language and spoken language as another (KIRKEHEI et al., 2011).

Only different versions of speech + signs used with the children were reported in those articles as complements to spoken language. The objective of the study, to identify eventual negative effects of communication mode with special focus on sign language, could thus not be fulfilled. The researchers called for further studies, including studies in which questions about the quality of life of children with cochlear implants could be raised together with questions about their social participation in groups and so on. They also emphasized the problems connected to generalizability: research reports relate mostly to very small groups of children.

In Sweden we do have a few studies of bilingual children with cochlear implants, by necessity conducted on very small groups or just with a few individuals. In one of these, language comprehension was tested in small children acquiring the two languages. The results were compared to children in the same age group but with traditional hearing aids (UHLÉN et al., 2005). Just as often is the case with children with cochlear implants in which the results varied considerably within the group but on average they showed a clear capacity for developing the two languages in parallel, just as the hard of hearing children did.

There are also some earlier Swedish studies of, e.g., group interaction between preschool children with cochlear implants, hard of hearing children, and deaf children, respectively, showing the importance of a shared linguistic code for coping with group activities, such as plays (e.g., PREISLER, 2001; AHLSTRÖM, 2000). When it is noisy around – as is often the case in a group of preschool children – the child who cannot hear fully becomes an outsider when speech is used. Without full access to a shared language it is very difficult to follow and participate in a play that is going on, especially when it comes to more advanced types of play, such as role plays and plays in creating make-believe worlds. Sign language offers visual access and thus full communicative participation to these children.

Other Swedish studies have focused on phonological skills, reading skills, and cognitive abilities such as working memory in children with cochlear implants (e.g., IBERTSSON, 2009; WASS, 2009). There is a great number of studies of this kind, also internationally. Many of them have been conducted in laboratory settings and very few, if any, have asked the questions if and how the children participating in the studies function in natural communicative situations together with other children. However, recently one such Swedish study was published (HOLMSTRÖM, 2013).

Here, two individually integrated children with cochlear implants were observed in their respective classrooms. The learning situation was adapted in different ways to their needs: the size of the classes was small; a special resource assistant using signs was attending and mediating communicative content when necessary, and so on. In spite of such extra efforts, one of the conclusions made from the study was that the power relations within these classrooms were unequal (HOLMSTRÖM, 2013). The ‘integrated’ child was the loser.

Another conclusion was that it is not enough to just provide signing assistants as extra support to children with cochlear implants: the children need natural contacts with sign language for acquiring it properly. This will give them the basis for choosing what language works best in different situations, both at a young age and later in life (HOLMSTRÖM, 2013; HYDE; PUNCH, 2011). Such a free choice entails opportunities to communicate with other people and to function linguistically together with them, independent of their hearing status – opportunities that should be open to anyone.

## Conclusive remarks

For successful deaf education, today and tomorrow, I wish to emphasize the following three basic points, all of which emanate from previous experience from bilingual deaf education:

- (a) People around the deaf child – from the close, inner circle and out: family, preschool and school teachers, doctors, social workers, school authorities, politicians, especially those responsible for education and health care – must be made aware of the importance of a visually accessible language for the deaf child. They must also be aware of their shared responsibility for providing the child with such a language as a base for functioning among others and, further, for successful sec-

ond language acquisition. Access to sign language in normal, natural settings must also be assured for those children, so they can use their hearing even though not in full in all everyday situations, i.e., children with cochlear implants and hard of hearing children with or without conventional hearing aids.

- (b) Teachers of the deaf must not only be fluent signers in order to communicate freely within and outside the classroom. They must also get linguistic and methodological training so that they can teach sign language as a first language to deaf children and the language of the society as a second language, based on this. They also need to develop their awareness of visual communication in the classroom and the prerequisites for this. For an adequate response to the linguistic needs of children with some hearing, with or without technical hearing devices, there must also be teachers trained in teaching sign language as a second language to these children, and teachers trained in remedial teaching of sign language to late learners.
- (c) Providing the child with opportunities to interact naturally with others and to participate in meaningful, fluent communication – both with other individuals and in groups – must be central for any program or educational philosophy concerning deaf children and children with cochlear implants or other types of hearing aids. All these children need a variety of linguistic role models around that guarantee their access to visually accessible language in use, but in particular they need access to other children using such language. The very basis for their learning and for their further social, cognitive and emotional development is to be found in their interaction with each other. As a result, they can grow and become independent and successful human adults.

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