

## RESEARCH

# Changes in Educational Planning for Deaf and Hard of Hearing Children in Scandinavia over the Last Three Decades

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Approaches to deaf education in Scandinavia have been shaped and buffeted by controversies and debates about language, educational policy, and new technology. By way of thematic analysis of the content of national policy papers, this study provides a history and comparison of educational planning in Scandinavia over the last 30 years. The overall finding was that educational planning in Scandinavia has been similar over the years. In parallel, these countries adopted a bilingual-bicultural approach to deaf education 30 years ago and then, more recently, shifted towards an auditory-oral approach that makes less use of sign language. However, the study also found differences. While Denmark has increasingly focused efforts on auditory-oral education, Sweden has maintained an approach that seeks to protect minority languages and cultures, and Norway has developed an approach that mixes mainstreaming in local community schools and the protection of rights to a specialist curriculum in Norwegian Sign Language.

**Keywords:** Cochlear implants; Deaf education; Hearing loss; Sign language; Special education needs

## Introduction

Changes and shifts in deaf educational approaches over the last three decades have been driven by (a) research-based knowledge about language development and educational outcomes, (b) technological developments, and (c) policy priorities such as the protection of minority cultures and languages (Ohna 2018; Svartholm 2010; Swanwick et al. 2014). Different countries have emphasized different policies and approaches at different times. Deaf and hard of hearing (DHH) children<sup>1</sup> have therefore had different educational experiences according to the time and place of their education. Within the same time period, some children have learnt sign language, attended a deaf school, and been introduced to Deaf culture, while others have received a cochlear implant (CI), learnt to speak, attended a local community school, and socialized with only hearing peers (Dammeyer 2010).

Denmark, Norway, and Sweden, also known as Scandinavia, share history, languages, and cultural and societal similarities. Since the 1960s the Scandinavian countries have been known as strong welfare states, a form of government where the state plays a significant role in the protection and promotion of the social and economic well-being of its citizens. Thus, in all three countries, deaf education is regulated and fully funded by the state, and deaf schools and education are public and free. The aim of this study is to analyse the last three decades of educational planning for DHH students in the three Scandinavian counties in order to understand the processes of changes in national educational planning. Potentially this can provide information to support policy makers, parents, researchers, and practitioners in their planning of support for the future generations of DHH children.

### *The historical context for the education of DHH children in Scandinavia*

Common school movements—the attempt to make education available to all—took place in many countries in the first half of the 19th century. At this time, schools for DHH children were established in all three Scandinavian countries.

<sup>1</sup> The term ‘deaf’ has a somewhat different meaning in different countries but is most often used as an overall term covering ‘any level of hearing loss significant enough to have an impact on language development and learning’ (Swanwick et al. 2014: 292). The term deaf and hard of hearing (DHH) will be used in this study. Deaf with capital D is used for people who identify as culturally Deaf and actively engaged with the Deaf community.

For example, after unsuccessful experiments with a galvanic treatment of deafness,<sup>2</sup> medical doctor Peter Atke Castberg (1779–1823) visited schools for the deaf in Cologne, Vienna, and Paris. Returning to Copenhagen, Denmark, he argued for the establishment of a school using the manual method (sign language). The first school for DHH children in Denmark was established by Castberg in Copenhagen in 1807 'on regulation by the king' and was the first official special school in the country. Compulsory education for all DHH children was decided in 1817, a few years after the general compulsory education act in 1814 (Krarup-Pedersen & Elmer 1992).

In Norway the first school for DHH children was established in Trondheim in 1825. The founder of the school was a deaf man, Andreas Christian Møller (1796–1874), who had been a student at Castberg's school in Copenhagen. Similar to the school in Copenhagen, the 'manual method' (i.e., sign language) was used (Simonsen 2000). A few decades later, schools for DHH students were established in some of the other larger cities in Norway; however, these schools used oral (i.e., spoken language) approaches.

The history of deaf education in Sweden is in many ways like the ones in Denmark and Norway. Pär Aron Borg (1776–1839) was given permission to teach DHH children by use of the manual method in 1809 in Stockholm. Similar to Castberg and many others at that time, Pär Aron Borg was inspired by the work of Abbé Charles-Michel de l'Épée (1712–1789) in France, who was the founder of 'The Instructional Method of Signs' in deaf education and who became known as the 'Father of the Deaf'.<sup>3</sup>

In the following 200 years, several discussions and controversies have been ongoing, some rising from scientific findings, others from technological inventions and development, and yet others from changes in dominant political views and ideologies.

#### ***Language research and mode of instruction: Spoken language versus sign language***

One ongoing controversy in deaf education—probably back to the very start of deaf education—has been whether the manual method (teaching in and use of sign language) should be preferred over spoken language use and speech training or vice versa (Brill 1984). Linguistic and psycholinguistic research from the 1960s and 1970s showed that the signing used in various countries included unique linguistic structures reflecting their status as true languages (Stokoe 1960/2005). Other research followed showing that good and early sign language acquisition could be associated with positive social and cognitive outcomes for DHH children (Meadow 1968/2005). In the following decades, studies investigated DHH children's sign language development in natural environments and in interaction with DHH peers and DHH signing caregivers (Schick, Marschark & Spencer 2005). The increased recognition of sign languages and the promising developmental outcomes of supporting deaf children in use of sign language as a natural first language, together with years of discouraging results from trying to educate all deaf pupils by training spoken language skills, encouraged parents, deaf organizations, and professionals to argue for the use of sign language in the deaf schools (Svartholm 2010). Especially in the Scandinavian countries, sign language became the primary mode of communication and teaching from the late 1970s (see further below).

#### ***Disability activism and Deaf culture: De-institutionalization and mainstreaming versus protection of minority cultures and languages***

Inspired and informed by the social model of disability movement (Shakespeare 2006), racial minority movements, and the new research findings on sign language mentioned above, a Deaf cultural minority movement arose in the 1970s (Leigh 2009). Deaf people started arguing for political and societal recognition of Deaf culture as a unique culture and sign languages as unique languages (Ladd 2003), and against discrimination and marginalization by the hearing majority society. Deaf schools and Deaf clubs, sports, churches, and other organizations were recognized as important centres where Deaf culture, Deaf identity, and sign languages could flourish and be celebrated (Ladd 2003; Ohna 2001). Further, the United Nation's Universal Declaration of Human Rights, which were agreed among the member countries and became influential following World War II, were interpreted as supporting the Deaf culture movement in their general statements of protecting minority cultures and languages (World Federation of the Deaf 2016).

In the same period, and partly in contrast to the Deaf cultural movement, an increased focus on de-institutionalization and mainstreaming of children with disabilities (including DHH children) was taking place in Scandinavia and elsewhere. The policy emanated from the approach to education promulgated by the social model of disability—and the understanding that disability is created from barriers of participation in (mainstream) society—as well as the United Nations declaration of the equal rights for all citizens including those with a disability (United Nations

<sup>2</sup> Galvani (1737–1798) discovered bioelectricity (animal electricity) in 1780 and conducted galvanic experiments. One aim of these experiments was attempting to restore hearing (Söderfeldt 2013).

<sup>3</sup> Since ancient times, including the writings of Aristoteles and Galen, the general belief has been that deaf people were not capable of language (and learning) and therefore, as later was also the opinion of the Christian church, could not access the word of God (Eriksson 1993; Réé 1999). However, inspired by new ideas of the 18th century French, Épée came to believe that deaf children could learn language and thus could be included in the Christian church.

2018).<sup>4</sup> In line with the equal rights to education for all children, in 1993 the United Nations organisation UNESCO presented the Salamanca Declaration. This declaration explicitly stated: 'These documents are informed by the principle of inclusion, by recognition of the need to work towards "schools for all"' (UNESCO 1994: 2). Policies of inclusion have been implemented in many countries, including the Scandinavian countries, where it has been a relatively high priority for the governments (Vislie 2003).

### ***Technological development: Genocide versus cure***

Inventions and improvements of hearing aid technologies is a third source of change and controversies in the history of deaf education. Inventions and improvements of hearing aid technologies have over the last century created renewed belief in the opportunities of hearing and providing DHH children with good spoken language skills. This has also been the case following the introduction of pediatric cochlear implantation and neonatal hearing screening over the last two to three decades. Despite large variability in outcomes, research has clearly documented positive and promising outcomes of cochlear implant (CI) use among children with congenital deafness regarding spoken language skills (e.g., Niparko et al. 2010). As a consequence of the positive outcomes of CI use, professionals and parents started to argue for educating deaf children with CI by use of spoken language in favor of sign language (Lynas 2005). Though not scientifically supported (Humphries 2012), some did also recommend that sign language was not used following CI surgery. However, in the early phase, cochlear implantation for DHH children was not well accepted by the Deaf communities. It was seen as a threat to Deaf culture: 'The cochlear implant is experienced, within the deaf community, as yet another attempt at socio-cultural genocide...' (Sourdes en Colère, in Blume, 1999: 1264) and the controversies have at times been remarkable in many countries including the Scandinavian countries.

### ***The current study***

From the 1980s to the mid-2000s the so called bilingual (signed and spoken) and bicultural (Deaf and hearing) approach was celebrated in Denmark, Norway, and Sweden (Svartholm 2010; Swanwick et al. 2014). National programmes were established so that DHH children and their parents learned signed language and were introduced to Deaf culture from early in a child's life. Danish, Norwegian, and Swedish Sign Languages were recognized as the natural first language for deaf children, and the national spoken and written language was taught as a second language in deaf schools and units for DHH children in the three countries. But changes were looming. While national bilingual-bicultural curricula were introduced (Ohna 2018; Swanwick et al. 2014), the increasing success and popularity of pediatric cochlear implantation was followed by a re-emphasis on oral education on the part of professionals and parents. The bilingual-bicultural approach to deaf education accordingly fell out of favor.

This paper examines changes in deaf education in Scandinavia over the last 30 years through analysis of national policy papers. Two broad research questions guided the study: (a) what different policies and positions were decided and implemented over this time and (b) what kinds of arguments were proffered in support of the different policy directions? The analysis was informed by the three key oppositions in the history and literature of deaf educational approaches: spoken versus sign language, mainstream schooling versus specialist Deaf education, and Deaf culture and identity versus new hearing technologies.

## **Method**

### ***Materials***

A multiple-source strategy was used to identify national policy papers, including policy recommendations and briefs, on education for DHH children. First, searches using relevant terms in the Scandinavian languages were conducted on the online sites of relevant government departments (e.g., ministries of education and social affairs). This yielded national policy documents on education for DHH children for each country. Searches were also conducted on the online sites of relevant non-governmental organizations (NGOs) in each country. Second, relevant research literature was reviewed to identify national policy documentation that may have been missed in the initial searches. Searches of abstracts and titles within the research database PsychInfo and national library databases (e.g., the Royal Library of Denmark) were carried out to find relevant literature within a time period for publication from 1990 to 2020. Search terms in English (and translated for the relevant Scandinavian languages) were as follows: deaf\* OR hearing loss OR sign language; OR cochlear implant AND education OR teach\* OR school OR student. In this process, we followed the principle of corpus construction for qualitative research (see Bauer & Gaskell 2000).

Papers and documentation were reviewed to identify further national policy papers and guidelines. In addition, a snowball search was carried out by identifying relevant policy papers not found in the initial search from reference lists.

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<sup>4</sup> In the 19th century, special schools and boarding schools/institutions for the deaf, blind, 'mentally retarded', and other groups with disability increased. The aim was to provide specialized education, but also, as some scholars have underlined, to remove them from mainstream society because they were deviant or in some cases considered to be dangerous (for example females with rebellious or sexual behavior) (Rothman 1990).

Based on titles (and abstracts, if available), relevant papers were read and selected. The final selection of documents for analysis was agreed among the authors (see reference list). The aim was not to include every relevant policy paper but to construct a sample that covered perspectives on deaf education for each country over the time period.

### **Analysis**

The analytical aim was to identify the different policy positions of each country over the last 30 years and the themes of argument that supported these positions. The policy papers for each country were first organized chronologically. This gave the opportunity to map the history of different policy positions. A thematic qualitative analysis of content was then conducted (see Joffe & Yardley 2004), informed by the three key thematic oppositions on deaf education: spoken versus sign language, mainstream schooling versus specialist Deaf education, and Deaf culture and identity versus new hearing technologies. The analysis followed a procedure of, firstly, coding text for content relevant to the three key oppositions and, secondly, comparing and reviewing coded content to synthesize themes.

The authors carried out the analysis independently: the first author for Denmark and Sweden and the second author for Norway. Reliability checks were undertaken through critical review and discussion of each author's process of analysis. This was eased by an analytical approach that attended to manifest rather than latent content of data (Joffe & Yardley 2004). The presentation of findings is organised chronologically for each country. The analysis and overall comparison and synthesis of findings were informed throughout by existing literature on deaf educational approaches. All quotations in Danish, Norwegian, and Swedish were translated by the authors.

## **Results**

### **Denmark**

In the 1970s, the approach to language use in deaf schools was one of 'total communication'. This meant an emphasis on not only sign language but also the use of spoken language, assistive listening devices, and other means of supporting deaf children's language and schooling. Based on the increased research-based knowledge about sign language and the emerging Deaf culture, however, parents of deaf children pushed for changes (Vestberg 2003). In 1982 the first 'experimental-class' started using bilingual-bicultural teaching at the deaf school in Copenhagen (Krarup-Pederson & Elmer 1992). Though no research-based evaluation was published on the outcome of bilingual-bicultural teaching, the approach spread to the rest of the country. In 1991 the Danish Ministry of Education published a ministerial order and curriculum guide for sign language as an academic subject in which it was stated that 'sign language is for these [deaf] students similar to spoken Danish for hearing students. Therefore, deaf students need education in sign language, similar to how hearing students are educated in Danish' (Ministry of Education 1991: para. 1). With this ministerial order, Danish Sign Language was accepted by the government as the language of education for deaf children.

Until approximately 2005, the bilingual-bicultural approach was further implemented at the deaf schools. Hearing teachers were educated in sign language at the schools, and deaf teachers were educated and employed. However, pediatric cochlear implantation became the standard procedure during the 2000s (Percy-Smith et al. 2012). Supported by international research documenting positive outcomes of CI use with respect to hearing and spoken language development, some professionals argued against bilingual-bicultural education and for use of speech training and use of Auditory Verbal Therapy (AVT)<sup>5</sup> in particular (Percy-Smith et al. 2012). The argument was that a bilingual-bicultural education context and approach risked lowering the child's effective learning of spoken Danish (Percy-Smith et al. 2012). At times, the debate was intense both among professionals and in public: one group argued for deaf children's right to learn sign language and the other to the right for children and their parents to learn spoken language most efficiently. The Ministry of Health's Health Authority (2010) publication of Clinical Guidelines for Pediatric Cochlear Implant Treatment stated that 'The initial and continuing auditory treatment follow the principles from "Auditory Verbal Therapy"' and 'international scientific evidence shows, that by use of the best treatment, the child has potential to develop age-appropriate spoken language and can be integrated in mainstream institutions' (9). Currently, and for a period until 2020, the Danish government was funding a three-year AVT programme for all children in Denmark with hearing losses greater than 40 dB. The education took place in three AVT centres placed around the country (Decibel 2018).

Although cochlear implantation changed the practice of bilingual-bicultural teaching, and the number of children at the deaf schools was correspondingly reduced in the 2000s, legal support for sign language interpreting, Deaf culture, and bilingual-bicultural education has continued to some degree. The Ministry order of bilingual-bicultural education issued in 1991 was revised in 2005 and 2014, but its aims and scope remained the same: '§1 Education in sign language is offered all students with severe hearing losses who, with use of any technical aids including hearing aids and cochlear implants, are not able to or only with severe difficulties can communicate by use of speech'. However, the version from 2014 indicates that education in sign language is only for those who do not benefit from technical

<sup>5</sup> Audio Verbal Therapy (AVT) is a rehabilitation programme for parents of children with hearing loss with a focus on teaching children spoken language. It is thus not a special educational programme but aims to support children's participation in mainstream educational settings.

aids and cannot communicate by speech. At the same time, in 2014 Danish Sign Language was officially recognized as a minority language (The Danish Language Council 2014).

The Danish Ministry of Social Affairs published a 'Process description: Children and adolescents with early diagnosed hearing loss' in 2015 (Ministry of Social Affairs 2015). The first recommendation in that document was early language support 'in order to exploit the full potential for spoken language. This is the case no matter the kind of hearing aid technology used' (6). AVT, and only AVT, is further recommended 'as an effective method to ensure good spoken language, learning, and development' as well as inclusion in mainstream institutions and schools (Ministry of Social Affairs 2015: 7). However, it was also mentioned that 'the United Nations' convention on disability requires that the local municipalities recognize and support sign language as a minority language for those parents who decide that their deaf child should use sign language' and 'the small group of children who cannot benefit from hearing aid technologies' (7).

**Summing up.** In the 1980s, the education of the deaf changed to a bilingual-bicultural approach, celebrated at the deaf schools, which lasted until the 2000s when AVT as a method for teaching spoken language was implemented as the alternative. Both the changes in 1980s and 2000s were motivated by parents and professionals and followed by ministerial orders. Today almost all DHH children attend education at local community schools and AVT training is offered to parents and takes place at three national centres. Sign language (or visual communication in general) is not used.

### **Norway**

At the end of the 1960s, the Norwegian Association for the Deaf introduced evening courses in sign language, and some teachers at the schools for the deaf participated (Arnesen 1999). Along with this, professionals working with DHH people (Basilier 1973) raised questions on how to take account of parents' perspectives as well as the deaf child's communicative needs in school and family life.

Informed by a general agenda towards deinstitutionalisation and normalisation of the Norwegian society (cf. Introduction), the Education Act of 1975 (KUD 1975) and The National Curriculum (KUD 1974) introduced the idea of 'adapted education'. This means that every student had the right to receive instruction in accordance with his or her skills and preconditions. National White Papers following the new legislation of 1975 (St.Meld, nr. 98 [1976–77]; St.Meld, nr. 50 [1980–81]), primarily focused on the (re-)organisation of state schools for special education. The first White Paper focusing on sign language regarding education of deaf children was launched in 1985. The White paper stated that research on sign language 'document that the sign language must be put on par with other languages. When sign language is recognized as a natural language, it will have some consequences for the education of deaf children' (St.Meld, nr. 61 [1984/85]). Regarding educational placement, the White paper stated that DHH children should receive most of their education in regular (neighbourhood) schools, with necessary support from a national resource centre for DHH students. However, 'students using sign language as a primary language must be regarded as a special group. For most of these children it is best to receive the educational provision in segregated schools for students with hearing impairment' (St.Meld, nr. 61 [1984/85]).

In the 1990s, the government introduced legislation in relation to the education of DHH students, all of which focused on bilingual and bicultural education (Ohna 2018; Ohna et al. 2003). The overall agenda was the recognition of sign language as the natural language for deaf children and that sign language will provide the same possibilities for development as spoken language provides for children without hearing loss (KUF 1996b). The Education Act of 1998, Section 2–6 (KUF 1998) stated that students in primary and lower secondary education who have acquired sign language as their first language, or who on the basis of an expert assessment need such instruction, have 'the right to tuition in the use of and through the medium of sign language' (KUF 1998). Along with this, the curriculum for the ten-year compulsory school (KUF 1996a) introduced four subject curricula for deaf students: Norwegian Sign language as a first language, Norwegian for deaf pupils, English for deaf pupils, and Drama and Rhythmic for deaf pupils. Deaf students also got the right to 2.5 hours extra teaching every week over the course of the ten-year compulsory schooling. In order to support the new legislation, the government launched several initiatives. Some of these concerned parents' and teachers' sign language skills, including a national 1 semester programme at university level for teachers and a 40 week programme for parents.

While deaf education from its very beginning was regarded as special education, the changes introduced by the White Paper and the following legislation conceptualised instruction in sign language as regular education (Stette 1999). The reform was argued to reflect key principles of inclusive education in which it emphasized that achieving equity and excellence for all children should depend on the quality and characteristics of the curriculum rather than the learners' abilities and characteristics (Hart 1992). The new policies encouraged the local municipalities to facilitate education in local schools following the curricula for deaf children and not in segregated/special schools for deaf children. Consequently, one third of DHH using the four curricula for deaf students joined their local community school (Ohna et al. 2003).

The introduction of new medical technologies in the first years of the new millennium resulted in substantial changes in the education of the deaf over a relative short time. It was recognized that early identification of hearing loss (newborn hearing screening) and pediatric cochlear implantation provided many children born with severe and profound hearing loss better access to sound and better opportunities to develop speech. The rapid introduction of CI led to professional as well as public discussions regarding educational planning. Discussed themes were if childhood

hearing loss was an audiological or educational issue (Ohna et al. 2003), if and how sign language should or should not be used (Kermit 2010; Simonsen et al. 2009), parent counselling (Bruin 2017; Statped 2014), and the relevance of using the four subject curricula for deaf students in local community schools (Ohna 2018). In the first decade of the new millennium, educational planning for DHH children was once again a period of transition. On the one hand, 90–95% of DHH children received a CI during the first year of their life. On the other hand, the majority of DHH children born before 1998 used traditional hearing aids and received bilingual education based on the curricula for deaf pupils.

Today, the policy documents concerning the right to sign language in education and the curricula for deaf students are mainly unchanged. Though it has been discussed, and some guidelines for how to support children with CI have been released, no official government papers have been published (Kermit 2018). After a period of reduction of students, the former state schools for deaf children were closed. DHH pupils are now enrolled in local community schools, either on an individual basis or in units for DHH pupils organised in some of the larger city schools. Despite this, the number of students using the curricula for Norwegian Sign Language are not reduced to the same extent. A recently published Official Norwegian Report (NOU 2019) has analysed the present educational legislation and proposed more flexibility regarding Norwegian Sign Language education.

**Summing up.** Policies based on integration, and later inclusion, together with a focus on bilingual and bicultural education, created the basis for the legislation supporting bilingual-bicultural education in the 1990s. However, the introduction of CI led to a decreased application for the deaf schools and the closing of the schools. Today, the legislation from the 1990s and the right to sign language instruction is maintained and partly in use.

### **Sweden**

In the first half of the 20th century the dominant approach in Sweden was the 'oral method', (i.e., deaf children learning spoken language by 'speech training') (Svartholm 1993). However, research in bilingualism and sign languages prompted the recognition of sign language as the primary language of deaf children. Throughout the years of the 'oral period', the Swedish Association for the Deaf had consistently argued for the right to use sign language in education, and in the late 1960s this pressure became more intense (Svartholm 1993), leading to the introduction of 'total communication' in education and the publication of a Swedish Sign Language dictionary. However, a critique was raised against total communication, regarding 'Signed Swedish' as being communicative tools rather than use of language, an argument fueled by sign language research worldwide. In response, a bilingual and bicultural approach was promoted (Svartholm 1993; 2010).

At the same time, a general political agenda in Sweden from the 1970s was the government's policy concerning immigrants and other minority groups that aimed to ensure 'equality' and 'freedom of choice of cultural affiliation', which included the right to be bilingual, that is receiving teaching in Swedish and their first language (SFS 2009: 600). This agenda was transferred to DHH children (Svartholm 1993) and underpinned the bill that meant special schools for deaf children became officially bilingual in 1981 (SFS 1980: 64) and that Sweden was the first country in the world that recognized a sign language as a language in its own right (Svartholm 2010).

Bilingual education as a legal right drove legislative and curriculum changes in the 1980s (Svartholm 1993). A revision of the curriculum of the Swedish schools for the deaf towards bilingualism followed in 1983. Swedish and Swedish Sign Language were described as two separate subjects, and Swedish Sign Language had to be used as the mode of instruction (Skolöverstyrelsen 1983). The bilingualism in Sweden was often 'silent' in that it was the combination of Swedish Sign Language and written Swedish, and less often spoken Swedish.

As use of Swedish Sign Language was new to most teachers, other professionals, parents, and most of the DHH children in 1981, a comprehensive programme was launched within the deaf schools to teach teachers Swedish Sign Language and to develop materials for teaching. Educational programmes for becoming a teacher of the deaf were developed at Stockholm University where teaching took place in Swedish Sign Language (Holmström 2018; Svartholm 1993). In 1994, the curriculum from 1983 was updated and ambitions were now even higher (Svartholm 2010). The aim was now to ensure that all DHH pupils would be bilingual by the time they completed school. It was stated that schools should ensure that DHH students 'are bilingual i.e. can read sign language and Swedish as well as express thoughts and ideas in both sign language and writing' (LPO 94 1994: 11), and that the general education goals (attainment) is the same for DHH children as for children without hearing loss. Further development of bilingualism was underlined to be associated with human communication, identity, and personal development of the student (Skolverket 2001/2009). The bilingual and bicultural education took place at regional deaf schools. In accordance with the general approach of support and equality of minority languages and cultures in Sweden, sign language was also offered as a subject for hearing pupils in mainstream schools.

The introduction of infant hearing screening and pediatric cochlear implantation in Sweden over the last two decades has changed bilingual education from a 'sign-written' approach to a more pluralistic approach including spoken language (Swanwick et al. 2014). However, today the deaf schools still exist and practice bilingual-bicultural education and do offer sign language courses for pupils with hearing loss included in the mainstream schools (Specialpedagogiska Skolmyndigheten 2018). There is also a continued focus and general acceptance of supporting sign language as a minority language and deaf culture as a minority culture (SFS 2009: 600). However, parent organisations (Barnplantorna 2016) have criticized and worked against this, saying 'that the schools for children with hearing loss have no knowledge or will

to view these children [children with CIs] as anything else than deviants from the deaf community and culture' (para. 2). Instead, and together with the cochlear implant centre at the hospitals, they have worked for 'use of knowledge based on evidence' (Barnplantorna 2016: para. 3). AVT is used at the cochlear implant centres and other places as one of many methods for the family to create a 'paradigmatic change within rehabilitation of children with hearing loss' (Barnplantorna 2016: para. 8). However again, at a national educational planning level, the need for bilingualism among children with CIs is fully recognized, although attainment of this goal may require schools to adopt different means of instruction (Svartholm 2010). The Swedish Council on Technology Assessment in Health Care, for example, stated that

Cochlear implants enable children to develop speech communication skills, depending on individual abilities. Maintaining sign language in these children, and in their environment, is important since the outcome of implantation varies by individual and because implants cannot be used in some situations (SBU 2006: 1).

**Summing up.** National politics on equality and protection of minority cultures and languages together with linguistic research on sign languages supported establishment of national bilingual-bicultural education programmes from the early 1980s. The approach has lasted until today. Nevertheless, the introduction of cochlear implantation has made the bilingual approach more pluralistic, with a stronger focus on spoken Swedish (instead of only written Swedish) and critique and alternative approaches promoted by parent organisation together with the medical cochlear implant centres, which focus on the use of AVT.

## Discussion

If, and what, a student should learn about the revolution in Russia in 1917 is a decision at least partly based on the present ideologies and politics of a country. This is also true for the curriculum and methods used for teaching DHH students. However, more fundamental questions about where (deaf school or mainstream school), in which language (sign language or spoken language), and what culture education should occur are also topics of ongoing discussion. The aim of this study was to compare educational planning for DHH children in the Scandinavian countries over the last 30 years in order to explore similarities and differences, with a focus on language mode, de-institutionalization and mainstreaming, and new technologies.

The overall findings were that the last three decades of education planning for DHH children in Denmark, Norway, and Sweden share many similarities. The same changes in educational planning took place, first towards a bilingual-bicultural approach and later towards no/less use of sign language and a return to rehabilitation of hearing and speech. However, differences were also found. The first is how AVT had become the standard method of rehabilitation in Denmark but not in Norway and Sweden and inversely how sign language is still recommended and used in Norway and Sweden, but not Denmark. A second difference is that in Norway, in contrast to Denmark and Sweden, there has been a focus on mainstreaming in local community schools from the beginning of the bilingual-bicultural period. In Denmark and Sweden, the bilingual-bicultural approach was to a high degree associated with deaf schools and celebrated for this. One explanation for the difference might be a decentralization movement that has generally been stronger in Norway than in Denmark and Sweden during this period. A third difference was the strong approach in Sweden to protecting minority languages and cultures, which was less of a focus in Denmark during this period.

The changes in deaf education over the last three decades must be understood in the light of a broader historical context. In Scandinavia, as well as in other countries, national planning of special educational needs is both a top-down process following current politics and ideologies, such as protection of minority languages and cultures and the politics on promoting inclusive practices, and bottom-up processes informed by new research findings and attitudes spoken out by parents and other NGOs. Together, this creates a situation where different interests need to be protected while attending to calls for change responding to new technologies and research findings. Because of the difficulties of balancing the dilemmas, careful national educational planning is important in order to ensure rights and the best opportunities for every child.

## Conclusion

A DHH child is in need of educational support planned at a macro- (government), meso (municipality/school), and micro- (classroom) level. As we have shown in this study, educational planning for DHH children is informed by policies, technological development, and research-based knowledge about language development and educational development. These three topics have contributed to the similar history of deaf education in the three Scandinavian countries, but also to significant differences.

Sign language and Deaf culture have made DHH children a unique group in special education. However, the other topics discussed apply universally to education in general. New technologies, preferences for some rehabilitation methods above others, and the overall aim of inclusive education are important topics in educational planning for all children now and in the decades to come.

Finally, it should be noted that the themes and topics discussed in this paper might not cover all relevant issues for deaf education. More research from different countries and using different theoretical and methodological approaches is required to bring light to the complexity of educational planning for DHH children.

## Competing Interests

The authors have no competing interests to declare.

## Author Contribution

J.D. devised the project, the main conceptual ideas and wrote the first draft of the manuscript. S.E.O. wrote part of the first draft and edited the manuscript. J.D and S.E.O. conceptualised the methodology and analysed data.

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