University of Siegen

Communication Challenges in Inclusive Education Faced by Deaf and Non-deaf People

National Report – Germany

Authors:

Omar Gamal

Hubert Roth

March, 2021

Abstract

Deaf students experience difficulties in communication with non-deaf and deaf from other nationalities. The INSIGN project establishes an innovative infrastructure to raise awareness and promote the use of International Sign as a common lingua franca between deaf and non-deaf users. This innovative infrastructure will tear down barriers to communication with deaf students and opens the doors of internationalization, education, and globalization to young deaf students. In this report we shed light on the structure and learning of German Sign Language. We further our discussion by studying the structure and learning possibilities of International Sign. This study is supported by an online survey at the University of Siegen and guided interviews with national stakeholders to get in-depth insights into the common difficulties faced by deaf people and those living/studying/working with them. This study showed the importance and opportunity of having a common sign language (International Sign) which tears down barriers to communication. Further, the hearing community showed high interest to learn about International Sign as well as support the inclusion of deaf people in education.

Inhaltsverzeichnis

List of Figures

List of Abbreviations

UN	United Nations
DGS	German Sign Language (Deutsche Gebärdensprache)
IS	International Sign
StBA	Statistisches Bundesamt
BSL	British Sign Language
ASL	American Sign Language
SL	Sign Language
CI	Cochlear Implants
BGG	Behindertengleichstel-lungsgesetz

1. Introduction

Germany or officially the Federal Republic of Germany is situated in the Center of Europe with an area of 357582 square kilometers. In 2019, the population was estimated to be over 82 million [1]. According to Anne Sliwka [2], German society is currently changing from being culturally homogenous to a pluralistic one which is shaped mainly by immigration. This all started after the economic miracle in 1960. During this period many workers from Italy, Spain, Greece, and Turkey came to Germany. These workers remained in Germany and brought their families as well which changed the demography of the German society. Thus, influencing and changing the education system to be more inclusive. The education system has changed also after the war to be more inclusive for disabled students after being persecuted by the Nazi regime. Special schools for students with disabilities were built based on an assumption that it will benefit them compared to mainstream schools. This changed completely after the signing of the United Nations Convention for the rights of the disabled in 2009. The education system now has integrated schools along with special schools. The parents can choose whether they include their children in one of both school types. Throughout the years the Education system in Germany has taken important steps towards diversity in Education. Yet more changes in the structure of the education system and organization of learning are needed.

In this report, we will discuss the inclusion of deaf people in education in an international setting. We will focus mainly on the way of communication and the challenges they face in everyday life. We will discuss the structure and the learning of German Sign language followed by a discussion of the international sign system which represents an opportunity for overcoming the communication barriers between deaf and non-deaf as well as deaf from other nationalities. This discussion is supported by an online survey at the University of Siegen and guided interviews with national stakeholders to get in-depth insights into the common difficulties faced by deaf people and those living/studying/working with them. The national stakeholders involve deaf and non-deaf experts in sign language, e.g. interpreters, associations of deaf and hearing impaired, special needs schools, etc.

1.1 Statistics

According to the estimation of the German Deaf Association (Deutscher Gehörlosen-Bund e.V.), about 80,000 deaf people are living in the Federal Republic of Germany. Exact statistical surveys,

however, are not available because of the large number of unreported cases and the different definitions of deafness which result also in different statistical information [3].

According to a study by the Federal Statistical Office of Germany (Statistisches Bundesamt- StBA) published in 2019 [1], the number of general education special needs schools is 2865 and the number of part-time and full-time teachers is 68130 among them 77% female teachers. The number of vocational schools is 10550 and the number of part-time and full-time teachers is 135179.

The number of students with special needs in general and vocational education schools reached 474463 in the year 2017/18. Among them, 306431 went to special need schools and the rest went to general schools. Among the 306431 students who went to special need schools around 4% are deaf. On the other hand, around 5% of the students who joined general schools are deaf. In 2017, the number of students who completed the special needs schools is 52685 among them 37.6% are females [1].

1.2   Support System

After the second world war, the clubs and state associations have been re-established by the deaf in West Germany. The deaf movement was able to raise again and continue its work. This was especially true for the "Reichsverband der Gehörlosen Deutschlands" (Regede), which is known currently as the German Deaf Association ''Deutscher Gehörlosen-Bund e.V.''. It is divided into 16 regional associations and 10 national professional associations. The national professional associations include associations of Sign Language Lecturers and interpreter, Evangelical deaf pastoral care, Deaf Sports Association, Deaf theatre, etc. In [3], a list of the regional association and the professional associations are presented. Nationwide there exist numerous deaf associations and clubs, which might even relate to a specific degree of hearing loss.

In education, there exist special and integration schools. The parents can freely choose to register their children's in one of these schools. In the case of regular schools, parents can apply for integration assistant for their children. The Federal Parents Association of Deaf Children e.V. '' Bundeselternverband gehoerloser Kinder e.V.'' [4] and Department of Rehabilitation Sciences at the Humboldt University of Berlin [5] provide a list of schools in all states.

Deaf people receive financial support, which is independent of income. The financial support is related to the extra work that deaf people do compared to hearing people. It is however not available in all states.

In Transportation, the Mobility Service Center ''Mobilitätsservice-Zentrale (MSZ)'' of German railway company ''Deutsche Bahn'' is the one responsible for assisting people with disabilities even if the journey includes other railway companies. According to the German Deaf Association, as of 1st of February 2019, the company provides assistance only for the journey made by company trains. Thus the user must organize the rest of the journey with the MSZ in the other railway companies [3].

In health, the costs of the sign language interpreters are now covered by the health insurance as part of outpatient treatment. There is now a similar claim for inpatient treatment [3].

In media, very few television programs include an interpreter/subtitles. Any films funded by ''Deutschen Filmförderungsanstalt (FFA)'' or ''Deutschen Filmförderfonds (DFFF)'' have to be barrier-free. Further, Cinemas in Germany receive funding aids to ensure that they are barrier-free [3].

2. German Sign Language

According to the German Deaf Association (Deutscher Gehörlosen-Bund e.V.), about 80,000 deaf people are living in the Federal Republic of Germany [3]. Exact statistical surveys, however, are not available because of the large number of unreported cases and the different definitions of deafness which result also in different statistical information.

The German sign language (Deutsche Gebärdensprache- DGS) is the official sign language for people with hearing impairment since 2002 [3]. Although DGS shares common features with other sign languages the exact origin and genealogy of the language are not clear [6]. Some examples of the languages that DGS shares common features with are French, Polish, Swiss-German, and Austrian sign language. The DGS is a straightforward language, as its sentences are shorter and more concrete. The vocabulary of the DGS is not uniform across the country but has many dialects, comparable to the German spoken language. Therefore, there may be vocabulary in some regions that are not used in others. Due to the relatively new recognition of the DGS in German law, the process to a standard sign language, among all the federal states, still needs some time.

The manually coded language (Lautspra-chbegleitende Gebärden, LBG) is another variant of the DGS language, which follows the one-to-one grammar of the German language. The LBG is a popular choice for later deafened persons, as the German language is the learned native language and following its grammar is an easy approach for communication [3].

The professional profile of sign langue instructors has been drafted by the Bundesverband der Dozenten für Gebärdensprache e.V. (BDG) and the Deutscher Gehörlosenbund e.V. (DGB) [7]. In 2004, the regional associations of the sign language lecturers (den Landesverbänden der Gebärdensprachdozenten) signed officially the professional profile. To become a certified sign language instructor, the sign language instructors must pass the state exam. The professional code of conduct for sign language lecturers includes:

- Professional and cultural competence
- Didactic-methodical competence
- Continuing education and training
- Acceptance and fulfillment of orders
- Behavior towards learners
- Collegiality
- Integrity

- Professionalism

2.1 Characteristics

2.1.1 Components of German Sign Language

An important component of German sign language is the hands which can take 30 different hand shapes. For forming a sign, some of the body parts participate in the articulation process, which are divided into three communication components: **manual**, **nonmanual** and **oral speech** components [8].

Manual Language Components

In sign language, people mainly talk with their hands. Here, it is understood all hand and arm movements, which represent words and sentences that follow each other at a similar speed as in spoken language. To describe the form of the activated hand, the following characteristics must be considered: the indication of the fingers, the position of the thumb and the degree of curvature as well as the position of the fingers to each other. Thus, taking into account the features, words or signs can be distinguished from each other with the help of the handshapes [8].

In addition, another rule, the so-called rule of finger activation, is of great importance. Here, the shape of the hand can be changed within a single gesture. This means that the fingers at the beginning of the gesture have a different position to each other or a different curvature than those at the end of the gesture [8].

Furthermore, the hand position is an important aspect for distinguishing between signs. For example, if two signs are expressed with the same handshape, the hand position, in which the direction of the palm and fingers point to, can be used to distinguish them. Likewise, the place of hand execution can change the description of a gesture. That is, two gestures with identical handshape can be distinguished from each other if the hand is executed in the gesture space from two different places on the body or in front of the body. The direction in which the activated hands move and their arrangement in relation to each other are also factors that influence the meanings of the executed gestures [8].

Nonmanual Language Components

In addition to the use of the hands, facial expression (mimic), movement of the head and eyes, and posture of the upper body play an important role in German sign language.

Oral Language Components

Another main feature of sign language is the so-called mouth sign. While signing with the hands, the corresponding word is also silently reproduced with the lips.

2.1.2 Structure of Words

In sign language, word forms and also lexical units are signed as words. A word form is a grammatically defined form. A lexical unit, also called a lexeme, is a meaningful linguistic unit. Here, lexemes are divided into content words (nouns, verbs and adjectives) and function words (articles or conjunctions). Content words represent the main part of the vocabulary analysis in German Sign Language and are formed by the execution of gestures, which are realized as linguistic signs with hands and arms [8].

It is important to mention that signs are iconically motivated, which means that they have a pictorial quality. This is recognized by gestural forms that represent a concrete image of an object or are formed by hand movement to pictorially represent a verb or an event [8].

2.1.3 Structure of the Sentences

In German, a simple sentence consists of a nominal phrase (a clause whose head is a noun or pronoun) and a verbal phrase (a clause whose head is a verb). In contrast, a simple sentence in German Sign Language can consist of only one verbal phrase. However, in some sentences, a subject must be used. Furthermore, German uses a clause, which is called a copula. Copula has the grammatical function of connecting the subject and predicate, like the auxiliary verb "sein" (to be in English). However, copula is not used in German sign language. In addition to simple sentences, complex sentences consisting of subordinate clauses can also be formed in DGS [8].

As in German, a distinction can be made between sentence types in DGS. These are the propositional sentence, interrogative sentence, exclamatory sentence, request sentence and wish sentence. In order to indicate the type of sentence, DGS mainly uses non-manual speech components such as facial expressions and head and body posture. For example, raising the eyebrows in questions corresponds to the question intonation in spoken German or the question mark in written German. A simple active sentence in DGS consists of three elements agent (active participle of the action), patiens (passive participle of the action), and verb, which in German are called subject, object, and verb. DGS has flexible word order for different types of sentences. This means that the

three elements of the sentence are not necessarily always in the same order (APV). Here, the order is changed if a part of the sentence should be particularly emphasized [8].

2.1.4 Structure of a Text

To link text parts and successive sentences and make them into a text, formal and content elements are used in a text. While the text cohesion created by formal elements is called text cohesion, the text cohesion created by content elements is called text coherence [8].

Text Cohesion

Formally, a text context can be established by repeating a certain word or referring to a certain word by pronouns, as well as by using words associated with a certain word. In this way, the theme of a text can be clearly presented. In this regard, sign space in DGS plays an important role in forming such textual associations. Thus, possessive pronouns, demonstrative pronouns, and verbs are performed as gestures toward a specific location in gesture space where a specific person was present in order to link the event to that person [8].

Text Coherence

In terms of content, a textual context can be established through direct reference to a specific person by constantly articulating new terms that contain a lot of information about the person concerned. In addition, classifiers (e.g. persons, objects) can be formed by means of defined handshapes. In principle, the corresponding sign can be used in the text before the classifier is used. However, classifiers can also be perceived depending on their position in the gesture space as well as the general context of the text [8].

Furthermore, a textual context can be expressed implicitly. This is one of the basic communication styles in both spoken and sign languages, in which the message is hidden or expressed indirectly. Thus, in this case, the text coherence can be derived from the consecutive or causal relations, that is, from successive information or causality [8].

Text coherence can also result from thematic progression. Thematic progression represents the thematic text structure created by the relationship between sentence themes or the development of sentence theme sequences. Theme and rheme are complementary building blocks of a sentence. While the topic represents the core of what is said and thought, the rheme is defined as the statement of a sentence that contains the actual messages and information that were not mentioned before [8].

2.1.5 SignWriting

Putting sign language into written form has already been a topic of discussion, in how far the use of sign language is necessary for everyday life and what goals are achieved by it. In this regard, pro and con arguments are presented on it [8].

SignWriting Systems

Many of the sign language systems in use today can be derived from Stokoe notation, or at least largely relate to it. Among them are Hamburger Notation System, Sign-Front, InterSys, D'Sign and SOSO. SignWriting, on the other hand, has its own structure and does not resemble any sign language system. Each of these scripts is used for specific purposes and in specific areas. Globally, Stokoe notation, SignWriting, and HamNoSyS are the most commonly used sign language systems today [8].

- **Stokoe Notation:** In the context of his dissertation on the structure of American Sign Language ASL (1960), William C. Stokoe developed a notation system that was equivalent to spoken language but also different from it. The purpose of developing this sign language system was to be able to clarify his analysis with examples from ASL and to make it available for scientific research. The notation system was later further developed by himself together with his colleagues in general for scientific use. The notation has 55 symbols and has the property of writing single gestures but not coherent texts without taking into account the nonmanual components.

- **Hamburg Notation System:** At the Institute for German Sign Language and Communication of the Deaf at the University of Hamburg, HamNoSyS was developed in 1980s by a group of hearing and deaf scientists and staff. The aim was to transcribe data of German sign language but also of other sign languages for scientific purposes by transcribing single sign as well as texts. Approximately 200 symbols are used for notation, which are distributed among the manual signing parameters such as hand shape, hand position, execution position, and movement. Since it is difficult to transcribe some head and body postures as well as parts of facial expressions into signwriting, the use of non-manual components in the Hamburg notation system is very limited. However, HamNoSyS is more accurate compared to other signwriting systems, so the writing can be read without knowledge of the particular transcribed sign language.

2.1.6   Variations of German Sign Language

In different areas of Germany, different variations of sign language established themselves among the deaf people respectively. In this context, some factors play a role and let us divide the variation of DGS into three types: **Regional**, **social** and **situational** variation [8].

2.1.6.1   Regional Variation

Analogous to the spoken languages, there are dialects in the sign languages, which can be geographical, i.e. regionally, distinguished from each other. In the emergence and spread of regional variation in DGS, different factors such as schools for the deaf, membership in certain religious groups, and historical-social factors play a role [8].

- **Schools for the deaf:** The majority of deaf children learn sign language in schools for the deaf. Since there are no special DGS classes offered at schools for the deaf, deaf children acquire sign language outside the classroom mainly through everyday interaction and communication with other deaf children from the same region in the schoolyard and in their free time. Most children have hearing parents, they, however, do not necessarily learn DGS from them. Therefore, schools for the deaf are considered the first place where deaf children acquire sign language.

- **Belonging to certain spoken language community within a country:** different dialects can be created by national state borders that exist in a monolingual area. As an example, the German-speaking area, where at least three independent sign languages are used. These are German Sign Language, Austrian Sign Language and Swiss-German Sign Language.

- **Historical-social factors:** Regional variation in DGS is also influenced by other factors that stem from a historical and social background, such as low mobility, lack of use scripting system for communication on the national level, inaccessibility of visual communication media, and lack of sign language broadcasts on television.

The variation due to geographic and spatial assignment show differences in the lexicon, phonology as well as the grammar of DGS. To date, no significant empirical research has been conducted regarding the lexicon or vocabulary of DGS dialects. However, it can be said that nationally there is often a great similarity of signs and words especially of figurative signs in DGS. However, one presumes that dialectal differences in signs for numbers, days of the week, months, colors as well as the conceptual field of the family can be found. In phonology, regional differences in DGS show up

as changes in the parameters of handshape and movement, which correspond to pronunciation and accent in dialects of a spoken language. In grammar, it is difficult to extract regional differences from DGS dialects. However, grammatical differences in tense and time marking can be found [8].

2.1.6.2   Social Variation

Dialects of DGS can be further varied depending on factors such as origin, religion, social class, gender, and age at the social level [8].

- **Origin:** Immigrant Deaf people with different ancestry are a part of the Deaf community within a country. The strong attachment of the immigrant deaf to their culture of origin causes a variety of signs, using a form of articulation that can also be observed in hearing immigrants of the same ancestry.

- **Religion:** Religious variety and belonging to a certain religious group also influence the expression of deaf people.

- **Social Class:** In Germany, deaf children of deaf parents are called "natural linguistic elite", because they have learned sign language from their parents as a natural language, which has a self-confident diverse sign language style. Furthermore, due to the possible access of deaf people to education and academic studies, an educational elite has developed among deaf people in recent years, but its linguistic characteristic is not yet known.

- **Gender:** Although little research has been conducted to date regarding gender variation in DGS, a statement about it can be made based on observations from the field. While deaf women often use facial expressions such as nodding, shaking their heads, interesting facial expressions, etc., and rarely use classifiers, deaf men often articulate more expressively and physically.

- **Generational Variation:** It can be caused in DGS by several factors. For example, Deaf people who were educated before 1970 hardly use the finger alphabet, contrary to the younger generations. Signs such as HANDY, SMS, EMAIL and INTERNET are easily signed in a special way by younger deaf people in contrast to older deaf people. A clear difference between older and younger deaf people is noticeable in the manner of articulation. Older deaf people articulate the nonmanual speech device mouthing more clearly than the younger generations. Furthermore, it can be observed that older deaf people use a smaller signing

space. In contrast, younger generations use the entire usable space to communicate their message.

2.1.6.3   Situational Variation

Situational variation also called register variation, is a variation in the language itself related to linguistic features. This type of variety arises depending on the communication situation, communication relationship and the topic of conversation. Here we speak about formal and informal communication situations. In this case, signs differ in parameters such as place of execution, hand shape, as well as finger position. The more parameters are combined for the execution of a sign, the more informal a gesture is. For example, a two-handed gesture becomes a one-handed sign. In addition, some signs are even not performed and instead are simply replaced by a mouth image. In formal situations, certain criteria can be observed. A large sign space is used by conversational partners so that a location in the usable space can be clearly seen, whereby signs are articulated slowly and clearly without using the mouth image. Last but not least, grammatical rules are followed similar to spoken language formal conversational situations [8].

2.2   Policies and Legal Status

In Germany, there are 16 federal states, each with elected parliament and government. All states have an independent decision-making process which includes all legal actions concerning educational matters as well as recognition of Sign Language. Thus the decisions are made partly at the state level and partly at the federal level [2].

The German Deaf Association has been fighting for German Sign Language Recognition since 1989. At that time the education was completely oral with minor use of signed German. The main demands were the possibility to study German Sign Language at the universities, inclusion of German Sign Language in schools, training of sign language interpreters, clear regulations regarding the payment of German Sign Language interpreters, etc. The German Deaf Association has been strongly supported by German universities since the beginning. For example, the universities started to study German Sign Language, e.g. the Institute for German Sign Language and Communication of the Deaf, University of Hamburg, etc. In early 1990, there has been a wide range of political acts. For example, the demonstration was organized during the festival of deaf culture in Hamburg. To date, the German Deaf Association was able to achieve many things nationwide. For example, in 1994, the 16 ministers of labor and all ministers of social affairs took the decision of recognizing

German Sign Language. The first discussion, however, at the German parliament on the recognition of German Sign Language was in 1998 [2].

The Federal Law on Equal Opportunities for Disabled Persons (Behindertengleichstel-lungsgesetz - BGG) guarantees the equal participation of people with disabilities in society and enable them to lead a self-determined life. At the heart of the law, German Sign Language is recognized as a language on its own and the accessibility of deaf persons to all areas of life is guaranteed. Since the BGG was put into force in 2002, there has been a lot of effort to ease the accessibility of deaf persons to all areas of life, especially in education [2].

2.3   Learning

The German education is a decentralized system owing to the independent decision-making process of the 16 federal states. The decentralization affects the school system as well as the followed methods. The mainstream schooling system is divided into three sections these are the primary level (grades 1-4), the lower secondary level (grades 5-10), and the upper secondary level (from grade 11). The students are assigned to different educational pathways from secondary school onwards. These are (Hauptschule, Realschule, Gymnasium, Gesamtschule). Further, there are also special school's system for children with disabilities, e.g. Mental Development "Geistige Entwicklung", learning "Lernen", language "Sprache", emotional and social development "Emotionale und soziale Entwicklung", vision "Sehen" and hearing "Hören", etc. These schools are also under the respective Ministry of Education and Cultural Affairs of a federal state as well [9].

For children with disabilities, education is compulsory and usually starts from age of 6. Today schools are looking for ways to combine oral-aural and bilingual education under one roof. To promote bilingual language teaching, two school experiments were carried out in the special schools of Hamburg and Berlin in primary and lower secondary schools. In this trial, both sign language and spoken language were used in the education process to develop meta-linguistic awareness. Further, teams of deaf and hearing teachers were employed. The deaf teacher teaches DGS and the hearing teachers teach German with German and supported with sign language. This experiment allowed students to learn both worlds' cultures, i.e. the culture of the deaf and hearing. Further, their access to German Sign language made the acquisition of German easier. In 2009, Germany signed the United Nations Convention on the rights of persons with disabilities which assures the right to have sign language in education and attend mainstream schools. The bilingual education, however, is not yet implemented in all German states. As different questions have not yet answered, e.g. Are hearing students willing to learn sign language so that real social integration becomes possible? Can

society afford sign language interpreters and sign language teachers in a mainstream school?, etc. [9]. Section 1.1.8 discusses the models which are currently being implemented or tested in the education of deaf people in Germany. In the early stages of education, parents of hearing-impaired children have the free will to choose between educating their children in special needs schools or regular schools in which an interpreter is required. In the case of regular schools, parents can apply for integration assistant for their children.

2.3.1   The Way to Sign Language Teaching in Germany

Before there were DGS lectures, until the late 1980s, learners could participate in "Signing courses" in which they acquired speech-accompanying signs (LBG), that is, signs parallel to the corresponding spoken word. The grammar of the German spoken language remains the same in the case of speech-accompanying signs. Therefore, LBG is not an independent natural language like German Sign Language or German spoken language, but a combination of the two. With LBG one could communicate to some extent with deaf people, as long as the topic of conversation was daily topics. Thus, the LBG articulation method was limited and not sufficient to communicate with deaf people in all situations.

The late 1980s marked the beginning of DGS courses, which were offered alongside LBG courses. DGS classes were fully supported by the Federal Association of Sign Language Course Teachers (Bundesarbeitsgemeinschaft für Gebärdenkursleiter (BAG)). This has led to an increase in the number of DGS courses offered since 1990, which has also led to an increase in the number of deaf sign language instructors. The subject of German Sign Language has been introduced in some of the federal states; namely Berlin, Brandenburg, Hamburg, Bayern, and Sachsen-Anhalt. This was no longer teaching hearing people how to communicate with deaf people in their own language using accompanying signs. Instead, hearing people were taught sign language as a foreign language in its own right by articulating nonverbally and visually using the grammatical features in the form of manual speech components, facial expressions, location in usable space, verb modifications, etc. Accordingly, in the DGS class, the rule was that hearing people must communicate silently in class. To practically insist on silence, instructors have used teaching strategies such as having instructors walk around the classroom with a wastebasket to "throw" learners' voices into it, or imposing symbolic punishments for speaking without permission in class. In addition, sign language instructors must be able to teach hearing sign language learners not only how to speak silently, but also to engage them in a cultural and exchange of ideas with the deaf community. As a result, instead of

speaking, sign language learners must use their bodies for visual communication and silent articulation purposes to successfully acquire DGS.

The training of special education teachers with a special focus on hearing takes place at five universities in Germany. These are Berlin, Hamburg, Heidelberg, Cologne, and Munich. The universities offer Bachelor and master programs which are followed by a training period of two years at schools [9].

2.3.2 Pedagogical Approaches in Schools for the Deaf

As a systematic use for the process of upbringing and education of deaf children and adolescents, deaf education is introduced, which is based on two possible approaches. The first approach is by Abbé de l'Epée (1771) and calls for the use of sign language as a subject of instruction as well as bilingual instruction in sign and spoken language in schools for the deaf (manual approach). The aim of the sign and spoken language approach is to develop an independent way of life as well as own culture of deaf people by introducing sign language. In contrast, the second approach of Samuel Heinicke (1778) favors the use of hearing aids such as cochlear implants to enable deaf learners to learn spoken language (oral approach). The aim of the spoken language approach is to end deafness with the help of medical advances and technical development of hearing aids as well as the cochlear implant.

Since the educational system in Germany varies from state to state, different approaches to the educational process are used. The majority of German schools for the deaf, however, use spoken language signs. Here, a certain visualization aid is given for reading the spoken words at the same time. There are actually few schools for the deaf that adapt the idea of bilingual teaching and DGS teaching. For example, in the state of Bavaria and in Hamburg, the subject of German and the subject of German Sign Language are regular teaching subjects in schools for the deaf. However, as an approach to bilingual teaching, there is still no undisputed methodology in Germany. In principle, the Hamburg bilingualism model is used. The main idea of the model is that bilingual teaching is carried out by deaf teachers together with hearing teachers in sign, written and spoken language. Here the deaf teacher represents the German sign language and the hearing teacher represents the German spoken language with the background idea that DGS is the core of the teaching.

3.   International Sign

International Sign (IS) is often referred to as pidgin, koine, contact language, and lingua franca. Throughout history, there have been different versions of IS. For instance, Deaf interpreters who were brought from different places in the Ottoman empire to work in the court system as language brokers. At the end of the 18th century, deaf people from around Europe were able to communicate without any difficulties during the establishment of the Paris school for the deaf. The first attempt to standardize an international sign system was in 1951 which was discussed in the first World Deaf Congress.   After a few years, an understandable form of IS was used to facilitate communication between deaf representatives who has different language backgrounds. Another attempt to establish an international sign system for the deaf was made by the WDF committee in 1973. To accomplish that, they have chosen common, naturally spontaneous and easy signs which are used by deaf people in different dictionaries. Approximately 1500 signs have been collected and published in a photographic dictionary with the title ''Gestuno: International Sign language of the Deaf''. The word Gestuno refers to gesture and oneness. Although Gestuno as well as the dictionary fell out of use it influenced IS lexicon. This is related to the lack of iconicity thus it was criticized by deaf signers. The long perseverance however led to the use of IS interpretation in international Deaf conferences. The interpreters can effectively interpret using the IS sign system with the help of gestures and other resources [10]. Although IS is promoted as lingua franca for globalizing the deaf communities and used at international conferences there is a lack of International Sign literature.

To our knowledge, no literature discusses the international sign status and role in Germany. The IS sign system is often referred to in the literature as a system that facilitates communication between deaf people from different nationalities [11]. Other examples of research documents and deaf associations who refer to the same are the Research Services of the German Bundestag German [12], Deaf association [3], Hearing impaired center Aachen [13], Hochschule Fresenius [14], etc. IS interpreters can be found also nationwide [15] [16].

3.1   Characteristics

IS is considered to be a mixed language and thus it is often characterized as pidgin. However, it has different characteristics than natural sign languages, which possess a standardized lexicon and grammar. Thus it is difficult to refer to IS as language. Further, it is difficult to refer to it as a universal language since IS is hardly understood by Eastern signers. This is related to the different features between Eastern and Western Sign languages [10].

One should differentiate between IS used in formal events and the one used in informal meetings while traveling known as cross-signing. Cross-signing is very difficult and the research in this area has just started [10].

According to a study published in 1994 [17], the grammar rules of IS are more complex than a typical pidgin but the verb agreement and word order are much similar to natural sign languages. In another study [18], it was found that the narrative duration in natural sign languages is shorter than IS. Further, the narrative content and availability of an established IS sign cause variations in the lexical content. In case IS sign does not exist a mime, a sign from natural sign language, or classifiers is used. In [19] [20], the authors report that International sign shares a number of features with natural sign languages, e.g. negation, facial expressions for grammars, nonmanual adverbials, depiction, etc.). It inherits also some Interpretation features, e.g. low rate of production, large signing space, groups of different signs with a similar concept.

In the next subsections, we will discuss the characteristics of IS based on the study in [19].

3.1.1 Phonology

The study shows that 73% out of the 4372 analyzed sign tokens were basic handshapes. The remaining 27% were complex handshapes. Fingerspelling was rarely used 2%. Most of the fingerspelling instances are articulated with the one-handed finger alphabet. While fingerspelling the interpreters position their hands in the upper right corner of the signing space. In some cases, the interpreter uses the non-dominant hand to draw attention. In the case of two-handed alphabets, the sign is articulated lower and more centered in contrast to the one-handed alphabet. To grasp the audience's attention to the two-handed signs the interpreters look first to their hands.

The Phonetic constraints known as dominance and symmetry condition are found also in IS. Symmetry condition defines hand movement in two-handed signs with moving hands. In this case, the hands must have the same handshape and move parallelly or oppose each other. In the dominance condition, the weak hand configuration in two-handed signs with different handshapes must be one of the basic handshapes.

In IS, the number system is articulated with two hands. The palm orientation is mostly outward from the signer. To articulate numbers between 0 and 5 the dominant hand is used. In numbers between 6 and 10, the non-dominant hand is kept static showing number 5. The dominant hand displays the additional values. Higher numbers are articulated either by indicating the digits sepa-

rately in their written order or one-to-one correspondence. Generally, numbers do not have specific spatial numbers. Similar to natural sign languages, articulating numbers at different spatial locations can indicate for example timeline or range.

3.1.2 Lexicon

In a few cases, the IS signs are taken from the original GESTUNO dictionary. The signs forms however are replaced either by signs from western sign languages or signs that are common in many sign languages. It is said that the vocabulary stem from the local sign language where IS is used. In the study discussed herein, the authors made a comparison between the IS vocabulary and a variety of natural sign languages, e.g. DGS, BSL, ASL, Auslan, Thai SL, etc. The authors report that 60% of the signs were found in three unrelated language groups, 36% were taken from specific sign languages, and only 2% were identified as unique signs to IS. The IS signs here however do not have the same form as the ones originally introduced in GESTUNO. Iconicity and the use of metaphor appears also in IS. The degree of iconicity depends mainly on shared cultural experiences between the signer and addressee.

One of the common techniques in IS is the presentation of concepts in multiple forms which make the information accessible to the audience despite the noisy channel. Describing the IS as a noisy channel is related to the limited number of IS vocabulary, diverse audience, and low degree of conventionalization. Usage of multiple signs –recognized by audience members- in this context doesn't mean necessarily that a sign doesn't exist.

The authors report that most of the glossed interrogative signs are the sign (What) and the remaining, i.e. Who and Why are taken from ASL. A mouth movement resampling the spoken words is accompanied by the articulated sign. Mouth movements, however, are rarely used in IS. A 26% percent of all signs in this study were accompanied by mouth movements that resemble the words in English (Also known as written lingua franca among deaf people). In fingerspelling, the mouthed word represents the target word being spelled. Some examples of the mouthed words are nouns mostly related to countries, continents, cities, and signs taken from ASL and BSL. Mouthing is also used in IS as modifiers to the manual signs or phrases, e.g. verbs and some adverbs.

3.1.3 Morphosyntax

Although IS lacks a standard grammatical system some patterns are observed in this study. Nevertheless, a clear judgment cannot be made on whether the observed grammatical rules are part of IS structure or influenced by the native sign language. In IS, the pronoun system utilizes the signing

techniques in natural sign languages. In this study, pronouns appear in 14% of the cases. The pronoun system uses space to reference physically present or unavailable entities by directing signs toward a specific location. For example, in the case of the non-first-person pronoun, the extending index finger concept is used. The sign is articulated with the non-dominant hand while the dominant one produces other signs. The plural form of personal pronouns can have different forms in IS. The possessive pronouns are articulated with a B handshape while the palm pointing toward the referent. the reflexive pronoun SELF is taken from German-Swiss or American Sign languages.

The verb system uses also space to refer to entities. The subject and object of a transitive verb as well as verbs that describe motion/action can be articulated by motion from one location to another in the signing space. The following are some notes regarding the different types of verbs:

- Intransitive verbs are not mostly directed in space but sometimes the trajectory is identified through context or an added lexical item, e.g. noun or pronoun.

- **Transitive verbs indicating a trajectory and a landmark:** In IS, transitive verbs require the indication of two different entities, i.e. acting entity and entity being acted upon. The same rule can be applied to multiple entities.

- **Transitive verbs indicating the only landmark:** This type can be found widely in IS. Here the verb is not directed towards the trajectory but toward the receiving entity. In other words, the landmark is the only part spatially indicated.

- **Reciprocal use of verbs:** These types of verbs express simultaneous identical actions.

- **Verbs of path and motion:** These verbs are articulated by mimicking the actual motion or path on a smaller scale.

- **Depicting verbs/classifiers/verbs of motion and location:** In this case, the three-dimensional properties of the sign modality are utilized to represent objects, movements, and actions in space. A wide variety of depicting verbs can be found in this study. Audience who has a low amount of standardized and lexicalized vocabulary can understand complex relations and abstract matters with the help of depicting verbs.

3.1.3.1 Grammatical Facial Expressions

The most used facial expressions in the data were for

1. **Rhetorical questions:** The non-manual components used are raised eyebrows and slightly tilting the head backward.

2. **Topicalization:** The non-manual components include raised eyebrows and maintaining eye contact with the audience. A short pause is made before signing the next sentence.

3. **Relative clauses:** They are often used in IS as a parenthetical remark for the specification of an entity. The non-manual components include raised eyebrows and tightening of the cheeks.

4. **Yes/no and Wh-questions:** The non-manual components of yes/no questions are tilting the head sideways, raising eyebrows, and bending the upper body backward.

5. **Negation and Affirmatives:** The non-manual components are a handshake, a tight jaw, the slight backward movement of the head, and squinted eyes. Head nods and pursed lips are the non-manual components for affirmatives.

3.1.3.2 Unit Boundaries

One of the famous markers that appear in natural sign languages and IS is the resting position which means that the interpreter is waiting for further information. In this case, the interpreter lowers both arms and clasps the hands in front of the body. Another way to make pauses is to hold the last sign while tilting the head backward or making a single head nod. Grammatical face expressions and lexical items are used to mark boundaries between units.

The authors report that word order is also available in IS similar to natural sign languages. The analysis of the data shows that a simple SVO structure is used in IS. The subject can be omitted but can be inferred from the context.

3.1.4 Discourse Pragmatics

The lack of fully conventionalized grammar and differentiated lexicon in IS forces Interpreters to employ strategies that affect the larger discourse units. To overcome the problem of lack of specialized vocabulary to discuss a certain topic, interpreters use aspects of the semantic frame of the word to represent the concept in an iconic manner. Interpreters choose the different aspects of the semantic frame with the help of the lexical item context in the sentence or discourse, e.g. paraphrasing, expanding English lexical items into IS, etc.

Tokens (grounded mental spaces) are used in IS to structure discourse and show relationships between different entities. Similarly, surrogates also grounded mental spaces which blend information from an event space with the real space of the here and now. In contrast to tokens, surrogates can be virtually everywhere.

A buoy is used to represent a concept. In other words, it serves as conceptual landmarks to guide the discourse. A list of buoys is used to indicate/talk about a set of entities. The list buoys are articulated similar to numerals but the fingertips point sideways. It can be accomplished whether by mentioning an entity and then points towards one finger or vice versa. The list buoys can re-appear when needed. IS uses another type of buoys which is called Theme buoys. It is used to call the audience's attention to, particularly important information by using an extended upright finger. Another buoy that occurs in IS is Fragment buoys, which is used to represent a new concept or modifying the syntactic function of the sign. Pointer buoys are the most commonly used buoy in IS, which is used mainly to point to a concept.

3.1.5   Repetitions of Concepts, Rate of Sign Production, and Context Cues

To refocus the attention in IS, repetition of sentences at the end of the discourse is frequently used. The same concept can be used as well to recall previously introduced concepts.

The rate of sign production in IS is slower than in natural sign languages. The authors report that ASL 1.8 and 1.9 ASL signs are produced in one second. Conversely, 1.2 IS signs are articulated per second. The research study discussed herein points out that the slow rate might be because of the greater effort the interpreter makes to reproduce the message.

The success of IS is mainly based on the education and experience of the audience. In other words, the interpreters use cues to intuit the message based on the knowledge of the audience.

3.2   Policies and Legal Status

Despite all IS literature and various events where it is used the World Federation of the Deaf (WDF) and EUD confirm that IS will not be recognized as a language. According to [10], only a few contributions are found regarding the policies of IS usage. For instance, the EUD disclaimer and the WFD position paper were published in 2010. Although IS is used widely in WFD events and determined as the only way of communication the recognition of IS endanger the recognition of Natural Sign Languages. This is related to the absence of funds for NSL interpreter provision. Here IS is viewed as a helpful tool for inclusion .

To our knowledge, there is no information related to the policy and legal status of International Sign in Germany.

3.3   Learning

To our knowledge, there is no information available about learning IS in Germany.

4.   Communication Challenges Between Deaf and Non-deaf in Education

The main concern of the deaf community is the improvement of their educational situation. The deaf schools play here an important role in deaf people's lives since this the first place where deaf people have contact with each other. This has a significant impact on their cultural identity. As mentioned before in the late 18th century schools of the deaf in Germany were influenced by oralism, i.e. spoken language is the only language used in education. Thus, sign language was banned and deaf teachers were fired. The teaching method, also known as the German method was a formation of spoken sounds and lip-reading. This method had serious problems for both deaf and severely hearing-impaired students. For example, knowledge acquisition was very difficult and even had an impact on the psychological stability of deaf students [21].

Towards the end of the 20th century, the impact of hearing-directed deaf education and its counter impact was realized and led those working with deaf people to adopt a bimodal-bilingual language education. In this method, German Sign Language and German are used which ensures a healthy child's overall development and gives children the opportunity to communicate in every situation. The linguistic research and empowerment movement of the deaf community recently led to a partial successful implementation of a bimodal-bilingual education in DGS and German at some special and mainstream schools. The two school trials which were carried out at the special needs schools in Hamburg and Berlin shaped the path to bilingual education in Germany. The trials were made on the primary and lower secondary levels. In 2009, Germany signed the United Nations Conventions for the Rights of the Disabled which gives individuals with special needs the right to be fully integrated into mainstream schools and receive support to succeed [21].

Universities are among those areas for which the federal and state disability equality laws stipulate accessibility and thus removing communicative, organizational, didactic and structural barriers which have a strong impeding effect on studies. In 2018, the authors in [22] conducted a survey to identify the barriers that students with disabilities face in German universities. In this study, due to fear of rejection and stigmatization by teachers, fellow students, and administrative staff, it was found that the hearing/speech impairment group was the only group that had problems in social interaction in the first place. Further, there were complications in requesting/providing sign language interpreters or communication assistants. The author reports that 1.7% of students with hearing impairments confirmed these difficulties.

To get in-depth insights into the common difficulties faced by deaf people and those living/studying/working with them we conducted an online survey within the university of Siegen and guided interviews with the national stakeholders. The national stakeholders involve deaf and non-deaf experts in sign language, e.g. interpreters, associations of deaf and hearing impaired, special needs schools, etc. The survey is part of the Erasmus+ InSign project "Advancing inclusive education through International Sign" which aims to promote the access of deaf students to education, international mobility, and global citizenship by raising awareness to International Sign as a lingua franca to communicate among deaf and non-deaf in international settings.

4.1 Online Survey

The online survey is conducted using the EvaSys system at the University of Siegen, Germany. The system provides an online platform for conducting the survey as well as an automated analysis of the survey results. The target groups are employees and students of the University of Siegen. The questionnaire was made in both German and English languages to reach both national and international participants. Further, the questionnaire (13 questions) is divided into three sections, each target topic area. These are communication between Deaf and Non-Deaf, knowledge about Sign Language, and knowledge about International Sign system. The survey period is 39 days. The number of received respondents is 368 of which three have chosen not to participate in the survey. In the next subsections, we will discuss the results related to each questionnaire section.

4.1.1 Communication Between Deaf and Non-Deaf

In this section, five main questions were asked which targets the communication challenges between Deaf and Hearing people. The survey responses showed that out of 362 respondents 90.1% did not have contact with a deaf person before and 8.8% has contact with a deaf person. The remaining 1.1% are deaf, see figure 1. When the participants were asked if they think that deaf people in Germany can read fluently and understand written German 81.5% out of 356 respondents said yes and 18.5% said no.
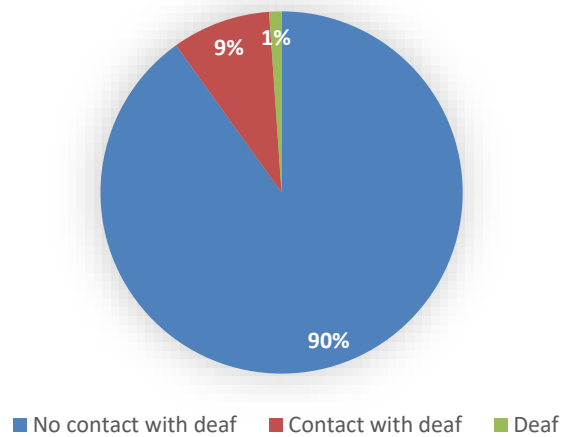
Figure 1: Survey responses to the question ''Do you have contact with deaf people?''.

The majority of the participants (97.8%) believe that deaf people communicate with each other mainly using sign language. Gestures come in second place with 72.1% followed by Lip-reading 60% and Writing 59.7%. In the case of communication between deaf and hearing people, the majority of the participants (93.2%) believe that they communicate using gestures followed by Lip-reading, Writing, and Hand signs with percentages of 86%, 83.6%, and 75.1% respectively. However, 4.7% of the respondents believe that they do not communicate. Figures 2 and 3 show the survey responses for the questions ''How do deaf people communicate with each other?'' and '' How do deaf people communicate with non-deaf?'' respectively.
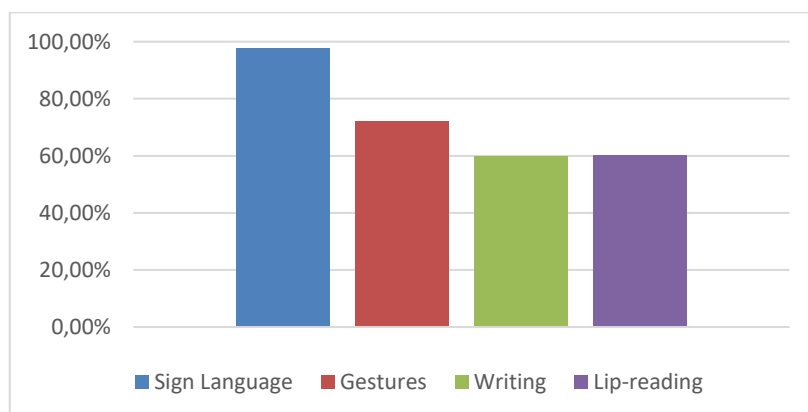

Figure 2: Survey responses to the question ''How do deaf people communicate with each other?''.
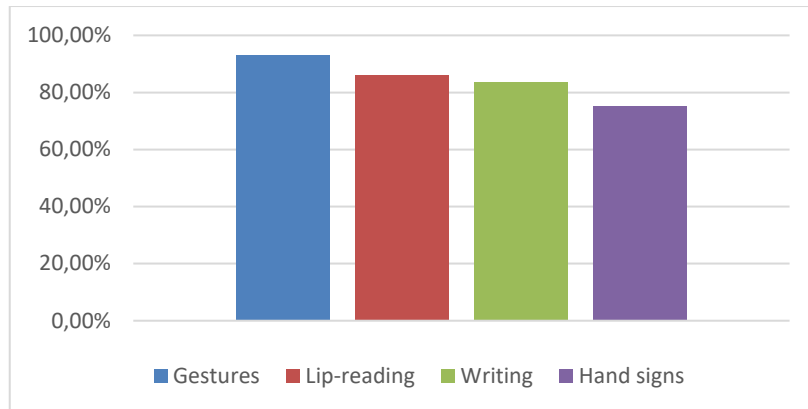
Figure 3: Survey responses to the question ''How do deaf people communicate with non-deaf?''.

When the participants were asked how they communicate with a deaf colleague or friend they reported different communication methods; namely Lip reading, sign language, writing, hand signs, gestures, facial expressions, painting, and using the help of an interpreter. The majority, however, have chosen to use gestures, writing, hand signs, and lip-reading since they don't know sign language. The participants are familiar with the communication norms in signing conversation, e.g. keeping eye contact, speaking slowly and clearly without shouting, give time for the conversation partner to read the lips and clear articulation of signs. Further, some of the participants reported the use of mobile phones or laptops for communication.

Another point that worth mention that two deaf participants who have Cochlear Implant reported that they can hear relatively normal with sign language. However, since they don't speak DGS fluently they make use of other methods such as writing and lip-reading.

4.1.2   Sign Language Knowledge

In this section, three main questions were asked which investigates the participant's knowledge about sign language and whether they are interested in learning a sign language. The survey responses showed that out of 365 respondents only 35.9% know sign language. Further, out of 360 respondents, 75% believe that sign language is different from country to country. When the participants were asked whether they would like to learn a sign language 79.4% out of 359 participants would like to learn a sign language.

4.1.3   knowledge about International Sign System

In this section, five main questions were asked which investigates the participant's knowledge about the International Sign system and if they are willing to learn the language. Further, the participants had the option to provide their opinion on how to support deaf students in their academic life.

The survey responses showed that out of 360 respondents only 7.2% know the International Sign system. The majority of the participants 79.7% out of 359 respondents are willing to learn the International Sign system. Further, 65.9% out of 352 participants are willing to participate in an elective course in International Sign System. In comparison to the German language, 60% out of 330 respondents believe that German Sign language has fewer words/gestures and 21.5% that it has more words/gestures. The remaining 18.5% believe that they have the same amount of words or gestures.

When the participants are provided the options to provide their opinion on how to support deaf students in their academic life we received valuable recommendations and opinions. We divided them into two sections. The first is regarding communication barriers between deaf and non-deaf students and the second is regarding providing access and support for deaf students in their academic life.

Overcome Communication Barriers between Deaf and Hearing Students

1. Promote sign language learning by providing courses, workshops, and tandem partners. The courses target hearing students, teaching staff, and employees.

2. University-wide day of action to raise awareness of the needs of the deaf students.

3. Build teams of volunteers who know sign language to assist deaf students.

4. Organize culture and social events for Deaf and Hearing students integration.

5. Provide workshops for training hearing students, teaching staff, and employees to learn more about deaf culture and communication strategies.

Providing Access and Support for Deaf Students in all Academic Aspects

1. Provide integrated classes for deaf and hearing students.

2. Provide simultaneous translation of lectures using subtitles, sign language interpreters, or speech-to-text translation application.

3. Provide course material in paper and digital formats for deaf students.

4. Usage of visual contents in lectures.

5. Provide course material online in translated video form to help deaf students in their study.

6. Provide interpreters in exams.

7. Provide free assistive devices and electronic aids for deaf students in classrooms.

8. Reducing classroom noise with acoustic panels.

9. Integrate deaf people in the structuring of the course.

10. Provide more scholarships and funds for deaf students to help them in their studies.

11. Build online forums to exchange information between deaf and hearing students.

12. Promote for study groups to exchange information between deaf and hearing students.

13. Offer orientation programs for deaf students at the beginning of their study to settle in and feel comfortable.

14. Offer courses taught by special education teachers for deaf students.

15. Provide assistance not only in the classroom but also in other areas such as the library, Cafeteria, etc.

16. Provide contact persons who know sign language in student's service center, General Students Committee, psychological consulting, etc.

17. Promoting Disability-Friendly Campuses

In addition, the majority of participants emphasized certain communication strategies in classrooms such as keeping eye contact, speaking slowly and clearly, careful pronunciation, etc. They also emphasized the important role of teachers in the inclusion of deaf students in the educational process.

4.2   Guided Interviews

In the guided interviews, the national stakeholders in Germany are interviewed. The questionnaire used in the interviews is translated to German language. Further, the questionnaire (14 questions) is divided into three sections, each target topic area. These are communication between the Deaf in international settings, knowledge about the International Sign system, and general questions about sign language, Cochlea implants, and digital content. Owing to the lockdown and safety measures in Germany we were able to make only three guided interviews. The first participant provides pastoral care for the deaf in the Evangelical Church of Westphalia. The second was a student in German Sign Language course at the Volkshochschule Siegen. Her aunt is deaf and her father is hard hearing. The third is the secretary of the Chair of Structural Concrete at the University of Siegen. Her sister is hard of hearing.

In summary, different ways of communication are often used in international settings. These however might lead to unclear picture or misunderstanding. International Sign presents an opportunity for easier communication in international settings. However, the lack of IS material and places where one can use frequently might cause the language to die out. The use of digital content by deaf people opens the door for innovative solutions that close the gap between different communities. The choice of using Cochlear Implants (CI) depends mainly on the personal preference and the culture of the community where the person is raised in. The parent situation (i.e. hearing or deaf parents) and age of person raises many questions whether it benefits the person or not.

In the next sub-points, we will discuss the results related to each questionnaire area.

1.   **How commonly is International Sign language used?**

The first and second participants knows International Sign but unfortunately, they do not have a number that can represent the IS users in Germany. All participants did not have information about how and where IS can be learned.

2.   **Does the interviewee use of International Sign language?**

All participants did not use it in practice.

3.   **How do you learn International Sign language?**

All participants did not have information about how and where IS can be learned.

4.   **How do you communicate with foreigner deaf if you don't know IS?**

The first participant tries to understand the conversation based on the context and her sign language knowledge. The second participant uses lip reading and gestures when communicating as well as a mobile APP called spreadsigns. The third participant did not experience such situation but her DGS teacher in Volkshochschule Siegen uses pantomime for communication. Pantomime works well especially in countries like Italy, France, and Spain since they use gestures and facial expressions more.

5.   How easy is it to understand International Sing language for someone skilled in national sign language?

As per the first two participants answers, knowing sign language helps to a certain extent. Whether knowing IS is better or not, the participants did not have a clear answer.

6.   Have you ever seen International Sign language in use?

The first participant is the only participant which saw IS in practice. She had contact with Eritrean refugees who know IS in Frankfurt.

7.   How difficult do you find International Sign language compared to your national sign language?

No clear answer.

8.   Do you think that it would be an advantage if only International Sign language would exist?

The second participant agrees that having one sign language for the deaf community would ease the communication. The first participant thinks it is a good idea but maybe as a second language since sign language is tightly connected to the culture.

9.   What are the advantages/disadvantages of the International Sign language?

The first and second participants think that having one language would make communication easier. Further, the first participant points out that it would help also in international events to have one interpreter for IS instead of having several interpreters.

10.   Does International Sign language have any legal standing in your country?

No information.

11.   Do you know of any variations in the International Sign language?

No information.

12.   Do deaf people use IT courseware and digital content frequently?

The first and second participants confirm that deaf people use digital content but misunderstanding/reading difficulty might occur. The second participant points out that some websites present information in plain language which would be easier in understanding.

13.   Are technological solutions (e.g. cochlear implants) well accepted?

The first participant pointed out that it is generally acceptable by the deaf community in Germany and here we have a big lobby of manufacturers. Here two points must be shed the light on. The first is when the parents are deaf and the child has hearing problems. In this case, the parents speak with their child mainly with sign language and thus the child doesn't have much room to make use of the CI. The second when both parents are healthy but the child has hearing problems. The parents in this case believe that their child will have a normal life after getting CI and can join mainstream schools. Unfortunately, there is no guarantee that the child will have a normal life.

The second participant pointed out that It is a personal choice to use CI or not and the costs are taken by the health insurance. Her aunt and father planted CI. From here experience getting CI at an early age is better than having it at an older age. When old people get CI they often have problems. For example, her aunt had a problem following the conversation.

The second participant opinion is that CI works best when children learn to use it at an early age or when deaf people grow up in the hearing community and culture. Regarding the acceptance, she points out that there are different opinions regarding CI. For example, the sister of her DGS teacher likes to use it. Conversely, her teacher could not stand it and did not want to leave her deaf community and culture.

14.   How difficult is it to learn International Sign language to a point where you are able to communicate?

No information.

5. Discussion and Conclusion

The German education system has changed from being homogeneous to diverse. Since the BGG was put into force in 2002, there has been a lot of effort to ease the accessibility of deaf persons to all areas of life, especially in education. With the signing of the United Nations Convention for the rights of disabled in 2009 Special schools for students with disabilities were built. Integrated schools were made also available. Not only that but also the students receive support from the government to ensure success in their studies. The number of general education special needs schools and vocational schools is 2865 and 10550 respectively. The number of students with special needs in general and vocational education schools reached 474463 in the year 2017/18 which is slightly lower than the year 2014/15. The education system in Germany has taken important steps towards diversity in Education. Yet more changes in the structure of the education system and organisation of learning is needed.

IS has different characteristics than natural sign languages, which possess a standardized lexicon and grammar. Thus it is difficult to refer to IS as language. Further, it is difficult to refer to it as a universal language since IS is hardly understood by Eastern signers. This is related to the different features between Eastern and Western Sign languages. IS shares common features with BSL, ASL, and Auslan sign languages.

To get in-depth insights into the common difficulties faced by deaf people and those living/studying/working with them, an online survey at the University of Siegen and guided interviews with national stakeholders were made. The high participation (368 participants) in the online survey within 39 days showed the high interest of the hearing and deaf community alike in the inclusion of deaf students. They showed also high interest (79.7% out of 359 respondents) in taking a course in International Sign, which represents a great opportunity to tear down barriers to communication with deaf students and opens the doors of internationalization, education and globalization to young deaf students. These findings are in accordance with the findings of the guided interviews. However, there is a great concern regarding the lack of IS material and places where one can use it frequently which might cause the language to die out.

The international Sign presents a great opportunity to overcome barriers to communication between deaf and non-deaf as well as deaf from other nationalities. A lot of research however is needed to determine more precisely the foundations of the International Sign system. The InSign

project is a step forward to further the research and promote the IS as a lingua franca, much similar to the role of the English language.

6. Literaturverzeichnis

[1] S. Bundesamt, „destatis," [Online]. Available: https://www.destatis.de/DE/Themen/Querschnitt/Jahrbuch/_inhalt.html. [Zugriff am 10 1 2021].

[2] S. Anne, From homogeneity to diversity in German education, 2010.

[3] „gehoerlosen-bund," [Online]. Available: https://www.gehoerlosen-bund.de/faq/deutsche%20geb%C3%A4rdensprache%20(dgs). [Zugriff am 15 01 2021].

[4] „gehoerlosekinder," 30 3 2021. [Online]. Available: https://gehoerlosekinder.de/links/.

[5] „reha.hu-berlin," [Online]. Available: https://www.reha.hu-berlin.de/de/lehrgebiete/gap/links/schulen-fur-horgeschadigte-in-deutschland.

[6] M. G. Herbert, „A New Classifier-Based Morpheme in German Sign Language (DGS)," in *University of Pennsylvania Working Papers in Linguistics*, 2016.

[7] „bdg-gebaerdensprache," [Online]. Available: https://www.bdg-gebaerdensprache.de/index.php/14-dozenten. [Zugriff am 1 2 2021].

[8] E. Hanna, Handbuch deutsche Gebärdensprache: sprachwissenschaftliche und anwendungsbezogene Perspektiven, Signum Verlag, 2012.

[9] Z.-S. Malgorzata, I. B. Katarzyna und T. Edyta, Selected issues of early-development support and education of children and youth with hearing impairment – comparative analysis on the example of five European countries, Warsaw: M. Grzegorzewska Academy of Special Education, 2016, pp. 120-142.

[10] R. Rosenstock und a. J. Napier, International sign: Linguistic, usage, and status issues, Gallaudet University Press, 2015.

[11] P. Jacobi, „Gebärdensprache," in *Barrierefreie Kommunikation im Gesundheitswesen*, Springer, 2020, pp. 109-122.

[12] „bundestag," [Online]. Available: https://www.bundestag.de/resource/blob/691398/f3c41fd2e5488cdaf734f4a9a6ff9b0d/WD-10-002-20-pdf-data.pdf. [Zugriff am 1 2 2021].

[13] „hgz-aachen," [Online]. Available: https://www.hgz-aachen.de/deutsche-gebaerdensprache/. [Zugriff am 1 2 2021].

[14] „hs-fresenius," [Online]. Available: https://www.hs-fresenius.de/blog/wissen/die-internationalen-unterschiede-der-gebaerdensprache-ein-interview-mit-hochschuldozentin-liona-paulus/. [Zugriff am 1 2 2021].

[15] „web.kestner," [Online]. Available: https://web.kestner.de/gebaerdensprachdolmetscherliste/. [Zugriff am 1 2 2021].

[16] „skarabee," [Online]. Available: https://skarabee.de/#dolmetschen. [Zugriff am 1 2 2021].

[17] R. Webb und S. Ted, „Negation in international sign," in *Perspectives on sign language structure: Papers from the 5th International Symposium on Sign Language Research*, 1994.

[18] L. Allsop, W. Bencie und M. Jon, „International Sign: The creation of an international deaf community and sign language," in *Sign language research*, 1994.

[19] R. Rosenstock, „An investigation of international sign: Analyzing structure and comprehension," 2004.

[20] R. L. McKee und N. Jemina, „Interpreting into international sign pidgin: An analysis," in *Journal of Sign Language and Linguistics*, 2002.

[21] S. Fries, Zur bilingualen und bikulturellen Lebenssituation gehörloser Frauen, Wiesbaden: Springer VS, 2020, p. 15.

[22] J. Poskowsky, S. Heißenberg, S. Zaussinger und J. Brenner, Beeinträchtigt studieren–best2. Datenerhebung zur Situation Studierender mit Behinderung und chronischer Krankheit 2016/17, 2018.

[23] C. F. Hockett und G. J. H., „The Problems of Universals in Language," in *Universals of Language*, 1966.

7. Appendix

If you have any material that could be added as appendix – to keep the report compact.