DIGITAL SKILLS

in Deaf and Hard-
of-Hearing Students
at Vocational Schools and
in Deaf and Hard-of-Hearing
Job Seekers in Selected European Countries:

A European Report

FREE TECH SIGNS

Funded by
the European Union

Digital Skills in Deaf and Hard-of-Hearing Students at Vocational Schools and in Deaf and Hard-of-Hearing Job Seekers in Selected European Countries: A European Report

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(with assistance of equalizent Wien, Çanakkale Onsekiz Mart University, Istituto Statale Sordi di Roma and the European Union of the Deaf).

16 December 2022

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1. Introduction

Free Technology Signs (FTS) is an EU-funded project with 5 partners from Germany, Austria, Turkey, Italy and Belgium (LIST). The primary aim of FTS is to develop accessible and bilingual digital resources in sign and written languages that enable deaf and hard-of-hearing job seekers to acquire transferable digital skills. These include skills considered essential in many modern jobs.

Transferable digital skills are required in most modern working environments and can be applied flexibly across various jobs and industries. Our study explores what transferable digital skills are and why they are required. It is acknowledged that many deaf and hard-of-hearing job seekers might demonstrate more advanced digital skills and competencies in comparison to their hearing peers. However, they might not always be job-relevant and desired by employers.

This report applies a working definition of digital skills, for which we have based our analysis on what we consider to be the ten most important areas of digital literacy. These ten competencies are grouped into three categories: I: Digital skills that relate to the use of Internet, such as Cloud and data storage, Online research, Professional communication tools, Professional online self-presentation, Social media, and the Use of online sign language interpretation; II: Digital skills that relate to the use of computers and computer programs, such as Basic graphics, PDF, Presentation programs, Spreadsheet programs, Video production, and Word processing programs; III: Digital skills that relate to privacy and browsing, such as Copyright, GDPR, Internet security, and Online accessibility.

The overall aim is to increase training opportunities for lifelong learning and personal growth for deaf and hard-of-hearing job seekers and to facilitate inclusion in the job markets.

90% of deaf and hard-of-hearing children are born to hearing parents, which means they lack an adult language model at home. 43% of deaf and hard-of-hearing children make contact with sign language for the first time at school (aged 5-6), and even then, only few schools offer bilingual instruction, leaving many deaf and hard-of-hearing children trying to learn to read and write in a spoken-only environment without any reference to sign language.

The transition from education to work is described as negative by many deaf and hard-of-hearing people for a variety of reasons. Firstly, many deaf and hard-of-hearing people are only among deaf and hard-of-hearing peers during their education, which can lead to insecurity in a work environment of hearing work colleagues. Secondly, the organization of work assistance when starting a new job proves to be bureaucratic and lengthy, so many deaf and hard-of-hearing people start their jobs without access to communication that meets their needs. Furthermore, the culture and mentality in companies employing mostly hearing people are mostly unpredictable. Deaf and hard-of-hearing people may also encounter ignorance, lack of understanding and insensitivity in the work environment. Another problem already arises in the case of job interviews. These are usually scheduled spontaneously when an application is

successful, so finding an interpreter for a deaf or hard-of-hearing potential employee can be a challenge and an additional burden during the interview.

Deaf and hard-of-hearing youth and job seekers face many challenges in closing gaps and successfully entering the workforce. Not only are there gaps in systems, such as the lack of statutory funding to support language access to and in the workplace for deaf and hard-of-hearing sign language users, such as with the help of interpreters. The lack of accessible and easy-to-follow documentation and procedures to manage payment for interpreters working through the state is also among these gaps present in many systems. There may also be a gap between organizational cultures. Deaf and hard-of-hearing workers can feel isolated in the workplace and it should be the responsibility of employers to create a workplace where hearing and deaf and hard-of-hearing workers can and will actively communicate with each other. Workplace orientation and possibly additional guidance regarding customs, organizational cultural norms, and expectations should always be provided to deaf and hard-of-hearing sign language users. Other gaps to bridge for deaf and hard-of-hearing sign language users in work life are evident in the areas of experience and feedback. For example, interviewing with a sign language interpreter is usually a new experience not only for deaf and hard-of-hearing job seekers, but also for employers. Mock job interviews could help to close this gap. Internships with mentoring opportunities and guidance can also be useful. Feedback that is timely, targeted, actionable, and accessible is often still lacking - especially to address misconceptions.

However, in our view, the biggest barrier for deaf and hard-of-hearing job seekers is a knowledge gap. Deaf and hard-of-hearing prospective job seekers should receive support while they are still in education, including information about the work environment and what to expect after they complete their education. Information about what types of work-related supports are available to them and what they need to do to apply for and receive them needs to be provided. As the results of our surveys will show, deaf and hard-of-hearing students and job seekers often lack knowledge, for example, about how to work with interpreters in the workplace, although this knowledge may be relevant to experts. To address this gap, opportunities to practice working in interactive settings through interpreting exercises could be useful.

Gaps in knowledge about deaf and hard-of-hearing employees and their employment can also be identified on the part of employers. Employers should not only be encouraged to hire deaf and hard-of-hearing job seekers, they also need information on how to make their workplace accessible to them in the best possible way. There is often a lack of support for this. Employers should act as a connecting link between deaf and hard-of-hearing employees and their hearing colleagues, which often fails due to lack of knowledge. It should also be emphasized at this point that sign language interpreters need to be constantly integrated into working life.

The knowledge gap on the part of employers is usually due to a lack of experience. Although diversity and inclusion policies are now in place, especially in large companies, many employers still consider deafness or hearing loss a disability. Employers who have already worked with deaf and hard-of-hearing employees in their company are often more open and

accommodating. It is not uncommon for deaf and hard of hearing employees to have a flatter career trajectory than their hearing colleagues. This is also due to a lack of training opportunities, meaning gaps in the system, or a lack of self-confidence on the part of deaf and hard-of-hearing workers themselves. While there are still reasons that discourage employers from hiring deaf and hard-of-hearing people. For instance, there are reports of additional costs for interpreters, the expense of redesigning the premises for accessibility, or additional time required, for example, by working with sign language interpreters, or working in a foreign language. On the other hand, employers also report positive effects after hiring deaf or hard-of-hearing employees. Deaf and hard-of-hearing people are often flexible and adaptable. Further, they are usually very loyal and often stay in the same job for decades.

For deaf and hard-of-hearing school leavers and job seekers, written texts with complex vocabulary often constitute a barrier to the access of information. Linguistic exclusion leads to actual exclusion. Deaf and hard-of-hearing job seekers are statistically less likely to find and keep employment. Moreover, due to a lack of bilingual training opportunities, the possibilities for participation, lifelong learning and personal growth open to them are severely limited.

Lack of opportunities, particularly in the employment market, can lead to psychological, social, emotional, health and financial pressures, which in turn may result in social exclusion and depression. According to the World Health Organization, these are the most common and difficult issues for deaf and hard-of-hearing people in particular to overcome.

The worldwide trend towards digitalisation brings its own problems for deaf and hard-of-hearing job seekers. There has been a surge in the use of web-based technologies and online services, particularly since the COVID pandemic, with many services moving fully online. Not only is the digital world littered with jargon deriving from English (another linguistic barrier), it is very written language heavy and there simply are not sufficient accessible sign language resources available.

The FTS partnership conducts surveys at several levels to ascertain the needs of deaf and hard-of-hearing job seekers. The surveys are targeted at four main groups: deaf and hard-of-hearing job seekers, deaf and hard-of-hearing experts (these are people working with the main target group, such as trainers, teachers, counselors – both hearing and deaf and hard-of-hearing), employers and recruiters, and finally national European Deaf Associations.

The core aims of the surveys are threefold:

- Obtaining rough baseline data (i.e., age, gender, language preferences, background information, as well as educational attainments of job seekers in Germany, Austria, Turkey and Italy),

- Obtaining rough qualitative overview of access to sign language, training in sign language and sign language materials for deaf and hard-of hearing job seekers in Germany, Austria, Turkey and Italy which are available to date and

- Qualitative analysis of specific training needs with special focus on transferable digital skills.

The surveys are structured to provide first empirical foundation for comparison between the self-analysis (of digital skills already acquired) of the deaf and hard-of-hearing job seekers themselves, the perceptions of experts working with deaf and hard-of-hearing job seekers, as well as the expectations of employers and recruiters working to place deaf and hard-of-hearing job seekers in jobs.

Empirical findings will be used to provide recommendations for the development of training materials for the subsequent work packages in this ongoing FTI project. At the level of sustainability, they provide orientation for adapting existing training materials on digital skills and new insights into the contemporary digital literacy of deaf and hard-of-hearing job seekers, as well as the design of educational opportunities for deaf and hard-of-hearing students and job seekers who use sign language(s) as primary language(s).

2. Background information

2.1 Background Germany

Deaf Communities

Sign Language Users

Since 1979, the Federal Statistical Office has been collecting federal statistics on deaf and hard-of-hearing persons every two years. In the year 2021 the number of deaf and hard-of-hearing persons in Germany was 302,510, of whom 50,160 were assigned to the category "deaf". Of these, 29,680 were aged between 15 and 65. 252,350 people were hard-of-hearing. Of these, 72,865 were aged between 15 and 65.[1] (Source: Federal Statistical Office, Statistics on Severely Disabled Persons, Summary Report 2021).

However, for the determination of the number of deaf and hard-of-hearing there is no “official” statistic, because the status "deafness and hard-of-hearingness" (like any other disability) is not reportable, so that a further number of deaf and hard-of-hearing people are not counted. There are also different definitions of the term "deafness and hard-of-hearingness" which results in different statistical data. For 2018, the German Deaf Association estimated 83,000 deaf and hard-of-hearing people living in Germany, calculating that there are 0.1% deaf and hard-of-hearing people in relation to the total German population.

There are no official statistics on sign language users. In different sources the number of people who know sign language is estimated between 200,000 and 300,000 users.[2]

Legal Status of Sign Language(s)

The political recognition of DGS in Germany took place as early as 1998 in Hesse by means of a resolution, and legal recognition finally took place in 2002 with the Act on Equal Opportunities for Persons with Disabilities (§ 6 and § 9 BGG). Its use in administrative procedures is regulated by the Ordinance on Communication Aids, which came into force in July 2002. With the recognition, deaf and hard-of-hearing people have a right to the assistance of sign language interpreters in official matters. For other fields, such as education, the regulations are handled differently in the individual federal states.

Deaf Associations

[1] https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Gesundheit/Behinderte-Menschen/Publikationen/Downloads-Behinderte-Menschen/sozial-schwerbehinderte-kb-5227101219004.pdf?__blob=publicationFile

[2] https://www.inklusives-arbeitsleben.lwl.org/glossar_gebaerdensprache/

The German Federation of the Deaf (Deutscher Gehörlosen-Bund e.V., DGB) represents the socio-political, cultural, occupational and health policy interests of the deaf and hard-of-hearing and other people with hearing disabilities in Germany with the aim of their equality and self-determination. The DGB has been in existence since 1927 and, as an umbrella organization, is made up of the sixteen federal state associations and ten nationwide specialist associations. Around 600 associations are affiliated with these federations nationwide. The DGB works closely with the regional and sectoral federations and represents their interests at the federal level.[3]

Deaf Employment

I. Situation on the Job Market

As will be shown in the section on "Education," deaf and hard-of-hearing school attendants often achieve lower levels of education and qualifications than their hearing peers. This is reflected in unemployment rates.

Although the Federal Government does not currently have official statistical information on the proportion of deaf and hard-of-hearing people registered as unemployed, as it is not considered necessary to collect data on the labor force participation of people with disabilities differentiated by type of disability.

Nevertheless, there is data on the total group of severely disabled persons, which is determined annually by the Federal Employment Agency on the basis of restricted reference values. First of all, it should be mentioned that the labor market development for severely disabled people is less influenced by the economy and more by legal framework conditions and demographic developments. Unemployed people with severe disabilities are well qualified: Proportionally, there are slightly more unemployed persons with severe disabilities who have completed vocational training than unemployed persons without severe disabilities. The number of severely disabled people in employment has been rising steadily for years. However, the growth trend was halted for the time being in 2020, the year heavily affected by the Corona pandemic. In March 2022, the number of severely disabled people registered as unemployed with the Federal Employment Agency was 166,366. This represents 7% of all people registered as unemployed in Germany and an increase of +5.6% compared to March 2020. The percentage increase in unemployment for severely disabled people from 2020 to 2022 is significantly higher than the increase for all unemployed people. Unemployment among severely disabled people is declining more slowly than unemployment among all unemployed people. Although severely disabled people, measured in terms of the unemployed population, do not become unemployed as frequently, they still manage to find employment in the primary labor market less often than people who are not severely disabled. The dynamics of unemployment is significantly lower for severely disabled unemployed than for non-severely disabled. The duration of unemployment and the proportion of long-term

[3] www.gehoerlosen-bund.de

unemployed are therefore significantly higher. It should also be noted that severely disabled people in Eastern Germany, with a rate of 12.9% (2021), are even more affected by unemployment than severely disabled people in Western Germany (11.2%, 2021).[4]

II. Accommodation

All persons with a degree of disability of at least 50 are considered severely disabled. In order for severely disabled people not only to participate in working life, but also to be able to perform work that is suitable for them, they have special rights in the Federal Republic of Germany. It is still possible to be treated as equal to severely disabled people.

Equal status with severely disabled persons is subject to certain conditions. Among other things, your degree of disability must be at least 30, but less than 50.

The aim of equality is to compensate for disadvantages on the labor market: Equality is intended to help people find or retain suitable employment. The legal basis for equality is Section 2, Paragraph 3 and Section 151, Paragraphs 2, 3 and 4 of the German Social Code, Book IX (SGB IX).

Severely disabled persons and those who are on an equal footing with them basically have the same rights. In the context of employment, this means the following, for example:

- The law protects them more strongly against dismissal than non-disabled employees.
- They can also receive financial assistance for a job that takes their special needs into account.
- Severely disabled people and those who are on an equal footing with them have access to the Integration/Inclusion Offices and are entitled to support from Integration/ Inclusion Specialist Services.
- Grants or other forms of support make it economically easier for employers to hire and permanently employ severely disabled people and those who are on an equal footing with them.

Education

Types of Schools

With the "Recommendation on Special Educational Support in the Schools of the Federal Republic of Germany" of May 6, 1994 of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder (KMK), the German federal states agreed to offer special educational support also in general schools. In the meantime, there are different places of education for children and adolescents with the special focus “hearing" in Germany and in the

[4] https://www.rehadat-statistik.de/statistiken/berufliche-teilhabe/arbeits-und-erwerbslosigkeit/arbeitslos-statistik-der-bundesagentur-fuer-arbeit/

year 2020 more than half of them (52,8%)[5] attended a general school together with hearing children. Different concepts for this are currently being tested and implemented. For example, there is the concept of speech-oriented individual integration or individual integration with DGS interpreters, with or without special education teachers. There are also models of so-called "external classes" (“Außenklassen”), in which hearing and deaf and hard-of-hearing children are taught in groups at mainstream schools that cooperate with special schools. In addition to group integration within special schools, there is also orally or bilingually group integration in inclusive special schools (“Inklusive Schwerpunktschulen”). In contrast to the existing schools with a special educational focus, children and young people with and without special educational needs learn together there. Inclusive special schools specialize in inclusive education in specific special needs areas. In Berlin, for example, a total of 36 schools have been developed into inclusive special schools since the 2016/2017 school year.[6]

Primary and Secondary Education

Deaf children can attend mainstream schools with various support services (interpreters, signing support staff, communication assistants) or special schools (although not necessarily with sign language competent instruction). In Germany, there are some special schools that offer bilingual programs, for example the Ernst-Adolf-Eschke-Schule, a special school in Berlin.

Unfortunately, there is only one boarding school with an upper school in Essen, where it is possible for deaf and hard-of-hearing students to obtain the advanced technical college entrance qualification (“Fachhochschulreife”) or the high school diploma (“Abitur”), the Rheinisch-Westfälisches Berufskolleg Essen.

In 2020, a good 582,400 students in Germany were receiving special educational support. Of these, 21,970 (3.8%) were in the special focus area of hearing.[7] In the same year, around 254,500 students with special educational needs were counted in general schools. This was 8,200 (3.2%) more than in the previous year. Since 2011, the share of all students with special needs education has increased by almost 20 percentage points from 25.0% to 44.5% in 2020.[8]

Of the students with special educational needs who are taught at general schools, around 11,607 (4.6%) are assigned to the special focus area of hearing.

The most recent data on the number of students with a special focus on hearing in the respective types of school are available for the 2019/2020 school year: Out of a total of 11,493 students, 3,700 (32.2%) attended elementary school, 2,040 (17.7%) attended high school (“Gymnasium”), 1,735 (15.1%) attended integrated comprehensive school (“Integrierte

[5] https://www.kmk.org/fileadmin/Dateien/pdf/Statistik/Dokumentationen/Dok231_SoPaeFoe_2020.pdf, p. XX
[6] https://www.berlin.de/sen/bildung/schule/inklusion/schwerpunktschulen/
[7] https://www.kmk.org/fileadmin/Dateien/pdf/Statistik/Dokumentationen/Dok231_SoPaeFoe_2020.pdf, p. XVI f.
[8] https://www.kmk.org/fileadmin/Dateien/pdf/Statistik/Dokumentationen/Dok231_SoPaeFoe_2020.pdf, p. XX

Gesamtschule"), 1,219 (10.6%) attended school types with multiple educational programs, and 458 (4%) attended secondary school ("Hauptschule").[9]

In 2020, 30,500 (-4.2%) fewer students than in the previous year completed their education at special schools. Of these, around 7,000 (23.0%) achieved a secondary general school leaving certificate, while 22,200 (72.7%) left the special schools without a secondary general school leaving certificate.[10] Only about 70 students graduated from the special school with a university entrance qualification.[11] Specific data for the special focus area of hearing are not available.

University Education

There are also deaf and hard-of-hearing students attending universities, but the provision of sign language interpreters varies depending on the federal state, so that sign language interpreters are not always provided for study.

According to the 21st Social Survey conducted by the Federal Ministry of Education and Research in 2016, in the summer semester of 2016, eleven percent of students had one or more health impairments (see glossary at www.sozialerhebung.de) that, according to those affected, made their studies more difficult. Extrapolated to the population of 2.37 million students in Germany (see glossary at www.sozialerhebung.de), approximately 264,000 enrollees have a health impairment that makes studying difficult (2012: 137,000). Compared to 2012, the proportion of this group has increased by four percentage points. 9 forms of impairment are distinguished in the 21st Social Survey, among which mental illness is reported as a form by the majority of students. Hearing impairment or deafness and hard-of-hearingness is reported as a form of impairment by 2% of those with study-related impairments.[12]

In addition, the study revealed that impairments that make studying difficult have a major impact on the course of studies. More than one-third of impaired students have already completed more than ten semesters of higher education, while only slightly more than one-fifth among those without a study-impairing impairment have this length of study (36% vs. 22%). Impaired students are nearly 1.5 times more likely to change their course of study and/or their university than non-impaired students (31% vs. 21%, and 22% vs. 16%, respectively). Furthermore, they interrupt their studies proportionately more than twice as often as students without impairments.[13]

[9] https://www.kmk.org/fileadmin/Dateien/pdf/Statistik/Dokumentationen/Aus_SoPae_Int_2019.pdf, p. 6
[10] https://www.kmk.org/fileadmin/Dateien/pdf/Statistik/Dokumentationen/Dok231_SoPaeFoe_2020.pdf, p. XXIV
[11] https://www.kmk.org/fileadmin/Dateien/pdf/Statistik/Dokumentationen/Dok231_SoPaeFoe_2020.pdf, p. 9
[12] https://www.dzhw.eu/pdf/sozialerhebung/21/Soz21_hauptbericht_barrierefrei.pdf, p. 36 f.
[13] https://www.dzhw.eu/pdf/sozialerhebung/21/Soz21_hauptbericht_barrierefrei.pdf, p. 37

Vocational Training

In Germany, there are offers of vocational training centers that are specially tailored to deaf and hard-of-hearing trainees. The path to a vocational training center “Berufsbildungswerk” (BBW) usually leads through the Federal Employment Agency. The responsible rehab counselors work with the young people to decide which vocational training program is right for them. The path to the BBW is also open to young people without a school-leaving certificate. Information is available from the rehab counselors at the Employment Agencies, the Integration/Inclusion Office and the Integration/Inclusion Specialist Services. In addition, the Supplementary Independent Participation Counseling Centers provide advice on training paths for people with disabilities, among other things. Young people who are recommended by the BA (Bundesagentur für Arbeit, Federal Employment Agency) for training in a BBW can select the BBW that is right for them based on their special needs in consultation with the counselor.

The database on the website of the Federal Association of Vocational Training Centers (Bundesarbeitsgemeinschaft Berufsbildungswerke) lists the following 16 vocational training centers for deaf and hard-of-hearing youths, as well as for young people with problems related to speech:[14]

ALBBW, Annedore-Leber-Berufsbildungswerk Berlin;

BBW Aschau am Inn, Don Bosco Aschau am Inn, BBW Waldwinkel;

BBW Bigge-Olsberg, JG-Gruppe, Berufsbildungswerk Bigge;

BBW Gera, CJD Berufsbildungswerk Gera gGmbH;

BBW Hannover, Diakovere Annastift Berufsbildungswerk;

BBS Hof, Diakonie Hochfranken, Diakonie am Campus gGmbH;

BBW Homburg/Saar, CJD, Homburg/Saar gGmbH;

BBW Husum, Theodor-Schäfer-Berufsbildungswerk Husum;

BBW Leipzig, Berufsbildungswerk Leipzig für Hör- und Sprachgeschädigte gGmbH;

BBW Mosbach-Heidelberg, Berufsbildungswerk Mosbach-Heidelberg;

BBW München, Berufsbildungswerk München Förderschwerpunkt Hören und Sprache;

BBW Neuwied, Berufsbildungswerk der Heinrich-Haus gGmbH;

BBW Nürnberg, Berufsbildungswerk Bezirk Mittelfranken Hören. Sprache. Lernen;

BBW Winnenden, Berufsbildungswerk Paulinenpflege Winnenden;

[14] https://www.bagbbw.de/

BBW Worms, Berufsbildungswerk Worms;

SRH Berufsbildungswerk Dresden.

Further offers in the field of vocational training for deaf and hard-of-hearing people can be found on the online presence of REHADAT (REHADAT is the name of an information system on the occupational participation of people with disabilities. It is funded by the Federal Ministry of Labor and Social Affairs and is a project of the Institute of the German Economy).

https://www.rehadat-adressen.de/adressen/hilfs-und-serviceangebote/angebote-fuer-hoerbehinderte-und-gehoerlose-menschen/index.html?query=Ausbildungseinrichtung%20f%C3%BCr%20h%C3%B6rbehinderte%20Menschen&filter=schlagwort_adr:%22Ausbildungseinrichtung%20f%C3%BCr%20h%C3%B6rbehinderte%20Menschen%22

In Germany, more than 15,000 young people with disabilities are trained each year in vocational training centers at over 50 locations in a variety of trades and professions, including communications and IT.[15]

According to the Federal Association of Vocational Training Centers, 60% of young people find a job after their training. The BBW work closely with companies to make the training practical and close to the labor market. Thus, 22% of the training courses take place in conjunction with companies. The Federal Association of Vocational Training Centers also assures that 89% of BBW trainees successfully pass their final exams before the chambers.[16]

Education of Teachers

The universities of Berlin, Hamburg, Heidelberg, Munich, and Cologne offer special study programs that allow students to earn a Master's degree, which can include Sign Language Pedagogics. However, the quantity of sign languages courses offered differs enormously between the universities. For example, sign language is not an integral part of the degree program at some universities, but rather a specialization that individual students can opt to take. At other university, the acquisition of sign language forms an integral part with different amounts of time. The Humboldt-Universität zu Berlin also offers the BA Program Deaf Studies.

Education of Counselors

In the education and training of counselors, the focus is on professional qualifications (completed studies in a social field) with additional training in sign language. The currently offered trainings in sign language can be acquired either at special service schools or at adult education centers. Some employers offer internal sign language courses in order to improve sign language skills.

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15 https://www.bagbbw.de/fileadmin/user_upload/BAGBBW/Publikationen/Flyer_Qualitaet_in_Zahlen_web.pdf

16 https://www.bagbbw.de/fileadmin/user_upload/BAGBBW/Publikationen/Flyer_Qualitaet_in_Zahlen_web.pdf

Interpreting Education

There are degree programs at seven different universities that offer German Sign Language Interpreting:[17]

B.A. and M.A. at the Universität Hamburg

B.A. Deaf Studies and M.A. Sign Language Interpreting at the Humboldt-Universität zu Berlin

B.A. at the Hochschule Magdeburg Stendal

B.A. at the Hochschule Landshut

B.A. at the Universität Köln

B.A. at the Universität Heidelberg

Diploma at the Westsächsische Hochschule Zwickau

Qualification Standards

In some federal states, a state examination for interpreters and/or translators is offered. Those who pass such an exam are allowed to use the title "Staatlich geprüfter Übersetzer" or "Staatlich geprüfter Dolmetscher" or "Staatlich geprüfter Gebärdensprachdolmetscher". The examination is usually held once a year and complies with the Framework Agreement on the Conduct and Recognition of Examinations for Translators and Interpreters and Interpreters for German Sign Language, according to the resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of December 17, 2020. In the school year 2022/2023, the examination can only be held in the state of Hesse. However, it should be emphasized that the title obtained is not recognized in every federal state.

Employment

Legal Framework

The Social Code Book Nine (SGB IX) is the most important law for the rehabilitation and participation of people with disabilities. The aim is to promote the self-determination, equal opportunities and participation of people with disabilities in social life. A central area of life is working life. Organizational, technical, or personnel support measures can often compensate for health restrictions in the work context. To this end, SGB IX offers a wide range of financial and advisory support services for companies and employees, which are to be provided individually and flexibly. These support regulations are in turn specified in the benefit laws of

[17] https://studieren.de/gebaerdensprachdolmetschen.hochschulliste.t-0.c-989.html

the individual benefit providers, such as the Federal Pension Insurance or the Employment Agency.[18]

Support Services

In Germany, the Integration/Inclusion Office and Integration/Inclusion Specialist Services are the primary points of contact for deaf and hard-of-hearing job seekers, deaf and hard-of-hearing employees and their employers. The Integration/Inclusion Office advises and informs on all issues related to employment, especially on prevention and accessible workplace design, as well as on difficulties in the workplace. Individual support, guidance and counseling for deaf and hard-of-hearing people and their employers is provided by the Integration/Inclusion Specialist Services. The services can be commissioned by the Integration/Inclusion Office, by the Employment Agency or by vocational rehabilitation agencies. There are Integration/Inclusion Specialist Services throughout Germany. There are different forms of support and financial assistance for both employers and employees. An overview is provided in the publication "Leistungen für schwerbehinderte Menschen im Beruf" (Benefits for severely disabled people in employment) by the Federal Association of Integration/Inclusion Offices and Main Welfare Centers (BIH). A work assistance service can be ordered for integration into working life or to secure employment subject to social insurance contributions. In this case, the employees must be able to perform the core of the work independently. The work assistance service only provides the necessary support. The tasks of a work assistant for deaf and hard-of-hearing employees usually include interpreting services, translation services or writing assistance services. The deaf and hard-of-hearing employees/employers themselves are responsible for organizing and guiding the support. The work assistance can be hired or a service can be contracted. The service is granted as a cash allowance in the form of a personal budget. The costs can be covered either by the Integration/Inclusion Office or a rehabilitation provider. Furthermore, technical work aids can be applied for to compensate for the hearing disability in the exercise of an occupation.

Preparedness of Teachers, Students, Counselors and Interpreters/Translators

Primarily due to the fact that educational policy in Germany is a matter for the federal states (cultural sovereignty of the Länder), it is difficult to make statements about the preparedness of teachers, students, counselors and interpreters at the federal level. Certainly, deaf and hard-of-hearing people have greater opportunities in metropolitan areas than in rural areas of Germany.

Awareness of Employers

In-house or out-of-house information events and/or communication training for deaf and hard-of-hearing employees and their supervisors, work teams and company contact persons can greatly improve mutual understanding and communication. They provide practical knowledge about hearing impairment and its effects and raise awareness of how to deal with

[18] https://www.rehadat.de/export/sites/rehadat-2021/lokale-downloads/rehadat-publikationen/wissensreihe-09-hoerbehinderung.pdf, p. 7

hearing loss in the workplace. Communication seminars and workshops are conducted by the Integration/Inclusion Offices, Integration/Inclusion Specialist Services, some vocational training centers, the German Association for the Hard-of-Hearing and other private providers. The Integration/Inclusion Offices can cover the participation fees, travel costs, the necessary interpreting services, and the costs of accommodation and meals for participants from companies and departments in their federal state.[19]

Deaf Skills

Deaf and hard-of-hearing employees are often characterized by a high level of attention - a trait they have acquired through constant training in listening and absorbing information through vision. Furthermore, they are usually highly motivated to demonstrate their skills.

Employers have the possibility to receive a wage subsidy if they support the education and training of deaf and hard-of-hearing people or employ them. The exact amount of the subsidy depends on many factors and can vary depending on the situation, with a maximum of up to 70% of the wage.

In addition, companies that employ a certain percentage of their total workforce of people with disabilities do not pay a compensatory levy.

Support from Governments

In general, improving the participation of persons with disabilities in working life is a central concern of the Federal Government and one of the priorities of participation policy in the coalition agreement.

The Federal Ministry of Labor and Social Affairs (BMAS) of the current 24th Federal Government of the Federal Republic of Germany has conducted a "Representative Survey on the Participation of People with Disabilities" in 2022, which examines the participation of people with impairments and disabilities, including people with hearing impairments, in key areas of life.

The BMAS also promotes supra-regional projects for the participation of severely disabled people in working life with funds from a compensation fund. Currently, the following projects are promoted to improve the employment situation of deaf and hard-of-hearing people:

- Maintaining the Employability of Deaf, Hard-of-Hearing and Deaf-Blind People in Working Life at the University of Cologne (April 1, 2021 to March 31, 2025).

- TEBEK - Online Test Procedure for the Assessment of Occupationally Relevant Competencies of Deaf and Hard-of-Hearing People of RWTH Aachen University (January 1, 2022 to December 31, 2025)

[19] https://www.rehadat.de/export/sites/rehadat-2021/lokale-downloads/rehadat-publikationen/wissensreihe-09-hoerbehinderung.pdf, p. 52 f.

- Digital Support for the Professional Integration of Deaf and Hard-of-Hearing People of Malt Harms GmbH - Fachdienst für berufliche Integration (October 1, 2021 to September 30, 2025).[20]

Concluding Remarks

Even though the situation on the labor market and the access to information for deaf and hard-of-hearing people has improved over the years through legal and structural measures, they are still structurally strongly disadvantaged and have to make additional efforts to obtain equal opportunities. Accessibility to information in the form of sign language is not self-evident and often has to be actively demanded.

2.2 Background Austria

Deaf Communities

Sign Language Users

In 1996, the number of people who were deaf, hard-of-hearing or late-deaf was 456,000. This number included 51,000 people who had great difficulty hearing even in a quiet environment, as well as 10,000 people who were deaf and hard-of-hearing.[21]

Data collected in 2007 and 2015 showed consistently falling numbers of deaf, hard-of-hearing or late-deaf people, however the survey in 2015 was conducted by telephone, which could partly account for the fall since people with severe hearing impairments could not take part.[22]

The Austrian Health Interview Survey (ATHIS) conducted in 2019 showed that 7.2% of the population of Austria aged 15+ has difficulties hearing in a quiet room (despite using a hearing aid).[23]

There is no concrete data available on the number of sign language users. While not all of the approximately 10,000 deaf and hard-of-hearing people sign, many hearing people (including CODAs (children of deaf and hard-of-hearing adults), Sign Language Interpreters, relatives of deaf and hard-of-hearing people, and people learning sign language for their jobs or as a hobby) do.

Legal Status of Sign Language(s)

[20] https://dserver.bundestag.de/btd/20/044/2004488.pdf, p. 2
[21] Statistik Austria, Mikrozensus 1995
[22] Statistik Austria, Mikrozensus 2015
[23] Statistik Austria, ATHIS 2019

Austrian Sign Language has been recognized as an independent language in the Austrian Federal Constitution since 2005.

Article 8, Paragraph 3 of the Federal Constitution Law states “Austrian Sign Language is recognized as an independent language. The laws determine the details”.

However, virtually no laws actually exist to clarify what this means in everyday life e.g., education, access to sign language in public life, working provisions and more.

Deaf Associations

The ÖGLB (Österreichischer Gehörlosenbund, Austrian Deaf Association) is the advocacy association for the deaf and hard-of-hearing community in Austria. The ÖGLB was founded in 1913 as an umbrella organization. Currently, six Federal Deaf Associations (for Lower Austria, Upper Austria, Styria, Carinthia, Tirol, Vorarlberg) are members of the ÖGLB. Many Local Deaf Associations offer services and support for the community, as well as many associations specializing in certain fields e.g., sports.[24]

Deaf Employment

As mentioned earlier, deaf and hard-of-hearing school leavers achieve lower levels of education and fewer qualifications than their hearing peers. In Austria as well, this is reflected in unemployment rates.[25]

[24] Home - ÖGLB (oeglb.at)

[25] Public Employment Center - AMS, Data from 30/6/2014
http://www.ams.at/_docs/001_am_bildung_0614.pdf
AMS via https://derstandard.at/2000062640283/Jugend-ohne-Job (Data from 2016)

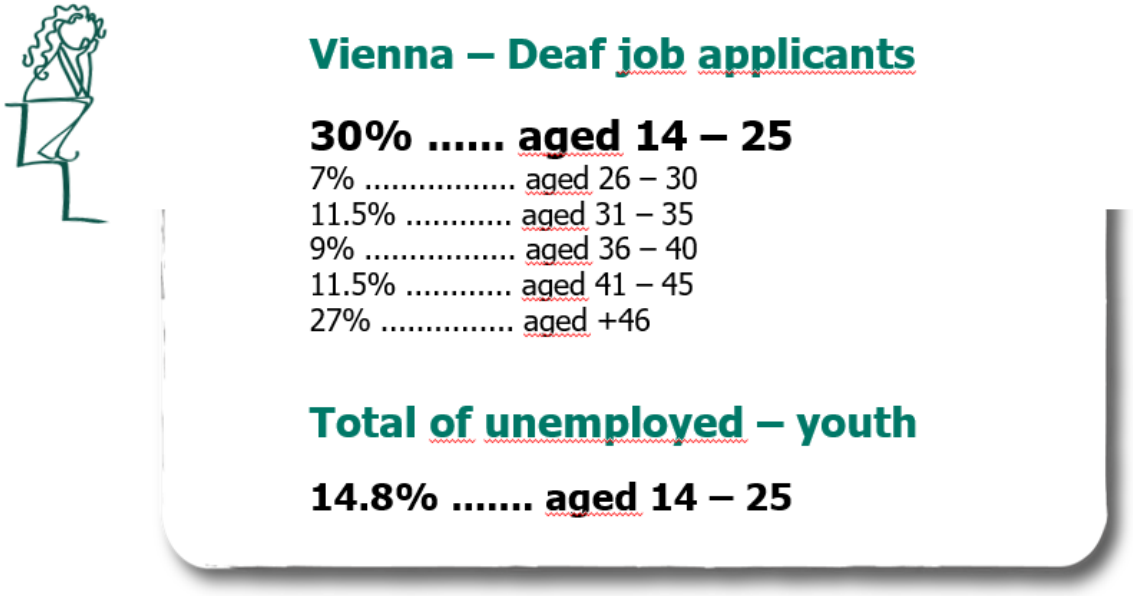

Fig. 1: Comparison of unemployment rates for deaf and hard-of-hearing / hearing people

Not only is unemployment considerably higher amongst people of working age who are deaf and hard-of-hearing, only 35% of those who find work, find placements on the first labor market:

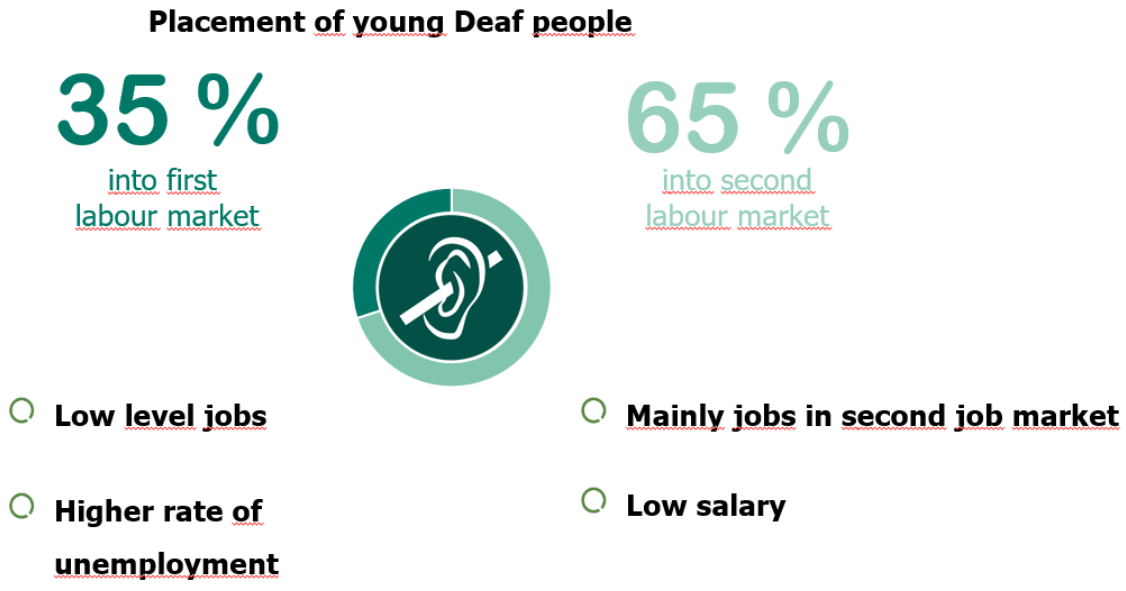

Fig. 2: Comparison of placement (first / second labor market) of deaf and hard-of-hearing employees[26]

I. Kinds of Jobs

Due to the disadvantages in the school system (see section below) most deaf and hard-of-hearing people work in jobs requiring only low qualifications. Some professions still have restrictions based on hearing ability (for example until recently kindergarten pedagogues were required to be able to play the flute or the guitar).

II. Accommodation

If a person belongs to the group of "begünstigte Behinderte" (English: favored people with disability) that means their degree of disability is at least 50.

In Austria, the issue of supporting deaf and hard-of-hearing people is enshrined (in relation to the Constitution) in the Medical Disability Act. Articles 3 and 4 define the support measures and technologies, as well as the source of funding for these measures. The law does not define the specific amount each individual can receive. After receiving a request for an allowance from a deaf or hard-of-hearing person, the appropriate authorities make their decision on a case-by-case basis. They look at a number of factors:

Where the applicant lives – in Austria some budgets are federal, while regional governments are responsible for others. That is why the amount of the allowance in individual states may vary depending on the spending priorities of the region.

- Degree of disability
- Occupation/employment
- Ability to access charitable resources
- Health and pension insurance
- Other factors

At the same time, however, there are also subsidies, grants and support services for companies that provide services for people with disabilities.

The support services for people who need assistance are offered in the form of central labor market projects run by the Ministry of Social Affairs.

Local Deaf Associations offer support to deaf and hard-of-hearing job seekers and employers of deaf and hard-of-hearing people and are funded by the Federal Government.

[26] Data from working assistance/Witaf 2012,
Enormous impact on life quality. See CHEERS study 2007: https://www.barmherzige-brueder.at/unit/issn/gehoerlosigkeit/wissenschaft

Deaf Professionals by Training[27]

2013-2015 - four-semester university course in sign language teaching offered at the Alpen-Adria-Universität of Klagenfurt.

Four-semester university course "LOGO!" at Salzburg University offers translation and interpreting for Austrian Sign Language, written German and International Sign.

The Pädagogische Hochschule Niederösterreich offers further education courses in Austrian Sign Language, as well as a course within the area of Deaf Education.

Deaf Pedagogues are trained and certified by the ÖGSLV – Österreichischer GebärdensprachlehrerInnen Verband. The first training was offered in cooperation with equalizent.

The City of Vienna trains kindergarten teachers and assistant teachers. The training started in 2015 and was prepared in cooperation with equalizent. This means that deaf and hard-of-hearing children in kindergarten can also be offered a first-language model in Austrian Sign Language.

Education

Types of Schools

1,422 in compulsory school (in whole Austria)

209 of them in Vienna

29 in High school

50% in regular schools with integrative support

50% in schools for children with disabilities

[27] Bericht der Bundesregierung über die Lage der Menschen mit Behinderungen (2017) https://broschuerenservice.sozialministerium.at/Home/Download?publicationId=428

Fig. 3: Source: IHS Study „Abschätzung der Bedarfslage an ÖGS-DolmetscherInnen“, J. Hartl, M. Unger (2014)

Primary and Secondary Education

50% of deaf and hard-of-hearing children attend mainstream schools with various support (sign language teachers, signing support staff, interpreters, communication assistants), while the remaining 50% are in special schools (although, as in Germany, not necessarily with sign language competent instruction). In Austria, the prevailing trend in teaching, even in special schools, is oralist.

There are only limited places in inclusive schools offering instruction in sign language. Even then, most lessons are taught orally with the provision of sign language interpretation for deaf and hard-of-hearing students, rather than being prepared and adapted to the needs of deaf and hard-of-hearing students, and taught bilingually (in written / spoken German and Austrian Sign Language).[28]

In the 2013/14 school year, there were 683,006 children of compulsory school age attending school in Austria, 1,422 of which were deaf or hard-of-hearing. A disproportionately large number of deaf and hard-of-hearing children attended school in Vienna - 424 or 30% of all deaf and hard-of-hearing children in the whole country. 29 deaf and hard-of-hearing children attended a high school.[29]

University Education

There are currently approximately 30 deaf students in Austria, mostly concentrated in Vienna.[30]

General information for students with disabilities:

https://www.uniability.org/standorte/

GESTU in Vienna (Technical University of Vienna) offers support for deaf and hard-of-hearing students: https://www.tuwien.at/studium/studieren-an-der-tuw/gestu

GESTU in Graz: https://www.tugraz.at/studium/studieren-an-der-tu-graz/studieninteressierte/gestu-graz-gehoerlos-und-schwerhoerig-erfolgreich-studieren/

VÖGS: https://www.voegs.at/

[28] Österreichischer Gehörlosenverbund 2015.
[29] „Abschätzung der Bedarfslage an ÖGS-DolmetscherInnen“, J. Hartl, M. Unger, 2014, https://bildung.bmbwf.gv.at/schulen/sb/oegs_bedarfslage_dolmetsch.pdf?61edk0
[30] According to the ÖGLB, Inklusive Bildung - Bilinguale Bildung, Positionspapier 2021

Vocational Training

Preparation for vocational training and support apprenticeship is offered by equalizent, WITAF, Wien Work and Caritas in Upper Austria. The links below are just some of the offers:

www.equalizent.com https://equalizent.com/fuer-gehoerlose

https://www.caritas-ooe.at/hilfe-angebote/menschen-mit-behinderungen/ausbildungundarbeit/ausbildung/ausbildungsvorbereitung/hand-werk-ausbildungsassistenz

https://www.wienwork.at/media/file/280_AKTUELL_Wien_Work_Presentation_EasyLanguage_Mila_2021-12.pdf

Education of Teachers

The University of Vienna offers Master's and Bachelor's Degrees in Inclusive Pedagogics, which can include Sign Language Pedagogics, and training in Austrian Sign Language. Similar courses are offered at the University of Graz and the University of Innsbruck (Bachelor).

Sign Language is not an integral part of any of the above courses, but rather a specialization that individual students can choose. The level of Austrian Sign Language competency of those who qualify and go on to teach varies.

There is a severe lack of qualified teachers and trainers able to support deaf and hard-of-hearing students in sign language. The focus is currently on the qualification as a teacher (Lehramt) rather than on sign language competency.

PLIG or "Plattform Inklusion und Gebärdensprache" is an association committed to informing parents and teachers about sign language, particularly in education: https://www.plig.at.

There is no faculty in Austria currently offering Deaf Studies.

Education of Counselors

In the education and training of counselors, the focus is on the professional qualification (completed study in a social field) with additional training in sign language. The sign language training courses currently available are:

Intensive Language Course Austrian Sign Language (Intensivsprachkurs Österreichische Gebärdensprache (IGS)) - offered by equalizent; this is an 8-month fulltime course funded by the Employment Services of Austria (AMS).

The course Communication Assistance (Lehrgang Kommunikationsassistenz) is also offered by equalizent and lasts 8 months, but is part-time (berufsbegleitend).

Courses in sign language for beginners to advanced signers are offered by other training institutes specializing in adult education, including Berufsförderungsinstitut, Volkshochschule and WITAF.

Counseling Services

The hospitals of the "Barmherzige Brüder" in Vienna and Upper Austria offer advisory services relating to health: https://www.barmherzige-brueder.at/portal/wien/home

The Land Oberösterreich has advisory services for deaf and hard-of-hearing people with addictions:

https://www.land-oberoesterreich.gv.at/26368.htm#:~:text=Hier%20finden%20h%C3%B6rbeeintr%C3%A4chtigte%20Menschen%2C%20die,600%2072%2D142%2025%20vereinbaren.

Interpreting Education

University courses in Austrian Sign Language Interpretation are offered as follows:[31]

Bachelor's degree and Master's degree at the Institute for Theoretical and practical translation sciences (ITAT) Graz

Fachausbildung Gebärdensprachdolmetschen (GESDO), (Specialized training in Sign Language Interpreting), Linz

Universitätslehrgang Dolmetschen und Übersetzen für Österreichische Gebärdensprache, Deutsch und International Sign (MODUS), (University course in Interpreting and Translating for Austrian Sign Language, German and International Sign), Salzburg

FH-Bachelorstudiengang an der FH Gesundheit, (Bachelor's degree course at the University of Applied Sciences for Health), Innsbruck

Qualification Standards

Since 1998, the ÖGSDV (Austrian Association for Sign Language Interpreters and Translators) has provided professional aptitude tests for Sign Language Interpreters, which are organized in cooperation with the University of Graz.

Availability of Translators and Interpreters

There is a severe lack of qualified Sign Language Interpreters who are very unevenly distributed throughout Austria; centered in Vienna, Lower Austria and Upper Austria, there are just 3 in Carinthia. A study from 2014 showed that there were 107 fully trained Sign Language Interpreters in Austria, around 60% of whom worked full-time.

[31] https://oegsdv.at/wege_zum_beruf/ausbildungsmoeglichkeiten/

Employment

Support Services

As with the sections above relating to education, teaching and counseling, the same few organizations offer support to deaf and hard-of-hearing people. These include WITAF and equalizent, as well as Wien Work, in Vienna and Lower Austria. Further options may include the following:

AMS provides important information in sign language: https://www.ams.at/arbeitsuchende/arbeitslos-was-tun/gebaerdensprachvideos;

MyAbility (https://www.myability.org) provides advisory services for deaf and hard-of-hearing job seekers and has a platform for inclusive jobs (https://www.myability.jobs/at).

Preparedness of Teachers, Students, Counselors and Interpreters/Translators

There is little standardization. It depends on the individual with some teachers, students, counselors and interpreters going the extra mile to get involved in additional training.

Deaf and hard-of-hearing people living in Vienna, Lower Austria and Upper Austria have the most choice and the most options. Due to these regional variations, preparedness depends on the demand and supply – 3 interpreters in Carinthia mean there is little or no choice and few alternative options.

Awareness of Employers

To what extent employers are sensitized is generally hard to say. There have been some projects to sensitize employers including Signs For Handshakes (https://signsforhandshakes.eu/) and sensitization workshops are offered by the ÖGLB and MyAbility (see links above).

Deaf Skills

While the concept of Deaf Gain is widespread within the Austrian deaf and hard-of-hearing community, there is little mainstream awareness of advantages connected with the employment of deaf and hard-of-hearing people. Deaf and hard-of-hearing people were traditionally encouraged to work as tailors and seamstresses, in factories as toolmakers or as carpenters. Siemens Austria has a training program for deaf and hard-of-hearing apprentices in electronics, for example.

Support from Governments

There is considerable government support for initiatives to promote deaf and hard-of-hearing people, such as from the Arbeitsmarktservice (AMS) and Sozialministerium Service (SMS), that enable organizations such as equalizent and WITAF to provide their courses, counseling and support services.

Concluding Remarks

While the situation has improved greatly in recent years with new services, new vocational training fields and new opportunities in primary, secondary and post-secondary education, there is still a long way to go.

For deaf and hard-of-hearing people the situation is complex, difficult to navigate for individuals, regionally unfair with patchy coverage in the counties and most services, counseling, courses and opportunities are only offered in or around Vienna.

There is a real scarcity of Sign Language Interpreters, as well as sign language competent professionals (such as teachers, trainers, counselors and more) and the level of qualification required for these fields discourages deaf and hard-of-hearing people from qualifying (as mainstream teachers, for example).

2.3 Background Turkey

Deaf Communities

Sign Language Users

Hearing loss occurs due to many congenital and non-congenital causes, such as maternal diseases, certain medications, baby's stay in intensive care, low birth weight, severe jaundice, hereditary/non-hereditary diseases.

In Turkey, approximately 1,100,000 babies are born annually, and 2 to 3 out of every 1,000 babies are born with hearing loss. This rate increases up to 6% with temporary hearing loss due to childhood diseases, ear infections, accidents and certain medications. When we look at the data on the number of deaf and hard-of-hearing in our country – the number of disabled persons registered and alive in the National Disability Data System established by the Ministry of Family and Social Services – we see that there are 2,511,950 people, of whom 1,414,643 are men and 1,097,307 are women, and 179,867 of them are deaf and hard-of-hearing (T.C. Sağlık Bakanlığı (Ministry of Health), 2022).

Legal Status of Sign Language(s)

Turkish Sign Language (TSL) is one of the oldest sign languages in the world and is a language used by the deaf and hard-of-hearing in Turkey. Turkish Sign Language also has its own grammatical structure, which is different from the grammatical structure of Turkish.

After the passing of the Turkish Grand National Assembly (TBMM) Law on July 1, 2005, which included "Turkish Sign Language" number 5378 as its first article (Article 15), TID was

recognized as a language used in Turkey. Since then, both social and scientific interest in TID has increased day by day (Akmeşe, 2016).

In Turkish Sign Language, there is no question suffix or prefix. The facial expression is used. The negation of verbs and adjectives is done with "not". Regional differences show different communication difficulties and accordingly make communication more difficult. Therefore, the Turkish Sign Language Dictionary was created in 2015 by the Ministry of National Education with the aim of being a resource for TSL and creating a common language.

Consisting of 2607 words, this dictionary contains the words commonly used by the deaf and hard-of-hearing. Since the concepts in the language are constantly evolving, the studies in this dictionary are updated every two years.

Deaf Associations

The Turkish Federation of the Deaf and Hard-of-Hearing has been working since 2008 with the aim of providing services in almost all fields to remove all barriers for the deaf and hard-of-hearing, especially in the field of communication, to improve the access for disabled people, to increase the awareness of disabled people in society and to create social awareness (İşitme Engelliler Federasyonu (Federation of Deaf and Hard-of-Hearing), 2022).

Deaf Employment

Turkish citizens who certify that they have lost at least 40% of all bodily functions according to their disability with a disability health board report from authorized health institutions can register as "disabled" (İŞKUR, 2022).

According to the 2011 Population and Housing Survey conducted by the Turkish Institute of Statistics, a comprehensive sample survey based on administrative data conducted simultaneously with the European Union Member States, the labor force participation rate of the population with at least one disability is 35.4% for men and 12% for women (The Miinistry of Family Affairs, 2022).

Deaf Professionals by Training

In the previous academic years, departments for the deaf and hard-of-hearing, for people with cognitive disabilities, and for visually impaired persons were opened in Turkey under the YÖK for the disabled, specifically for each type of disability. Recently, however, all these teachers of the disabled have been united under one umbrella under the name of "Special Education Teaching".

Pre-service teachers studying in these departments definitely take sign language courses during their four years of education. When they are appointed, they mostly work in schools for the deaf and hard-of-hearing (mostly secondary schools) or in schools that offer inclusive education (Sömen, 2022).

Education

As of 2021, there are 48 elementary schools and 8 multi-program high schools for the deaf and hard-of-hearing in Turkey. If students are unable to benefit from inclusive education and there is no school for the deaf and hard-of-hearing in their location, they will be placed in the nearest school for the deaf and hard-of-hearing where a quota is available. In locations where there are no schools for the deaf and hard-of-hearing, students benefit from schools where inclusive education is offered.

Those who are not able to benefit from inclusive education attend the nearest free elementary boarding school for the deaf and hard-of-hearing. The students who have completed the elementary schools for the deaf and hard-of-hearing and the special schools for inclusive education are eligible in Istanbul, Kayseri, İzmir, İçel, Ordu, Trabzon, Isparta and Afyon-Bolvadin. They are placed by the Ministry of National Education without examination in the provinces and districts where they live or in the nearest provinces in high schools or vocational schools for industry, commerce or girls (Sömen, 2022).

Deaf and hard-of-hearing children in Turkey begin primary education at the same age as other children and are educated in formal educational institutions until the age of 18.

Employment

The most important service area for the disabled is ensuring the presence of the disabled in working life. Creating such a situation will bring social security and financial gain to the disabled; it will also bring about integration and cohesion with society.

Working life is important for disabled people to participate in social life, to be useful for society, to create a social environment for themselves by communicating with new people, to develop their sense of self-sufficiency, to be psychologically healthy and to express themselves economically and culturally.

Concluding Remarks

Although 3% of the disability quota in the private sector is reserved for Turkish deaf and hard-of-hearing community members, this quota is unfortunately not sufficient. In cases where applications are mostly made through İŞKUR, Turkish deaf and hard-of-hearing people face further difficulties. There is not a sufficient number of translators in İŞKUR centers, and almost none in most branch offices.

Deaf and hard-of-hearing people in Turkey often have difficulties in preparing a Curriculum Vitae and cannot apply for the relevant job because they do not know how to prepare a

Curriculum Vitae specifically for the job field. In addition, they have difficulty finding a job due to their technological inadequacies.

Developing methods to create enough jobs for deaf and hard-of-hearing people so that they can participate in working life and employing disabled people in jobs suitable for their disability will not only reduce the unemployment rate but also contribute to the stimulation of the labor market and the economy.

Deaf and hard-of-hearing people should be given the opportunity for education, they should receive professional training and qualification, and they should be prepared for the labor market and social and daily life.

2.4 Background Italy

Deaf Communities

Sign Language Users

The Italian Sign Language (Lingua dei Segni Italiana, LIS) is the language commonly used in Italy by deaf and hard-of-hearing people to communicate and interact with each other – even if they were raised and educated to express themselves with spoken language. More generally, it is used by the signer community. Many hearing people are part of this community, either because they grew up in signer families, or because they work with LIS, or because they are simply enthusiastic about the deaf and hard-of-hearing community. While it is possible to put the number of deaf and hard-of-hearing people at about 80,000, it is difficult to indicate a number of LIS users, which is certainly much higher.

Not all the terms used over time to indicate those who cannot hear are acceptable to the deaf community in Italy. Particularly unwelcome, for example, are the terms ‘deaf-mute’ and ‘hearing-impaired’ because they assume deficits in the auditory and phonatory apparatus that are by no means taken for granted - as if communicating was just a matter of the hearing organs.

The request of the Italian Deaf Associations to remove the term ‘deaf-mute’ was accepted by Law no. 95 of 2006.

The Legal Status of Sign Language(s)

Since the Second International Congress on the Education of the Deaf, held in Milan in 1880, which established oralism as the best method for the education of the deaf and hard-of-hearing, sign language was banned from educational settings, making Italy an oralist country (Zatini, 2012). The purpose of this decision was to annihilate the knowledge, use, and spread of sign language. Nonetheless, deaf and hard-of-hearing people continued to use sign

language inside and outside institutions. When linguistic research on LIS started in the late 1970s, a movement composed of deaf and hard-of-hearing people, researchers, interpreters, and supporters emerged, which over time led to the widespread of LIS. The first courses in learning sign language were given by deaf and hard-of-hearing people who were deeply aware that they had a form of communication that was a real language. The first book describing LIS was printed in 1987 (Volterra, 1987), followed by the first vocabulary (Romeo, 1991) and several publications resulting from linguistic and educational research on the teaching of LIS (Cameracanna, Franchi & Rossini, 1997). The continuous awareness-raising activity led to the presence of LIS on television. In the early 1990s, the first television programs were translated into LIS, and in 1994, the first LIS newscast with simultaneous interpreting finally appeared. The need to have more trained interpreters led to the proliferation of courses for interpreters (Franchi, 2013). Finally, on May 19, 2021, the Italian Republic recognized the LIS with the Decree-Law No. 41 of March 22, 2021, converted into Law No. 69 of May 21, 2021.

Deaf Association

The Italian National Agency for the Deaf (Ente Nazionale Sordi, ENS) is recognized by Law No. 889 of May 12, 1942. The ENS was founded in 1932 by the merger of numerous associations that had been formed in Italy in the years before. The first association was founded in Milan in 1879. Currently, the ENS is an association for social promotion, registered in the relevant national register by a decree of the Ministry of Labor and Social Policy of October 10, 2002. ENS promotes and values the dignity and autonomy of deaf and hard-of-hearing people and their full civil rights in all areas of life, as well as their self-determination, accessibility and information, education, training and school, post-school, job, vocational and social inclusion. It also promotes job placement and the creation of individual or cooperative professional businesses, and supports sign language and tactile signing, full communication and bilingualism, rehabilitation, culture, sports, leisure, and recreational activities. The agency operates throughout the country with 104 provincial sections, 18 regional councils and over 50 inter-municipal delegations. It is a member of national and international federations.

In Italy there are many other associations of the deaf and hard-of-hearing that operate on a cultural level.

Deaf Employment

Depending on the degree of deafness and hard-of-hearingness, deaf and hard-of-hearing people are entitled to various benefits:
Pension, communication allowance, prostheses and aids, registration for a targeted work placement, and ticket exemption (partial payment of medicines).
The pension for the deaf and hard-of-hearing is granted under the following conditions:

- Age between 18 years and the retirement age updated according to life expectancy at the time of application;
- Recognition of deafness or hypoacusis equal to or greater than an average of 75 decibels between the frequencies 500, 1,000, and 2,000 hertz in the “good ear”;
- Income within the limit established annually by law.

The communication allowance shall be granted to all deaf and hard-of-hearing persons regardless of their age and income.

Work:
Law No. 308 of 1958 and Law No. 482 of 1968 introduced the “compulsory placement” (on the job) of disabled persons by providing a reserve of jobs for ‘deaf-mute’ persons. These laws were then replaced by Law No. 68 of 1999 by the so-called “targeted placement”, which provides a general reserve for all disabled people, but also includes other non-disabled categories (orphans, widows, etc.). Currently, 80% of deaf and hard-of-hearing people work in public administration (Ministry of Labor https://www.lavoro.gov.it).

Relevant legislation:

- Law No. 308 of 13/03/1958: “Rules for the compulsory employment of deaf-mutes”
- Law No. 68 of 12/03/1999: “Rules for the right of disabled people to work”
- Law No. 95 of 20/02/2006: “New regulations for the hearing-impaired”

(ENS https://arealavoro.ens.it/norme-e-leggi/collocamento-mirato)
Deaf and hard-of-hearing professionals with or without degrees can enhance their education by taking in-house courses. Public and private employers must provide interpreting services.

Education

Deaf and hard-of-hearing students are taught both in mainstream schools, where a support teacher and a communication assistant are available, and in special schools for teaching deaf and hard-of-hearing students, where the special teacher faces the students as a single figure. The presence of the communication assistant is ensured only for a few hours of the lesson. In the specialized schools, the teaching is bilingual (Italian-LIS) and the subject contents are visually processed and shared through smartboards (lavagna interattiva multimediale, LIM).

In mainstream schools, the deaf and hard-of-hearing student is placed in the class of hearing children, while in special schools the classes consist of an average of four to five deaf and hard-of-hearing children and a maximum of ten hearing children. To facilitate integration and communication exchange, hearing children attend courses on LIS and on deaf and hard-of-hearing culture from the first year of secondary school.

Very often, support teachers in mainstream schools have a multi-purpose specialization (for different forms of disability), while teachers in special schools have a monovalent specialization (only for deafness and hard-of-hearingness). They use LIS and are familiar with teaching strategies designed to promote the educational success of deaf and hard-of-hearing students. The last specialization course for teaching deaf and hard-of-hearing students was conducted in 2009/2011, resulting in a shortage of teachers with monovalent qualification today. During the pandemic, all teachers had to improve their digital skills. The establishment of CLASSROOM enabled the introduction of distance learning and teaching, sharing of classroom materials, and submission and return of student work in asynchronous mode. Multimedia products are well received by all students, especially deaf and hard-of-hearing children.

Specialized schools such as ISISS Magarotto use the ISSR Office of Deafness and Hard-of-hearingness to update the functional diagnoses of deaf and hard-of-hearing students, a counseling service led by an LIS-trained psychologist, and a logopedics service led by a deaf and hard-of-hearing professional. An interpreter is provided for all additional training (events, conferences). The psychological support service is of course also active at mainstream schools, but without an interpreter service.

Interpreting Education

Interpreters are trained in private postgraduate courses - two-year courses - and will then be able to enroll in interpreter associations that guarantee the quality standard of interpreters. From the academic year 2022/2023, universities are to offer a Bachelor's degree for interpreter training (Prime Ministerial Decree of January 10, 2022 - OJ No. 81, April 6, 2022). Currently, interpreters also operate online, providing simultaneous interpretation services into and out of LIS, as well as translation of written texts into and out of LIS. In total, the LIS interpreters' associations number about 220 professionals throughout Italy, with a greater representation in the north than in the south.

Employment

Deaf and hard-of-hearing people in Italy are entitled to financial benefits (see communication allowance) and there is a law on job placement, but no support services for job orientation. They are entitled to an interpreter at university and at work, while in private situations they must pay for interpreting services themselves. They can refer to employment centers for guidance on the availability of private companies or participation in public administration competition notices. Disability Managers, who analyze the work situation of people with disabilities, are only available in a few offices. They provide the company with tools to improve the well-being and productivity of the company. However, knowledge about deaf and hard-of-hearing people, their culture, and how to evaluate their abilities is not yet widespread enough, so many employers do not know how to best use their productive skills.

Concluding Remarks

Today, deaf and hard-of-hearing people are developing a great awareness of their language and their identity and are able to express their needs in a variety of settings. They are calling for more disclosure of information about deafness and hard-of-hearingness in general to eliminate biases, and for greater accessibility in LIS. However, they still struggle with difficulties from a technical point of view (finding a job or writing a Curriculum Vitae) and in technological terms, as well as with the lack of IT capacity to meet market requirements. Finally, they also pointed out difficulties in orientation on the labor market, as choosing a job that matches their skills can be crucial for a productive activity and a peaceful life.

3. Structure of the surveys (description) and data collection

3.1 Structure of the online questionnaires

Separate surveys were conducted for each of the three groups (i) Deaf Job seekers including vocational students, (ii) Experts (deaf and hard-of-hearing and hearing experts working with deaf and hard-of-hearing job seekers as customers) and (iii) Employers. Separate surveys in the respective language were conducted in LimeSurvey for the groups of deaf and hard-of-hearing job seekers and experts to allow for both separate and joint analysis. The data was consequently compiled after collection. For the Employers group, a survey was created that allowed the selection of different languages.

- Target groups

a. Deaf Job seekers (including vocational students)

The deaf and hard-of-hearing job seekers were presented with 43 items that covered the topics identity, vocational training and digital skills. The questions were mostly designed in yes/no form. The surveys for job seekers in Germany and Austria were available online from May 1, 2022 to May 31, 2022. In Turkey they were available from May 6, 2022 to June 1, 2022, and in Italy from November 5, 2022 to November 15, 2022.

b. Experts

For experts, 8 items were asked in the form of yes/no questions that covered the areas of profile of deaf and hard-of-hearing learners they work with, teaching materials available in sign language and digital skills of deaf and hard-of-hearing job seekers. Furthermore, questions were presented in matrix form to assess the respective needs. The surveys for experts (Germany, Austria, Turkey) were available online from August 7, 2022 to October 31, 2022, and in Italy from November 18, 2022 to November 24, 2022.

c. Employers

Employers were presented with 7 items designed with both yes/no and matrix questions to estimate their respective needs. The questions covered the topics profile of deaf and hard-of-hearing employees, available training materials for deaf and hard-of-hearing employees and digital skills of deaf and hard-of-hearing employees. The surveys for employers (Germany, Austria, Turkey) were available online from August 7, 2022 to November 24, 2022. In Italy, the surveys were available from November 14, 2022 to November 24, 2022.

d. National Deaf Associations

National Deaf Associations were asked to respond to 19 multiple-choice questions and one open-ended question. The topics of education and vocational training were covered.

Background information was collected on the nature and provision of primary and vocational education for deaf and hard-of-hearing students in each country, as well as data on the assessment of skills acquired by deaf and hard-of-hearing students and job seekers, such as digital or language skills or knowledge of how to apply for jobs. The last open-ended question was targeted for comments and recommendations. The surveys for National Deaf Associations were available online in September and October 2022.

3.2 Data collection procedure

Data collection was conducted via an online survey in different written and sign languages using LimeSurvey. A deaf sign language speaker was selected as the presenter for the filming of each sign language. All presenters were relatively young, so their sign language style was familiar to the target group of young deaf and hard-of-hearing job seekers. For vocational students and experts, written and signed versions were offered in the respective national languages of Germany, Austria, Turkey and Italy. A written version was created for employers.

4. Results

The present section of this report provides four subsections: One section for Job seekers' results, one section for Experts' results, one section for Employers' results, and one section for Deaf Associations. The results are given in absolute numbers or percentages and are interpreted when necessary. For more detailed information, the questionnaires in all languages, as well as descriptive graphs can be found in the appendix.

4.1 Deaf Job seekers and Vocational Students

4.1.1 Germany

4.1.1.1 Procedure of Data Collection (Germany)

Initially, the survey was distributed to teachers at various vocational schools for the deaf and hard-of-hearing in order to disseminate it among deaf and hard-of-hearing youth and job seekers. Depending on their level of education and sign language skills, participants completed the questionnaire alone or with the assistance of teachers.

4.1.1.2 Background Information on Participants (Germany)

In Germany, 36 vocational students participated in the survey. A total of 15 respondents completed it, whereas 21 did not complete it. Among the participants there were 7 females, and 13 males. None of the survey respondents were non-binary or trans.

Concerning the age of the German participants, 15 of them were between 16 and 24 years old, 2 were between 25 and 34, 2 were 35 to 44, and 1 was 45 to 54 years old.

Regarding hearing status, in Germany, 12 participants were deaf, 7 were hard-of-hearing, 6 had cochlear implant(s), 3 wore hearing aids, and 1 participant did not belong to any of these categories. There was no deafblind participant who responded to the survey questions.

1 out of 18 German participants had other disabilities and 17 did not have other disabilities.

In respect of first-time sign language acquisition, 1 participant acquired it at birth, 5 between the ages of 0 and 6 years, 2 between 7 and 12 years, 9 between 13 and 18 years and 2 after the age of 18.

For 13 participants, the first written language was German. However, English, Dari, Urdu and Spanish were also named as first written languages by German survey respondents. There were 17 responses in total, 4 participants did not answer the question about their first written language.

When asked which language they feel most comfortable with, 13 participants indicate they are most comfortable with sign language, another 5 with spoken language. No one chooses the written language option.

In relation to the question about whether the participants were born in the same country they live today, an equal number of participants answer yes and no. Thus, 9 of them state that they were born in the same country where they live today, 9 of them were born in another country, such as Greece, Albania, Slovakia, Afghanistan, Pakistan, Iran, Venezuela and Syria.

In terms of schooling, 8 out of the 17 participants attended a school for the deaf, 2 of them attended mainstream schools without any program for the deaf, likewise 2 participants attended mainstream schools with a program for the deaf, 4 respondents attended schools for hard-of-hearing students, and 1 participant attended another type of school.

9 participants were taught bilingually (both sign and spoken language), 7 orally (spoken language only), and 1 manually (sign language only).

With regard to highest educational attainment, 4 participants completed middle school (up to 10th grade), 1 completed high school (up to 12th or 13th grade), 9 completed vocational school, and 2 participants completed university with a Master's degree.

Only 4 out of 16 German survey respondents had deaf teachers in school, 7 of them had very few deaf teachers, and 5 participants had no deaf teachers at all.

Finally, when evaluating the quality of schooling, 10 out of 16 participants indicate that it was good, 4 describe it as satisfactory and 1 as bad. Only 1 German participant indicate that his/her schooling was very good, no one chooses excellent or not good.

4.1.1.3 Findings

a) Vocational Training

The first section of the survey aimed to assess the quality of vocational training in Germany, which, as emerged, is predominantly rated as good (by 10 out of 16 participants). 1 German participant reports that the quality of his/her vocational training was excellent, no one selects the option very good. This is a significant difference when compared to the overall responses of vocational students, as 32% of respondents overall indicate that the quality of their vocational training was either excellent or very good. In addition, 4 out of 16 German participants indicate that the quality of their vocational training was satisfactory, and 1 participant even describes it as not sufficient.

Nevertheless, more than half of the German respondents (10 out of 16 respondents, i.e., 62.5%) believe that vocational training in Germany provides all the skills required for a job. 6 out of 16 respondents disagree with this statement. Although 10 out of 16 respondents rate the quality of their vocational training as good and further 10 out of 16 respondents note that vocational training in Germany teaches all the skills needed for a job, only 20% of them (3 out

of 15 respondents) report feeling absolutely prepared for a job. In the overall context, this percentage is comparatively low, as more than half of all vocational students surveyed (Germany, Austria, Turkey and Italy) (51%) say they feel absolutely prepared for a job. In Germany, respondents mostly feel prepared in part (73 %).

b) Performance Skills

Looking at self-assessment of performance skills, such as writing skills in vocational training, just under 16% of the vocational students surveyed overall (i.e., Germany, Austria, Turkey and Italy) indicate that their writing skills were excellent, while none of the German participants indicate this type of classification. Overall, 27% of the participants describe their vocational writing skills as very good, while only about 13% (2 out of 15) of the German participants select this option. The majority of German respondents (12 out of 15, or rather 80%) indicate that their writing skills were good, with only 2 participants classifying them as very good. 1 participant indicates that his/her writing skills were satisfactory, no one identifies their writing skills as not satisfactory. Finally, adding up the percentages, 42% of the overall vocational students surveyed report that their writing skills were either excellent or very good, as opposed to only 13% of German students choosing one of these options.

Concerning skills in using computer programs in vocational training, there are again significant differences between the examined self-assessments of vocational students in Germany, Austria, Turkey and Italy, respectively. For example, while in Turkey around 26% (12 out of 46 participants) rate their skills in using computer programs in vocational training as excellent, in Germany it is only 1 out of 15 participants selecting this option. Of those surveyed in Germany, the majority once again classifies their skills in working with computer programs as good (10 out of 15 respondents).

With regard to self-assessment of Internet skills, in Germany, the most popular option is again good (8 out of 15 responses, 53%). In totality, 46% of the survey respondents note that their Internet skills were excellent or very good. In contrast, 20% of the German vocational students, i.e., 3 out of 15, state that their Internet skills were no more than satisfactory.

There are several possible reasons for the differences in the assessment of both the quality of vocational training and performance skills it imparts with adjectives such as excellent or very good on the one hand or good on the other. The data may also reflect cultural differences.

c) Availability and Use of Online Learning Material

As far as the comprehension of the online learning material used in vocational training is concerned, the results in Germany are rather positive. Only 1 out of 15 German respondents suggests that the online learning material in vocational training was not understandable at all, no one selects the option that it was rather difficult to understand. In the overall result for this

question, 17% of respondents indicate that the online learning material provided in vocational training was either rather difficult or not at all to understand.

When it comes to the availability of online learning material in general, however, 19% of vocational students overall did not receive any online learning material at all, with 5 out of 15 among German vocational students.

At this point, the positions of Italy and Turkey are noteworthy, as 40% of Italian respondents (12 out of 30) and 39% of Turkish respondents (17 out of 44) received online learning material in both written and sign language. Moreover, although the German participants had access to online learning material in written language (at least 8 out of 15), only one of them received online learning material in sign language. Although, as noted above, 8 out of 17 of the German vocational students attended a school for the deaf, these numbers were comparatively low.

The need for a broader offering of online learning material in sign language manifests itself in the following two questions: 10 out of 15 German vocational students state that they would absolutely need more online learning material in their sign language. 80% (12 out of 15 respondents) are keen to have more online learning material that enables them to learn new sign language(s) and written language(s).

Especially considering the fact that for 72% of the German vocational students (13 out of 18), German Sign Language is their comfort language, these personal needs should be addressed.

d) General Digital Skills

The survey also aimed to analyze the students' digital skills. Regarding general digital skills, such as reading, 9 out of 15 German participants answer that they like to read books, magazines, blogs, subtitles, etc., and 4 out of 15 indicate that they sometimes do so. Only 2 participants state that they do not like to read. 8 out of 15 German participants declare that they know how to find information on the Internet and how to use online search tools, in contrast to 7 out of 15 German survey participants who answer this question with sometimes. No one denied knowing how to find information online and how to use online search tools. These figures do not differ significantly from the overall average of participants.

Regarding the use of different devices to access the Internet, the majority of German participants report using a smartphone (14 out of 25), which is in line with the overall proportion of respondents (56% of German vocational students, 52% of deaf job seekers and vocational students overall). Only 1 out of 25 German vocational students reports using a tablet. 8 students use a laptop and 2 of the 25 German participants use a desktop computer. Slight differences between the responses in Germany and the responses overall can only be seen in the use of these latter two devices: 32% of German respondents versus 24% of respondents overall use a laptop, and 8% of German respondents versus 17% of respondents overall use a desktop computer.

When asked whether they use social media such as Instagram, Facebook, SnapChat, TikTok or Twitter privately, all 15 German participants answer yes. This result also corresponds to the overall average.

e) Digital Skills: Use of Programs

The assessment of digital skills, such as knowledge of how to use various computer programs, is predominantly positive among the German vocational students. 13 out of 15 German vocational students know how to format documents in Word, 14 out of 15 report they were able to create presentations using digital tools such as PPT, Keynote or online apps. Again, 13 out of 15 of the German participants say they know how to create a PDF, and also 13 out of 15 of the German students say they know how to shoot and edit a video.

However, when it comes to using Excel formulas and spreadsheets, 10 out of 15 of the German respondents say they do not know how to use them. Similarly, when asked if they can use basic graphics programs and create JPG or PNG files for online use, and if they are able to use online communication tools, 40% of German deaf and hard-of-hearing vocational students or job seekers (6 out of 15) answer no in each case. Particularly with regard to the use of Excel formulas and spreadsheets, this is a remarkably high figure compared to the 62% of respondents overall who confirm that they can use Excel formulas and spreadsheets.

Knowledge about accessibility was also examined in this part of the survey. When asked if they know how to use accessibility tools on their smartphone, tablet, laptop or desktop PC, 80% of German respondents answer yes (12 out of 15 respondents). However, only 6 out of 15 of them know what online accessibility is, while 76% of the total of 99 participants from Germany, Austria, Turkey and Italy who answer this question are aware of online accessibility as a term.

f) Digital Literacy: Data Protection

The survey also examined the extent of data protection awareness among vocational students and/or job seekers. For example, only 4 out of 15 of the German participants know what the GDPR is and what they need to be aware of as Internet users. This figure is remarkably low compared to the responses overall, where 52% indicate they know what the GDPR is. Knowledge of how to protect themselves and their devices is again comparatively high at 87% (81% for the overall responses). Furthermore, only 1 out of 15 German respondents say they do not know how to protect their personal data.

g) Topics in Sign Language

Of the 15 German participants, 6 name topics about which they would like more detailed information in sign language. None of the answers relate to our project topic of digital literacy. Nevertheless, interesting answers were given, such as the wish for barrier-free information on the topic of "job applications", "interpreting services in working life" or the comment that knowledge of sign language offers extended communication possibilities.

h) Skills to be Improved

Finally, 6 participants indicate skills they would like to improve in order to have better chances of getting a job. As with the previous question, none of the answers match our project topic. The comments are more of a general nature and also do not always fit the question, which may therefore not have been understood.

4.1.2 Austria

4.1.2.1 Procedure of Data Collection (Austria)

First, the survey was disseminated among the course participants of equalizent (deaf and hard-of-hearing young people and job seekers aged 15 and older). Depending on their level of education and sign language, participants filled out the questionnaire alone or with the support of trainers. In addition, the survey was widely distributed in the Austrian deaf and hard-of-hearing community. Existing contacts to different Deaf Associations were used to ask them to forward the survey. The survey was distributed on the Free Technology Signs and equalizent social media channels.

4.1.2.2 Background Information on Participants (Austria)

In Austria, 31 young people took part in the survey for students or job seekers, of whom 14 completed the questionnaire in full. Since the survey was quite long, there was a high dropout rate. This is a difficulty we encounter again and again when developing surveys: To gather meaningful information, we need to ask numerous questions. However, if the survey takes too long, there is often a high dropout rate. In hindsight, the FTS survey was too long for the target group.

Concerning the gender of the participants, there were 19 females and 7 males. None of the participants were non-binary or trans.

Looking at the age of the Austrian participants, 3 were between 16 and 24 years old, 7 were between 25 and 34, 10 were 35 to 44, 5 were between 45 and 54 and 3 were between 55, and 64 years old.

Concerning hearing status, in Austria, 14 participants were deaf, 5 participants were hard-of-hearing, 2 had cochlear implant(s), 4 wore hearing aids, and 8 did not belong to any of the above categories. There were also no deafblind participants.

3 of the 21 Austrian participants had other disabilities, and 18 did not have other disabilities.

Looking at first-time sign language acquisition, 5 participants acquired it at birth, 6 between 0 and 6 years, 2 between 7 and 12 years, 2 between 13 and 18 years and 9 after the age of 18.

The first written language for 16 participants was German, others were Dari, Turkish and Bulgarian. 5 participants did not answer the question.

14 participants feel most comfortable with sign language, 8 with spoken language and none with written language.

17 participants were born in the country where they live today, 4 in other countries, namely Afghanistan, Syria and Bulgaria.

Concerning their education, 9 participants attended schools for the deaf, 7 attended mainstream schools without any program for the deaf, 2 respondents attended schools for hard-of-hearing students, and 3 of them attended other schools.

3 participants were taught bilingually (both sign and spoken language), 13 orally (spoken language only), and 4 manually (sign language only).

Concerning highest educational attainment, 1 participant completed only elementary school (up to 6th grade), 2 completed middle school (up to 10th grade), 3 completed high school (up to 12th or 13th grade), 5 completed vocational school, 3 completed university with a Bachelor's degree, and 4 completed university with a Master's degree. 1 participant completed no education at all. The large number of participants with university degrees is unusual for the deaf and hard-of-hearing community in Austria. It is possible that this group in particular was more inclined to complete the survey as they see the need for real change in the education system in Austria today, and are active in lobbying and advocating for it.

Only 3 participants had deaf teachers, 2 of them had very few deaf teachers and 14 had no deaf teachers at all.

With regard to rating the quality of schooling, 4 participants report that it was excellent, 2 state that it was very good, 8 rate it as satisfactory and 2 as not good. No one chooses good or bad.

4.1.2.3 Findings

a) Vocational Training

Of the 19 Austrian participants, 3 rate the quality of their vocational training as excellent, 3 as very good, 6 as good, 4 as satisfactory, 2 as not sufficient and 1 as not good at all.

According to 13 participants, vocational training provides the necessary skills for a job and according to 6 it does not.

In Austria, 7 out of 18 participants feel absolutely prepared for a job, 5 feel partially prepared, 3 feel not sufficiently prepared, and 3 do not feel prepared at all.

b) Performance Skills

5 out of 19 Austrian participants rate their writing skills excellent, another 5 as very good, 4 as good, 1 as satisfactory, and 4 as not satisfactory.

As for their knowledge of computer programs, 2 out of 18 participants in Austria rate it as excellent, 5 as very good, 5 as good, 4 as satisfactory, and 2 as not satisfactory.

Internet skills are rated as excellent by 5 out of 16 participants, very good by 5, good by 2, satisfactory by 3, and not satisfactory by 1.

c) Availability and Use of Online Learning Material

No participant had online learning material in sign language only, 4 out of 15 had it in written language, 2 had it in both sign and written language, 9 participants did not receive any online learning material at all in their school education.

In terms of understanding the online learning material, 7 participants always understood it, 3 sometimes understood it, for 2 understanding was rather difficult, and 1 did not understand it at all. These responses are consistent with how participants rate their written skills (rather good).

7 out of 14 participants in Austria report that they definitely need more online learning material in sign language, 4 say “yes, but not necessarily”. Only 3 participants say they would not need it.

When asked if participants would like more online learning material to enables them to learn new sign and written language(s), 9 participants answer definitely yes, and 5 select the option “yes, but not necessarily”.

d) General Digital Skills

With regard to general digital skills, such as reading, in Austria, 11 out of 14 participants answer that they like to read books, journals, blogs, subtitles etc., the remaining 3 participants state that they sometimes do.

Most of the Austrian survey participants among students or job seekers (13 out of 14) know how to find information on the Internet - only 1 participant answers knowing “sometimes” how to find information online. No one gave a negative answer to this question.

In Austria, 9 out of 22 participants use the Internet mainly via a smartphone, 7 via a laptop, 4 via a desktop computer, and only 2 report that they mainly use a tablet to access the Internet.

12 of the Austrian participants use social media privately, only 2 do not.

e) Digital Skills: Use of Programs

As in the other countries, in this section of the survey we asked about specific pre-existing digital skills of deaf and hard-of-hearing students and/or job seekers in Austria. The following list reflects the responses of Austrian survey participants to the question about defined digital skills:

- I can format documents in Word (12 yes, 2 no),
- I know how to use Excel formulas/spreadsheets (11 yes, 3 no),
- I can create presentations using digital tools such as PPT, Keynote or online apps (12 yes, 2 no),
- I know how to create a PDF (11 yes, 3 no),
- I know how to film and edit a video (9 yes, 5 no),
- I know how to use basic graphics apps and how to produce JPG or PNG files for online use (10 yes, 4 no),
- I know how to use online communication tools (8 yes, 6 no),
- I know how to use accessibility tools on my smartphone, tablet, laptop or desktop PC (9 yes, 5 no).

In addition, we asked whether the participants know what online accessibility means. In Austria, 10 students and/or job seekers answer yes and 4 answer no to this question.

f) Digital Literacy: Data Protection

10 of the Austrian participants know what the GDPR is and 4 do not know what it is. 13 know how to protect their personal data and 1 participant does not know. 11 respondents know how to keep themselves and their devices secure, 3 do not.

g) Topics in Sign Language

6 out of 14 participants in Austria state topics about which they want more information in sign language. The answers vary widely and only one is related to our project topic of digital competences: Namely, constant changing technologies and having a hard time to keep up with them.

h) Skills to be Improved

6 out of 14 participants continue to indicate which skills they would like to improve in order to have better chances of getting a job, but only one answer fits our project (multimedia programs). The others are general wishes for improvements in the workplace (this may mean that the question was not understood).

4.1.3 Turkey

4.1.3.1 Procedure of Data Collection

First, the survey was distributed to deaf and hard-of-hearing people who were in contact with the expert who had been selected as the moderator for the filming. Depending on the level of education and sign language, the participants completed the questionnaire alone or with the assistance of the expert. The survey was subsequently distributed to the students of the School for Students with Disabilities, who were all deaf or hard-of-hearing. The School for Students with Disabilities in Eskişehir, Turkey, is integrated into Anadolu University and began operations in the 1993/1994 academic year. It is the first and only school in Turkey to offer tertiary level education to deaf and hard-of-hearing people.

4.1.3.2 Background Information on Participants (Turkey)

In Turkey, the questionnaire was filled out by 75 participants, 36 of whom finished it. 39 participants did not answer all the questions in the survey. This may be for technical reasons or because the questionnaire was too long.

Looking at the gender of the participants who answered the survey, there were 40 females, 23 males, 2 non-binary, 1 trans. 4 of the participants choose not to say.

Concerning the age of the Turkish participants, 3 were under 16, 25 were between 16 and 24, 19 were 25 to 34, 5 were between 35 and 44 years, 4 were 45 to 54, and 7 were between 55 and 64 years old.

When hearing status was assessed, 41 participants reported to be deaf, 11 participants were hard-of-hearing, 2 participants were deafblind, 6 participants had cochlear implant(s), 13 participants wore hearing aids and 1 participant did not belong to any of these categories.

16 of the participants had other disabilities and 37 participants did not have other disabilities.

Regarding first-time sign language acquisition, 11 participants acquired it at birth, 5 participants between 0 and 6 years, 24 participants between 7 and 12 years, 10 participants between 13 and 18 years and 11 participants after the age of 18.

The first written language for 37 participants was Turkish; others were English and German. 21 participants did not answer the question.

38 participants feel most comfortable with sign language, 12 participants with spoken language and 6 participants with written language.

All participants were born in the same country they live in today.

As far as education is concerned, 33 participants attended a school for the deaf, 1 attended a mainstream school without any program for the deaf, 5 attended mainstream schools with a program for the deaf, 6 attended schools for hard-of-hearing students and 9 attended other schools.

31 participants were taught bilingually (both sign and spoken language), 5 orally (spoken language only), and 16 manually (sign language only).

Regarding highest educational attainment, 2 participants completed only elementary school (up to 6th grade), 7 participants completed middle school (up to 10th grade), 14 participants completed high school (up to 12th or 13th grade), 5 participants completed vocational school, 23 participants completed university with a Bachelor's degree and 1 participant did not finish any education.

16 participants had deaf teachers, 17 participants had very few deaf teachers and 16 participants had no deaf teachers at all.

As for the quality of schooling, 9 participants say it was excellent, 10 report that it was very good, 12 state that it was good, 11 rate it as satisfactory and 2 as not good. No one chooses bad.

4.1.3.3 Findings

a) Vocational Training

From the Turkish participants, 6 participants rate the quality of their vocational training as excellent, 10 participants as very good, 16 participants as good, 11 participants as satisfactory, 2 participants as not sufficient, and 1 participant as not good at all.

According to 35 participants, vocational training provides the necessary skills for a job, and according to 11 participants it does not.

31 participants feel absolutely prepared for a job, 10 respondents feel prepared in part and 5 feel prepared not sufficiently.

b) Performance Skills

8 out of 45 Turkish participants rate their writing skills as excellent, another 13 participants as very good, 18 participants as good, and 6 participants as satisfactory.

As for self-assessment of skills in using computer programs, 12 out of 46 participants in Turkey rate them as excellent, 10 participants as very good, 11 participants as good, 9 participants as satisfactory, and 4 participants as not satisfactory.

Their Internet skills are rated as excellent by 8 out of 45 participants, as very good by 13 participants, as good by 11 participants, as satisfactory by 10 participants, and as not satisfactory by 2 participants.

c) Availability and Use of Online Learning Material

13 participants in Turkey report receiving online learning material in sign language only, 8 in written language, 17 in both sign and written language, 6 participants did not receive any online learning material at all during their school education.

As for understanding the online learning material, 11 participants always understood it, 22 sometimes understood it, for 9 understanding was rather difficult, and 2 did not understand it at all.

In Turkey, 29 out of 43 participants absolutely need more online learning material in sign language. 3 respondents choose the option “yes, but not necessarily”, 5 report that they were not sure, and 6 participants state that they do not need it.

When asked if participants would like to see more online learning material that would enable them to learn new sign and written language(s), 30 participants respond "definitely yes", 4 participants respond "yes, but not necessarily", 6 participants are not sure, and 4 participants say they do not need more online learning material.

d) General Digital Skills

24 participants answer that they like to read books, journals, blogs, subtitles etc., 18 state that they sometimes do and 2 answer that they do not like to read.

17 participants know how to find information online and how to use online search tools, 23 answer “sometimes”, and 3 participants answer that they do not know.

35 out of 55 of the Turkish participants mostly access the Internet via smartphone, 12 via laptop, 6 via a desktop computer, and only 2 via a tablet.

40 participants use social media privately, only 3 do not use social media.

e) Digital Skills: Use of Programs

As far as knowledge of using computer programs is concerned, the results in Turkey are as follows:

- I can format documents in Word (34 yes, 9 no),
- I know how to use Excel formulas/spreadsheets (28 yes, 15 no),
- I can create presentations using digital tools such as PPT, Keynote or online apps (28 yes, 10 no),
- I know how to create a PDF (32 yes, 10 no),
- I know how to film and edit a video (27 yes, 13 no),
- I know how to use basic graphics apps and how to produce JPG or PNG files for online use (13 yes, 26 no),
- I know how to use online communication tools (25 yes, 14 no),
- I know how to use accessibility tools on my smartphone, tablet, laptop or desktop PC (32 yes, 9 no).

We also asked whether the participants know what online accessibility means. In Turkey, 35 out of 40 participants answer that they do know, and only 5 respondents answer that they do not know what online accessibility means.

f) Digital Literacy: Data protection

28 of the Turkish participants know what the GDPR is, and 11 do not know. 29 know how to protect their personal data, 9 participants do not. 28 participants in Turkey know how to keep themselves and their devices secure, 9 participants do not.

g) Topics in Sign Language

15 participants state topics about which they want more information in sign language. 2 participants state that they want to get more information about technological concepts.

As in Austria, the answers are very different and only two are connected to our project topic of digital competences: The keywords “new technological concepts” were mentioned, as well as the desire to learn more about digital topics.

h) Skills to be improved

In Turkey, 18 participants continue to indicate skills they would like to improve in order to have better chances of getting a job. The participants state that they attach importance to digital skills in subjects such as Internet use, writing, and online marketing.

4.1.4 Italy

4.1.4.1 Procedure of Data Collection

In Italy, the Italian Sign Language videos were made by a team of industry experts, both hearing and deaf and hard-of-hearing, at the Deaf State Institute of Rome - ISSR.

The survey was sent to former deaf and hard-of-hearing students of the State Institute of Specialized Education for the Deaf – Antonio Magarotto. Antonio Magarotto was the first Rector of the educational complex for the deaf and hard-of-hearing in Rome and the first Director of the ENS Professional Institute in Rome.

The students of the ISISS Magarotto are Italian and foreign deaf and hard-of-hearing students, as well as Italian and foreign hearing students with different backgrounds and needs.

4.1.4.2 Background Information on Participants (Italy)

57 deaf and hard-of-hearing students participated in the Italian survey, 30 of them completed it and 27 left it incomplete, probably due to the length of the questionnaire.

From the data collected on the gender of the participants, it appears that:

- 10 participants were female;
- 17 participants were male;
- 1 participant was non-binary;
- 2 participants preferred not to answer.

The age of the participants ranged from 16 to 54 years:

- 22 participants were between 16 and 24 years old;

- 4 participants were between 25 and 34 years old;
- 2 participants were between 35 and 44 years old;
- 2 participants were between 45 and 54 years old.

90% of the participants (27 of 30) declared to be deaf, 2 participants were hard-of-hearing, and 1 respondent wore hearing aids.

Regarding the acquisition of LIS:

- 17 respondents indicated that they learned it spontaneously from birth;
- 4 respondents learned it between the ages of 0 and 6 years;
- 6 respondents learned it between the ages of 7 and 12 years;
- 2 respondents learned it between the ages of 13 and 18 years;
- 1 respondent learned it after the age of 18 years.

For all 30 participants, their first written language was Italian, while the other languages known by 26 respondents were English, Spanish and French. 4 participants did not answer the question.

90% of participants (27 out of 30 respondents) feel most comfortable using sign language, 2 respondents using spoken language, and 1 respondent says that the written language is their comfort language.

23 out of 30 respondents (77%) report that they were born and live in Italy, while 3 respondents state that they were born in another country than Italy. 4 participants did not answer the question.

Only 3 participants declare to have another disability in addition to their deafness or hard-of-hearingness.

When asked about their education:

- 20 participants attended a school for the deaf (67%);
- 5 participants attended mainstream schools with a program for deaf (17%);
- 3 participants attended mainstream schools without any program for deaf (10%);
- 1 participant attended a school for hard-of-hearing students (3%);
- 1 participant attended another type of school (3%).

25 respondents report receiving bilingual schooling (both sign and spoken language), 4 respondents had oral schooling (spoken language only), and only 1 respondent had schooling in sign language.

Data relating to highest educational attainment show that:

- 2 respondents completed middle school;
- 23 respondents completed high school;
- 2 respondents completed vocational school;
- 2 respondents completed university with a Bachelor’s degree;

- 1 respondent completed university with a Master's degree.

Only 20% of the participants (6 out of 30) had deaf teachers, 43% (13 participants) had very few deaf teachers, and 37% (11 participants) had no deaf teachers at all.

The quality of the schooling received was judged as follows:

- 4 respondents rate it as excellent (13%);
- 12 respondents rate it as very good (40%);
- 8 respondents rate it as good (27%);
- 3 respondents rate it as satisfactory (10%);
- 3 respondents rate it as bad (10%).

4.1.4.3 Findings

a) Vocational Training

The quality of vocational training was assessed by the respondents as follows:

- 12 respondents rate it as good (40%);
- 10 respondents rate it as very good (33%);
- 4 respondents rate it as satisfactory (13%);
- 2 respondents rate it as excellent (7%);
- 1 respondent rates it as not sufficient (3%);
- 1 respondent rates it as not good at all (3%).

According to 22 out of the 30 Italian participants, the vocational training received provides all the skills and abilities necessary to work, while for 8 participants it does not. 15 respondents feel absolutely prepared to face a job, 13 respondents feel prepared in part and 2 of them do not feel sufficiently prepared.

b) Performance Skills

The Italian participants assessed their skills learned during the vocational training as follows:

Writing Skills:
- 11 respondents rate their writing skills as good (37%);
- 9 respondents rate their writing skills as very good (30%);
- 4 respondents rate their writing skills as excellent (13%);
- 4 respondents rate their writing skills as not satisfactory (13%);
- 2 respondents rate their writing skills as satisfactory (7%).

Computer skills:
- 8 respondents rate their computer skills as very good (27%);
- 8 respondents rate their computer skills as good (27%);

- 7 respondents rate their computer skills as excellent (23%);
- 4 respondents rate their computer skills as not satisfactory (13%);
- 3 respondents rate their computer skills as satisfactory (10%).

Internet Skills:
- 11 respondents rate their Internet skills as good (37%);
- 10 respondents rate their Internet skills as very good (33%);
- 4 respondents rate their Internet skills as satisfactory (13%);
- 3 respondents rate their Internet skills as excellent (10%);
- 2 respondents rate their Internet skills as not satisfactory (7%).

c) Availability and Use of Online Learning Material

12 respondents received online learning material in both sign and written language, 9 respondents received it in written language only, and another 9 respondents received it in sign language only.

Regarding the comprehensibility of the online learning material received in the school education, 19 of the 30 Italian respondents indicate that it was sometimes understandable. For only 9 respondents the online learning material was always understandable, 2 participants state that it was rather difficult to understand.

When asked if they would like to see more online learning material in sign language, in Italy, 23 of the respondents answer "yes." The remaining 6 respondents believe that more online learning material in sign language is needed, but not necessarily. Only 1 respondent indicates that such a need does not exist for them.

24 of the 30 respondents who answered the question about whether they would like more online learning material that enables them to learn new sign language(s) and written language(s) say "definitely yes." Only 3 respondents say they would need it, but not necessarily. The rest were not sure and 1 respondent did not give an answer.

A need for more online learning material in sign language is evident.

d) General Digital Skills

19 respondents in Italy report that they like to read, 11 report that they sometimes like to read.

In general, the majority of participants (20 out of 30) believe that they are able to search for information online and use search engines, while 9 respondents indicate that they only sometimes know how to search for information on the Internet. 1 participant did not answer the question.

Most participants use their smartphone to access the Internet (25 out of 30). 16 of them use desktop PCs, 12 a laptop and 6 participants navigate with a tablet.

90% of participants (27 out of 30) use social media (Instagram, Facebook, Snapchat, Tik Tok, Twitter) for private purposes, while only 10% (3 respondents) do not.

e) Digital Skills: Use of Programs

Self-assessment of knowledge of computer program use among deaf students and/or job seekers in Italy revealed the following results:

- I can format documents in Word (24 yes, 6 no),
- I know how to use Excel formulas/spreadsheets (19 yes, 11 no),
- I can create presentations using digital tools such as PPT, Keynote or online apps (24 yes, 6 no),
- I know how to create a PDF (26 yes, 3 no, 1 participant did not answer the question),
- I know how to film and edit a video (24 yes, 6 no),
- I know how to use basic graphics apps and how to produce JPG or PNG files for online use (14 yes, 16 no),
- I know how to use online communication tools (19 yes, 9 no, 2 participants did not answer the question),
- I know how to use accessibility tools on my smartphone, tablet, laptop or desktop PC (27 yes, 3 no).

Regarding knowledge of the term "online accessibility", in Italy 24 participants know what it means and 6 participants do not.

f) Digital Literacy: Data protection

In Italy, 21 out of 30 respondents do not know what the GDPR is and do not know how to behave as an Internet user, while 9 respondents affirm the opposite.

On the other hand, 25 respondents state that they know how to protect their personal data. Only 4 respondents do not know how to protect their data, while 1 respondent did not answer the question.

26 respondents say that they know how to ensure their own security and that of their device, while 4 respondents say that they do not know how to do it.

g) Topics in Sign Language

Only 12 of the 30 participants who completed the entire questionnaire indicate topics about which they would like more information in sign language, citing the topics of video editing and learning International Sign Language as interesting.

h) Skills to be Improved

21 participants indicate skills they want to improve in order to have better chances of finding a job. For example, they would like to improve their IT skills. In other statements, there was a desire for greater dissemination of information about deafness and hard-of-hearingness in general to reduce prejudice, or a desire for better access in LIS. In addition, participants were hoping for the establishment of online courses in International Sign Language and American Sign Language.

4.1.5 Total number

4.1.5.1 Background Information on Participants (overall)

In the overall context, 199 vocational students and job seekers participated in the survey. 95 of the respondents finished the questionnaire, while 104 did not finish it. There were 60 male participants and 76 females. 3 respondents were non-binary and 1 participant was trans.

With regard to the age of the survey respondents, 3 were under 16 years old, 65 were between 16 and 24, 32 were between 25 and 34, 19 were between 35 and 44, 12 were 45 to 54, and 10 were between 55 and 64 years old.

Concerning hearing status, in totality, 94 of the respondents were deaf, 25 were hard-of-hearing, 2 were deafblind, 14 had cochlear implant(s), 30 wore hearing aids, and 10 did not belong to any of the above categories.

20 respondents had other disabilities, and 72 had no other disabilities.

In terms of first-time sign language acquisition, 34 participants acquired it at birth, 20 between 0 and 6 years, 28 between 7 and 12 years, 23 between 13 and 18 years, and 23 respondents acquired sign language after the age of 18.

On the question about their first written language 103 participants gave an answer. Other first written languages are mentioned in the previous relevant sections.

As for the comfort language, 92 respondents report that they feel most comfortable with sign language, another 27 with spoken language, only 7 participants state that they feel most comfortable with written language.

68%, i.e., 81 respondents were born in the same country as they live today. 38 participants were born in another country. Again, other home countries are mentioned above.

70 out of 122 respondents attended a school for the deaf, 13 respondents attended mainstream schools without any program for the deaf, 12 attended mainstream schools with a program for the deaf, 13 respondents attended a school for hard-of-hearing students, and 14 attended another type of school.

68 respondents were taught bilingually (both sign and spoken language), 29 orally (spoken language only), and 22 manually (sign language only).

Regarding highest educational attainment, 3 respondents completed only elementary school (up to 6th grade), 15 completed middle school (up to 10th grade), 41 completed high school (up to 12th or 13th grade), 21 completed vocational school, 28 participants completed university with a Bachelor's degree, and 7 respondents completed university with a Master's degree. 2 participants did not complete any education.

29 survey respondents had deaf teachers in school, 39 of them had very few deaf teachers, and 46 participants had no deaf teachers at all.

When evaluating the quality of schooling, 17 respondents report that it was excellent, 26 rate it as very good, 20 as good, 26 as satisfactory, 4 as not good, and 4 participants rates the quality of his/her school education as bad.

4.1.5.2 Findings

a) Vocational Training

As far as the evaluation of vocational training is concerned, 12 respondents rate it as excellent, 23 as very good, 44 as good, 23 as satisfactory, 6 as not sufficient, and 3 respondents rate the quality of their vocational training as not good at all.

80 participants suggest that vocational training provides all necessary skills for a job, while 31 disagree.

56 survey respondents say they do feel absolutely prepared for a job. 39 feel partially prepared. 10 participants feel prepared not sufficiently, and 4 do not feel prepared at all.

b) Performance Skills

When it comes to evaluating their writing skills in vocational training, 17 respondents claim that they were excellent, 29 state that they were very good, 45 rate them as good, 10 as satisfactory, and 8 as not satisfactory.

Regarding skills in working with computer programs, 22 respondents report that their skills were excellent, 25 rate them as very good and 34 as good. However, 18 respondents indicate that their skills in working with computer programs in vocational training were only satisfactory, again 10 rate them as not satisfactory.

As far as Internet skills are concerned, 17 participants rate them as excellent, 31 as very good, and 32 as good. 20 respondents overall indicate that their Internet skills in vocational training were satisfactory, and 5 evaluate them as not satisfactory.

c) Availability and Use of Online Learning Material

23 survey respondents received online learning material in sign language, another 29 received it in written language. 32 participants received online learning material in both sign and written language. However, 20 respondents indicate that they did not receive any online learning material.

As for the understandability of online learning material provided in vocational training, in the overall context, 33 respondents state that it was always understandable. 52 respondents feel that it was sometimes. 13 participants report that online learning material was rather difficult to understand, and another 4 participants indicate that it was not at all understandable.

When asked if they need more online learning material in their sign language, in the overall results, 69 respondents say “yes, absolutely”. According to 13 respondents they would need it, but not quite necessarily. 8 participants were not sure, and 12 state that they would not need more online learning material in their sign language.

Again, when asked if they would like to have more online learning material which enables them to learn new sign language(s) and written language(s), 75 respondents say “definitely yes”. 13 respondents select the option “yes, but not quite necessarily”. 9 were not sure and only 5 say that they would not need any online learning material to learn new sign or written language(s).

d) General Digital Skills

In the overall context, 63 of the survey respondents say that they like to read. Another 36 of them like to read sometimes, and 4 do not like to read.

The majority of respondents (58 out of 101) know how to find information online and how to use online search tools. 40 participants sometimes do know. Only 3 out of 101 do not know.

When using the Internet, 52% (83 out of 161 participants) mostly use a smartphone. 39 respondents report that they primarily use a laptop, another 28 respondents say that they would use a desktop computer. Only 11 participants indicate that they would use a tablet.

94 out of the total of 102 participants report that they use social media such as Instagram or Facebook. Only 8 say they do not use social media.

e) Digital Skills: Use of Programs

The results for knowledge of computer programs in the overall context are as follows:

- I can format documents in Word (83 yes, 19 no),
- I know how to use Excel formulas/spreadsheets (63 yes, 39 no),
- I can create presentations using digital tools such as PPT, Keynote or online apps (78 yes, 19 no),
- I know how to create a PDF (82 yes, 18 no),
- I know how to film and edit a video (73 yes, 26 no),
- I know how to use basic graphics apps and how to produce JPG or PNG files for online use (46 yes, 52 no),
- I know how to use online communication tools (61 yes, 35 no),
- I know how to use accessibility tools on my smartphone, tablet, laptop or desktop PC (80 yes, 20 no).

75 out of the total of 99 respondents indicate that they know what online accessibility is, 24 say they do not know.

f) Digital Literacy: Data Protection

In the overall results, 51 respondents say they know what the GDPR is and what they need to consider as Internet users. 47 respondents say they do not know.

81 of the students and/or job seekers surveyed indicate that they know how to protect their personal data, another 15 say they do not know.

78 of them indicate that they know how to keep themselves and their devices secure. 18 report that they do not know.

g) Topics in Sign Language

A total of 39 answers was collected on the question on which topics participants would like to have more in depth information in sign language. 56 participants did not answer the question. The results are mentioned above.

h) Skills to be Improved

When asked which skills they would like to improve in order to have better chances of getting a job, 51 respondents gave an answer, while 44 did not. As for the topics in sign language, the results are mentioned in the previous relevant sections.

4.1.6 Summary

Overall, the majority of participants were female. Only in Germany and Italy did more male than female respondents take part in the survey. The German and the Italian participants were younger on average than the Austrian and Turkish participants: 75% of the German and 73% of the Italian participants were between 16 and 24 years old. In total, more than half of the participants (54%) were deaf. It is noteworthy that 30% of the Turkish participants had other disabilities. In Germany, Austria and Italy, the proportion of participants with multiple disabilities was significantly lower.

Furthermore, it is striking that most Italian participants indicate that they acquired their sign language early, i.e., spontaneously from birth (57% of respondents). Most Turkish participants state that they acquired their sign language between the ages of 7 and 12 (39% of respondents). Most German participants report an age of 13 to 18 years at first-time sign language acquisition (47%); in Austria, most respondents acquired their sign language after the age of 18 (36%).

For the majority in all four countries, the comfort language is sign language. It is interesting to note, however, that 11% of the Turkish participants state the written language as their comfort language, while only 1 respondent in Italy and no one in Germany and Austria indicate written language as their comfort language.

While in Turkey no participant states a migration background, in Germany half say they were born in a country other than the one they live in today. In Austria, the figure is 19%, in Italy, 10%.

In Italy, 83% of respondents received schooling in both sign and spoken language. In Germany and Turkey, the number is lower, but still the majority of respondents (53% and 60% respectively) report having received bilingual education (both sign language and spoken language). In Austria, 65% of respondents report having received oral instruction only (spoken language only).

Regarding the data on the highest level of schooling, it is striking that 44% of the Turkish respondents have a Bachelor's degree. In Italy, 77% of respondents report that they have completed high school. In Germany, 56% state that they have completed vocational school, while the answers in Austria are more broadly distributed among the options: elementary school, middle school, high school, vocational school, university (BA), university (MA) and no educational attainment at all.

It is also notable that only very few of the Austrian participants had deaf teachers. 74% answer the question in the negative, while the answers in Germany, Italy and Turkey were slightly better. Nevertheless, also here it is mainly stated to have had very few deaf teachers. Overall, deaf teachers were rarely present in class in all four countries: in Germany, 25% of respondents report having had deaf, in Austria 16%, in Italy 20%, and in Turkey 33%.

Regarding the assessment of the quality of school education in general and vocational training, it is noteworthy that the quality of general school education in Austria is again rated rather poorly: 47% rate it only as satisfactory. However, this is remarkable, as the quality of Austrian vocational training is rated better here on average than the quality of schooling in general. The quality of vocational training in Austria, as in Germany, Turkey and Italy is predominantly rated as good.

When asked whether vocational training provides all the skills needed for a job, 76% of Turkish respondents, 73% of Italian respondents, 68% of Austrian respondents and 63% of German respondents answer yes.

Turkey's position is particularly remarkable when it comes to the question of whether participants feel prepared for a job, insofar as 67% of the respondents answer "yes, absolutely" here. As for Italian respondents, still 50% say they feel absolutely prepared for a job. In Germany, 73% of respondents feel only partially prepared, while the results in Austria are rather negative. Here, one third answer "not sufficiently" or "not at all".

Written language skills, Internet skills, and computer program skills are assessed by respondents as predominantly good in the overall context, with a slightly lower rating for the former.

Concerning the availability of online learning material in sign language, again the position of Turkey as well as the position of Italy should be noted. While in Germany every third respondent, and in Austria even 60%, state that they did not receive any online learning material, in Turkey it is 39% and in Italy 40% of the respondents who had learning material available in their school both in written and in sign language.

The desire for a wider range of online learning material in sign language and also for learning material that enables learning new sign languages and written languages is evident in all four countries. In the overall context, 68% answer "absolutely" to the first question, 74% "definitely yes" to the second question.

When it comes to digital skills, such as using various computer programs, it can generally be said that the majority of respondents in all four countries can, for example, format Word documents, create PDFs, create presentations using digital tools such as PPT, Keynote or online apps, film and edit a video, or use online communication tools. Only with regard to two questions can a significant difference be determined: When asked if they can use basic graphics apps and produce JPG or PNG files for online use, two-thirds of the Turkish respondents and more than half of the Italian respondents (53%) answer no. The Turkish and Italian respondents demonstrate poorer knowledge here than the German and Austrian respondents. In Germany, the results on Excel skills stand out once again. Here, two-thirds of respondents say they do not know how to use Excel formulas and spreadsheets.

Also, when asked if they know what online accessibility means, 60% of German respondents say they do not know, which is significantly lower than the results of Austrian, Italian and Turkish participants. This result is remarkable in that the question "I know how to use accessibility tools on my smartphone, tablet, laptop or desktop PC" is answered "yes" by the majority, as is also the case in Austria, Italy and Turkey.

The vast majority of all participants state that they know how to protect their personal data and how to keep themselves and their devices secure. When asked what the GDPR is and what you have to consider as an Internet user, more German and Italian participants answer no in comparison.

4.2 Experts

4.2.1 Germany

4.2.1.1 Procedure of Data Collection

The survey was distributed among the social counselors of the Integration/Inclusion Specialist Services. Additionally, the survey was disseminated within deaf teachers working in vocational schools. The survey was available online from 07.08.2022 to 22.09.2022.

4.2.1.2 Background Information on Participants (Germany)

The target group for this survey were deaf, hard-of-hearing and hearing experts working with deaf and hard-of-hearing youths and/or job seekers (e.g., social workers, trainers, job coaches). Nine persons participated in the German survey and filled out the questionnaire completely. Another seven persons took part in the survey but did not complete it.

4.2.1.3 Findings

a) Profile of Deaf and Hard-of-hearing Students and/or Job seekers (Germany)

The first part of the survey for the experts consisted of questions designed to describe the profile of the deaf and hard-of-hearing students and/or job seekers our respondents work with.

33% (3 out of 9 respondents) of the German respondents report that their deaf and hard-of-hearing students and/or job seekers have recently finished school, the remaining 67% answer in the negative. 89% of respondents (8 out of 9) state that their deaf and hard-of-hearing students and/or job seekers they work with do not yet have a job, 11% that they do.

With regard to migration background, 78% (7 out of 9 respondents) state that their students and/or job seekers have a migration background (i.e., they and/or their parents were not born in Germany), the remaining 22% report that their students and/or job seekers do not have a migration background.

56% of respondents (5 out of 9 respondents) work with students and/or job seekers with multiple disabilities, 44% (4 out of 9 respondents) work with students and/or job seekers who are only deaf or hard-of-hearing.

All German respondents indicate that their students' and/or job seekers' main form of communication is sign language. Nevertheless, when asked if their students' and/or job seekers' main form of communication was written language, one respondent answers "yes" (11%), the remaining 8 respondents, i.e., 89% answer "no". Maybe the question was not that easy to answer.

In any case, the answers to the last two questions clearly show that it is necessary to provide deaf and hard-of-hearing students and job seekers with information in sign language. Written language alone is not sufficient.

When asked what type of school their students and/or job seekers attended, all 9 respondents indicate that their students attended a school for the deaf. However, there is also one respondent who states that their students and/or job seekers attend a mainstream school. Possibly the question was not clear enough or it was difficult to answer "yes" or "no".

b) Preparedness for Vocational Training (Germany)

The next section of the survey was about how the experts assess the preparedness of their students and/or job seekers for vocational training.

The first two questions were related to the language skills of the deaf and hard-of-hearing students and/or job seekers:

89% of the experts (8 out of 9 respondents) claim that their students and/or job seekers have sufficient sign language skills to participate in vocational training, the remaining respondent denies this.

None of the respondents indicate that their students and/or job seekers have sufficient writing and reading skills. All 9 respondents indicate that their students and/or job seekers do not have sufficient written language skills.

The following questions addressed the digital skills of deaf and hard-of-hearing students and/or job seekers:

89% of respondents (again, 8 out of 9) report that their students and/or job seekers have sufficient digital skills (use of the Internet). 1 respondent answers in the negative.

As for digital communication skills via e-mail or video call, 44% (4 out of 9 respondents) believe their students and/or job seekers have sufficient skills. The remaining 56% say they do not.

The further questions in this section addressed other skills needed to participate in vocational training:

11% (1 respondent) indicate that their students and/or job seekers have sufficient video production skills to attend vocational training. 56% (5 respondents) indicate that their students and/or job seekers do not, and 33% (3 respondents) are unknown (as answers were not provided).

44% of respondents (4 out of 9) report that their students and/or job seekers have sufficient language skills to participate in vocational training, while other 44% answer in the negative, and 1 respondent did not give an answer.

Regarding knowledge on the subject of vocational training, none of the respondents indicate that their students and/or job seekers have sufficient knowledge, 89% (8 out of 9 respondents) indicate that they do not. 1 respondent did not provide an answer.

Finally, we asked whether our respondents' students and/or job seekers know how to use online interpretation services. 33% (3 out of 9 respondents) answer in the affirmative, the remaining 67% (6 respondents) answer in the negative.

c) Availability of Accessible Teaching Materials (Germany)

None of the German respondents report that video material with sign language translation is generally available. 89% (8 out of 9 respondents) report that it is not, the remaining is unknown (as no answer was given).

On the question whether video materials with subtitles were generally available, 67% (6 out of 9 respondents) indicate they are available and 22% (2 respondents) indicate they are not available. 1 participant did not give an answer to the question.

89% (8 out of 9 respondents) indicate that written texts are available, no one says that they are not. 1 answer is unknown.

Regarding the availability of written texts in easy language, 33% (3 out of 9 respondents) indicate that they are available and 44% (4 out of 9 respondents) report that they are not available. 2 participants did not answer the question.

As for the general availability of signed versions of easy-to-read texts, again no one says they are available. 78% (7out of 9 respondents) say they are not available, the remaining 22% (2 respondents) did not answer the question.

The last two questions were about instructors in vocational education.

44% of respondents (4 out of 9) indicate that instructors in vocational education have sufficient sign language skills, 11% (1 respondent) indicate that they do not. 44% (4 respondents) did not provide an answer.

When asked if instructors are aware of the needs of deaf and hard-of-hearing learners and adapt their instruction accordingly, 33% (3 out of 9 respondents) answer “yes” and 22% (2 respondents) answer “no”. The remaining respondents are unknown (as answers were not provided).

d) Digital Skills of Deaf and Hard-of-hearing Students and/or Job seekers (Germany)

In the first question of this section, we asked the experts to rate the digital skills of their average deaf or hard-of-hearing student and/or job seeker they work with on a scale from 1 (very good) to 5 (no skills at all). The average rating for Germany is as follows:

- Social media 1.5
- Presentation programs 2.38
- Word processing programs 2.63
- PDF 2.67
- Cloud and data storage 2.86
- Using sign language interpretation online 3
- Professional communication tools 3.22
- Online accessibility 3.25
- Basic graphics 3.33
- Internet security 3.33
- Online research 3.56
- GDPR 3.57
- Professional online self-presentation 3.89
- Video production 4
- Copyright 4.14
- Spreadsheet programs 4.38

Our experts rate the digital skills of their students or the job seekers they work with as good in the following areas: Presentation programs (2.38) and Social media (1.5). The lowest ratings are given in the following areas: Professional online self-presentation (3.89), Video production (4), Copyright (4.14), and Spreadsheet programs (4.38). For the remaining skills, respondents give their students an average score (between 2.63 and 3.57).

In the last question, we asked the experts about the importance of certain digital skills that help deaf and hard-of-hearing students or job seekers improve their chances of finding a job. Respondents were asked to rate the importance on a scale of 1 (this skill is not important at all) to 10 (this skill is very important). Here you can see the average ratings:

- PDF 9.67
- Word processing programs 9.67
- Online research 8.89
- Professional communication tools 8.89
- Professional online self-presentation 8.89
- GDPR 8.78
- Presentation programs 8.75
- Using sign language interpretation online 8.67
- Spreadsheet programs 8.33
- Internet security 8.22
- Copyright 8.11
- Online accessibility 7.11
- Cloud and data storage 6.56
- Basic graphics 5.25
- Social media 5.11
- Video production 4.56

As shown, the most important skills for experts in Germany are PDF (9.67) and Word processing programs (9.67). In addition, Online research (8.89), Professional communication tools (8.89), and Professional online self-presentation (8.89) are considered rather important digital skills. Basic graphics (5.25), Social media (5.11), and Video production (4.56) are considered less important.

4.2.2 Austria

4.2.2.1 Procedure of Data Collection

On the one hand, the survey was distributed among the employees of equalizent (deaf and hard-of-hearing and hearing trainers of deaf and hard-of-hearing youths and deaf and hard-of-hearing job seekers). Additionally, the survey was disseminated within the Austrian deaf and hard-of-hearing community. Existing contacts to different Deaf Associations were used to ask them to forward the survey. The survey was available online from 07.08.2022 to 22.09.2022.

4.2.2.2 Background Information on Participants (Austria)

The target group for this survey were deaf and hard-of-hearing and hearing experts working with deaf and hard-of-hearing youths and job seekers (e.g., social workers, trainers, job coaches). 16 persons participated in the Austrian survey, 9 of them filled out the questionnaire completely.

The rather high dropout rate is normal on the one hand, but on the other hand we received feedback that it was difficult for some participants to complete the questionnaire because there were mainly yes and no questions. These two response options seemed insufficient to answer questions such as, "Did your customers recently finish school?". Participants would have liked more varied response options such as "all," "most," "many," "few," and "none." This could also explain the relatively high percentage of respondents who choose "no answer" for many questions.

4.2.2.3 Findings

a) Profile of Deaf and Hard-of-hearing Students and/or Job seekers (Austria)

44% of the Austrian respondents (4 out of 9) state that the deaf and hard-of-hearing people they work with have recently finished school, 33% (3 out of 9) answer in the negative, and 22% (2 out of 9) are unknown (as answers were not provided).

67% of respondents (6 out of 9) answer that the people in their target group do not yet have a job, 11% (1 respondent) that they do. The remaining 22% (2 respondents) did not answer the questions.

Regarding migration background, again, 67% state that their deaf students and/or job seekers have a migration background. There were no respondents who work exclusively with deaf and hard-of-hearing students and/or job seekers without a migration background. 33% (3 respondents) are unknown.

33% of respondents (3 out of 9) work with persons with multiple disabilities, 44% (4 out of 9) work with students and/or job seekers who are only deaf or hard-of-hearing. 22% (2 respondents) did not provide an answer.

67% (6 out of 9 respondents) work with deaf and hard-of-hearing persons whose main form of communication is sign language, the other 33% (3 respondents) are unknown (as answers were not provided).

None of the respondents work with people who use written language as their main form of communication. 78% of respondents (7 out of 9) answer in the negative that written language is the main form of communication for the persons of their target group. 22% are unknown.

The answers to the last two questions clearly show, as in Germany, that it is necessary to provide deaf and hard-of-hearing students and job seekers with information in sign language and that written language on its own is not a sufficient means.

When asked what type of schools their students and/or job seekers attended, 67% of respondents (6 out of 9) indicate that they attend schools for the deaf. However, as in Germany, 44% of respondents (4 out of 9) in Austria state that the students and/or job seekers

they work with attend a mainstream school. As mentioned at the beginning, the response options do not seem to have been sufficient.

b) Preparedness for Vocational Training (Austria)

The assessment of the language skills of their deaf and hard-of-hearing students and/or job seekers yielded the following results among the Austrian experts:

33% of the experts (3 out of 9) claim that the students and/or job seekers they work with have sufficient sign language skills to attend vocational training. 22% (2 out of 9) negate this. 44% (4 responses) are unknown (as answers were not provided).

None of the respondents claim that their students and/or job seekers have sufficient written language competence. 78% (7 out of 9 respondents) answer in the negative and the remaining did not answer the question.

The answers to these two questions once again demonstrate the urgent need for VET training materials in sign language for deaf and hard-of-hearing students and job seekers.

As for the digital skills of deaf and hard-of-hearing students and/or job seekers, the results in Austria are as follows:

22% of respondents (2 out of 9) indicate that the students and/or job seekers they work with have sufficient digital skills (use of the Internet). 56% (5 out of 9) answer in the negative and the remaining 22% are unknown.

As for digital communication skills via e-mail or video call, only 11% (1 out of 9 respondents) feel their deaf students and/or job seekers have sufficient skills. 56% (5 out of 9) specify they do not, and 33% (3 out of 9) did not answer the question.

As a conclusion from the digital skills questions, we see a clear need for training materials on basic transferable digital skills for deaf and hard-of-hearing students and job seekers.

The questions relating to other skills required for attending vocational training produced the following results in Austria:

22% (2 out of 9 respondents) report that their deaf students and/or job seekers have sufficient video production skills to attend vocational training, 44% (4 out of 9) indicate that they do not, and for the remaining no answers were provided.

33% of respondents (3 out of 9) state that the deaf students or job seekers they work with have sufficient language skills to participate in vocational training, 44% (4 out of 9) answer in the negative. 22% (2 out of 9) did not answer the question.

With regard to knowledge on the subject of vocational training, none of the respondents indicate that their deaf youths have sufficient knowledge; on the contrary, 78% (7 out of 9 respondents) state that they do not. The remaining did not give an answer.

We finally asked whether the respondents' students and/or job seekers know how to use online interpreting services. 22% (2 out of 9 respondents) answer in the affirmative, 44% (4 out of 9 respondents) in the negative, and for the remainder no answers were provided.

c) Availability of Accessible Teaching Materials (Austria)

Only 22% of respondents (2 out of 9) indicate that video material with sign language translation is generally available, and 44% (4 out of 9) answer that it is not. 3 respondents did not answer the question.

For video materials with subtitles, 33% (3 out of 9 respondents) indicate they are available and 33% indicate they are not available. The remaining third did not provide an answer.

67% (6 out of 9 respondents) report that written texts are available, with only 11% (1 respondent) answering in the negative.

For the availability of written texts in easy language, 11% (1 respondent) indicate that they are available and 44% (4 respondents) report that they are not available. Again, 44% did not give an answer.

With respect to the availability of signed versions of easy-to-read texts, again 11% (1 respondent) say they are available and 44% (4 respondents) say they are not available. The remaining 44% (4 out of 9 respondents) did not answer the question.

The last two questions, which concerned instructors in vocational training, delivered the following results in Austria:

44% of the respondents (4 out of 9) report that the instructors in vocational training have sufficient sign language competences, 33% (3 out of 9) report that this is not the case. The percentage of sign language competent instructors seems to be quite high. The reason for this could be that we conducted the survey in organizations that provide vocational training for deaf and hard-of-hearing job seekers and where hearing and deaf and hard-of-hearing staff with fluent sign language skills are represented. On average, the percentage of sign language competent instructors in Austria is probably much lower.

In response to the question of whether instructors are aware of the needs of deaf and hard-of-hearing learners and adapt their instruction accordingly, 33% (3 out of 9 respondents) respond “yes” and 33% (3 out of 9 respondents) respond “no”. The remaining third did not give an answer to this question.

d) Digital Skills of Deaf and Hard-of-hearing Students and/or Job seekers (Austria)

Experts in Austria were now asked to rate the digital skills of their average deaf or hard-of-hearing person they work with on a scale of 1 (very good) to 5 (no skills at all). The average rating for Austria is as follows:

- Social media 1.83
- Using sign language interpretation online 2.83
- Presentation programs 3
- Word processing programs 3
- Online research 3.14
- Cloud and data storage 3.17
- Professional communication tools 3.43
- Internet security 3.5
- Online accessibility 3.57
- Video production 3.57
- PDF 3.67
- Basic graphics 4
- Spreadsheet programs 4
- Professional online self-presentation 4.14
- Copyright 4.33
- GDPR 4.33

The only areas where our experts think their deaf students or job seekers have good competences are Using sign language interpretation online (2.83), and Social media (1.83). The areas where respondents think their deaf students or job seekers have the least skills are Basic graphics (4), Spreadsheet programs (4), Professional online self-presentation (4.14), Copyright (4.33), and GDPR (4.33). For all other skills, respondents give the deaf persons they work with an average score (between 3 and 3.67).

Below you find the average ratings of Austrian experts on the importance of specific digital skills that help deaf and hard-of-hearing students and/or job seekers improve their chances of finding a job. Again, the importance was rated on a scale of 1 (this skill is not important at all) to 10 (this skill is very important).

- Professional communication tools 8.71
- Online research 8.43
- Using sign language Interpretation online 8.43
- PDF 8.14
- Internet security 8
- Word processing programs 7.86
- Professional online self-presentation 7.71
- Cloud and data storage 7.5

- GDPR 7.5
- Presentation programs 7.5
- Copyright 7.43
- Online accessibility 7.33
- Spreadsheet programs 7.33
- Basic graphics 6.5
- Social media 6.43
- Video production 6.29

The skills considered most important are Using sign language interpretation online (8.43), Online research (8.43), and Professional communication tools (8.71). Basic graphics (6.5), Social media (6.43), and Video production (6.29) are considered less important, but still important with an average rating above 6.

4.2.3 Turkey

4.2.3.1 Procedure of Data Collection

The survey was distributed to the instructors of the students of the School for Students with Disabilities, all of whom were deaf or hard-of-hearing students. The survey was also forwarded to our associated partner. The survey was available online from 07.08.2022 to 22.09.2022.

4.2.3.2 Background Information on Participants (Turkey)

The target audience for this survey were experts who work with deaf or hard-of-hearing students. The participants were the instructors of the students at the School for Students with Disabilities, all of whom were deaf or hard-of-hearing. 18 people participated in the survey in Turkey, of which 7 completed the questionnaire in full.

4.2.3.3 Findings

a) Profile of Deaf and Hard-of-hearing Students and/or Job seekers (Turkey)

86% of Turkish respondents (6 out of 7) answer that their students recently graduated from school. Only one respondent says no, they have not recently graduated from school.

29% of respondents (2 out of 7) indicate that their students do not yet have a job, while 71% (the remaining 5 respondents) indicate that their students do.

Regarding migration background, all respondents indicate that their students do not have a migration background.

43% of the respondents (3 out of 7) work with students with multiple disabilities, 57% (4 out of 7) work with students who are only deaf or hard-of-hearing.

86% (6 out of 7) have students whose main form of communication is sign language; only 1 respondent has no students whose main form of communication is sign language.

29% of respondents (again 2 out of 7) have students whose main form of communication is written language, 71% (the remaining 5 respondents) have no students whose main form of communication is written language.

Concerning the type of schools attended, 71% of respondents (5 out of 7 respondents) indicate that their students attend a school for the deaf. 29% (2 out of 7 respondents) report that their students attend a mainstream school.

b) Preparedness for Vocational Training (Turkey)

Regarding the first two questions, which were related to the language skills of the deaf and hard-of-hearing students, the results in Turkey are as follows:

86% of the experts (6 out of 7) state that their students have sufficient sign language skills to attend vocational training. Only 1 respondent negates this.

43% of the experts (3 out of 7) report that their students have sufficient written language skills to attend vocational training. The remaining 57% (4 respondents) answer in the negative.

Regarding the digital skills of deaf and hard-of-hearing students, our survey in Turkey showed the following results:

All respondents indicate that their students have sufficient digital skills (use of the Internet).

With regard to digital communication skills via e-mail or video call, 86% (6 out of 7 respondents) believe that their students have sufficient skills. Only 1 respondent indicates that they do not.

The remaining questions in this section, related to other skills required for participation in vocational training, came to the following results in Turkey:

43% (3 out of 7 respondents) claim that their students have sufficient video production skills to compete in vocational training, while the remaining 57% (4 respondents) answer in the negative.

57% of the respondents (4 out of 7) indicate that their students have sufficient language skills to take part in vocational training, 43% (3 respondents) negate this.

As for the knowledge on the subject of vocational training, 29% of the respondents (2 out of 7) say that their students have sufficient knowledge, 71% (5 out of 7) deny it.

Finally, we asked whether our respondents' students know how to use online interpretation services. In Turkey, 71% (5 out of 7 respondents) answer in the affirmative, while 29% (the remaining 2 respondents) answer in the negative.

c) Availability of Accessible Teaching Materials (Turkey)

In Turkey, 57% of respondents (4 out of 7) state that video material with sign language translation is generally available, 43% (3 out of 7) answer that it is not.

With regard to video materials with subtitles, 57% state that they are available, 43% answer in the negative.

57% indicate that written texts are available, 43% deny this.

As the availability of written texts in easy language is concerned, 57% indicate that they are available and 43% indicate that they are not available.

Regarding the availability of signed versions of easy-to-read texts, 57% say they are available and 43% say they are not available.

As in the other countries, the last two questions in Turkey concerned vocational school instructors.

29% of respondents (2 out of 7) say that instructors in vocational training have sufficient sign language skills, and 57% (4 out of 7 respondents) say that they do not. 1 respondent did not answer the question.

When questioned if instructors are aware of the needs of deaf and hard-of-hearing learners and adapt their instruction accordingly, 57% (4 out of 7 respondents) respond “yes” and 43% (3 out of 7 respondents) respond “no”.

d) Digital Skills of Deaf and Hard-of-hearing Students and/or Job seekers (Turkey)

The following section presents the Turkish experts' assessments of the digital skills of their average deaf or hard-of-hearing student. As in the other countries, these were rated on a scale from 1 (very good) to 5 (no skills at all).

- Professional communication tools 2.43
- Online accessibility 2.71
- Social media 2.71
- Presentation programs 3
- Spreadsheet programs 3
- Using sign language interpretation online 3
- Video production 3
- Cloud and data storage 3.14

- Internet security 3.14
- Word processing programs 3.29
- Online research 3.33
- Basic graphics 3.43
- GDPR 3.43
- PDF 3.43
- Professional online self-presentation 3.43
- Copyright 3.86

As shown, the only areas in which our experts believe their students have good skills are Social media (2.71), Online accessibility (2.71), and Professional communication tools (2.43). The areas in which respondents believe their students have the lowest skills are Basic graphics (3.43), GDPR (3.43), PDF (3.43), Professional online self-presentation (3.43), and Copyright (3.86). For other skills, respondents give their students a medium rating (between 3 and 3.33).

The average ratings of the Turkish experts on the importance of specific digital skills to help deaf and hard-of-hearing students and job seekers improve their chances of finding a job are as follows. The importance here was again rated on a scale from 1 (this skill is not important at all) to 10 (this skill is very important).

- Online accessibility 8.33
- Social media 8.14
- Professional communication tools 7.86
- GDPR 7.43
- Online research 7.29
- Presentation programs 7.29
- Cloud and data storage 7.14
- Copyright 7
- Internet security 7
- Using sign language Interpretation online 7
- Spreadsheet programs 6.83
- Basic graphics 6.57
- PDF 6.57
- Video production 6.43
- Word processing programs 6.43
- Professional online self-presentation 6.14

The most important skills for experts in Turkey are Professional communication tools (7.86), Social media (8.14), and Online accessibility (8.33). Video production (6.43), Word processors (6.43), and Professional online self-presentation (6.14) are considered less important, but still important with an average rating above 6.

4.2.4 Italy

4.2.4.1 Procedure of Data Collection

The survey in Italy was circulated to deaf and hard-of-hearing educators and teachers of ISISS Antonio Magarotto students.

In addition, it has been sent to post-school associations where educators work with multi-disabled children.

4.2.4.2 Background Information on Participants (Italy)

The target group for this survey were deaf and hard-of-hearing educators and teachers of deaf and hard-of-hearing students. We also sent the questionnaire to post-school associations dealing with deaf and hard-of-hearing children with multi-disabilities.

However, only 7 people responded to our survey. All of them completed it in full.

4.2.4.3 Findings

a) Profile of Deaf and Hard-of-hearing Students and/or Job seekers (Italy)

In Italy, 71% (5 out of 7 respondents) answer that their students have recently finished school. One respondent answers that their students did not finish school recently and the remaining respondent did not give an answer.

When asked if the deaf and hard-of-hearing students described by the Italian experts are integrated in the labor market, 2 respondents indicate that they are, while 5 respondents indicate that their students are unemployed.

As far as migration background is concerned, only 1 respondent reports that their students were born in a country other than Italy. 3 respondents (43%) report that their students have no migration background and the remaining 3 respondents (43%) did not provide an answer.

29% of the respondents (2 out of 7) work with children with multiple disabilities, while 71% (the remaining 5 respondents) do not.

All 7 respondents state that LIS (Italian Sign Language) is used as the main form of communication by their students. On the other hand, 3 out of 7 respondents (43%) report that their students use written language as their main form of communication.

Regarding schooling, most respondents (86%, or 6 out of 7 respondents) report that their students attend a school for the deaf, while only 1 respondent answers that their students do not attend a school for the deaf. Again, there are 2 respondents who report that their students attend a mainstream school. As in Germany and Austria, the problem of having to choose between "school for the deaf " and "mainstream school" is evident.

b) Preparedness for Vocational Training (Italy)

With regard to sign language skills, in Italy, 86% of respondents (6 out of 7) state that their students have sufficient skills in this area. 1 respondent negates.

However, in terms of written language skills, only 29% (2 out of 7 respondents) believe that their students' skills are sufficient.

The questionnaire also explored the Italian experts' assessment of the digital skills of deaf and hard-of-hearing students in Italy: Here, the vast majority believe that students know how to use the Internet (86%, or 6 out of 7 respondents).

Furthermore, all respondents feel that their students' digital communication skills via e-mail or video call are adequate and sufficient.

Regarding the assessment of skills in video production, in Italy 71% of the interviewed experts (5 out of 7) believe that deaf and hard-of-hearing students have sufficient skills in this area.

Sufficient language skills for participation in vocational training are attributed by the Italian experts to only a few students. 29% (2 out of 7 respondents) answer that their students have sufficient language skills to participate in vocational training, the remaining 71% (5 respondents) believe that their students have insufficient language skills for vocational training.

In terms of knowledge on the subject of vocational training, 71% (5 out of 7 respondents) report that their students have sufficient knowledge, while the remaining 29% (2 respondents) answer in the negative.

At last, we asked whether the students of our respondents were able to use online interpreting services. Again 71% answer positively, while the remaining 29% answer negatively.

c) Availability of Accessible Teaching Materials (Italy)

According to 71% of the Italian experts (5 out of 7 respondents), no video material with LIS translation is available. The remaining 29% (2 respondents) state the opposite.

In Italy, 57% (4 respondents) continue to say that video material with subtitles is available, while the remaining 43% (3 respondents) do not.

Most of the respondents think that written texts are generally available. 86% of them (6 out of 7) answer positively and only 1 expert answers that written text are not available.

When asked if written texts in easy language are generally available, 57% of Italian respondents (4 out of 7) indicate that they are, while the remaining answer in the negative.

When it comes to signed versions of easy-to-read texts, only 1 respondent answers positively, while the remaining 86% (6 respondents) indicate that easy-to-read texts are not available with sign language translation.

The evaluation of vocational instructors by the experts yielded the following results in Italy:

Only 43% of the experts (3 out of 7 respondents) consider the sign language skills of vocational instructors to be sufficient, while the remaining 57% believe that the average vocational instructor does not have sufficient sign language skills.

The results to the question about teachers' awareness of the needs of deaf and hard-of-hearing students and their redesign and adaptation of their teaching methods are positive in Italy. 86% of respondents (6 out of 7) believe that teachers are generally aware of the needs of deaf and hard-of-hearing students and adapt their teaching accordingly. Only 1 respondent sees it differently.

d) Digital Skills of Deaf and Hard-of-hearing Students and/or Job seekers (Italy)

The Italian experts' assessments of the digital skills of their average deaf or hard-of-hearing student are as follows. Again, skills were rated on a scale from 1 (very good) to 5 (no skills at all).

- PDF 2.71
- Copyright 3
- Online research 3
- Spreadsheet programs 3
- Presentation programs 3.14
- Video production 3.14
- Basic graphics 3.29
- Internet security 3.29
- Online accessibility 3.29
- Professional communication tools 3.29
- Word processing programs 3.29
- Professional online self-presentation 3.33
- Social media 3.57
- Using sing language interpretation online 3.57
- GDPR 3.8
- Cloud and data storage 4.29

As shown, the area in which our Italian experts believe their students have good skills is PDF (2.71). The areas in which respondents believe their students have the lowest skills are Social media (3.57), Using sign language interpretation online (3.57), GDPR (3.8), and Cloud and data storage (4.29). For the other skills, respondents give their students a medium rating (between 3 and 3.33).

The average rating of the experts in Italy regarding the importance of our 10 specified digital skills to help deaf and hard-of-hearing students and job seekers improve their chances of finding a job is as follows. The importance was again rated on a scale from 1 (this skill is not important at all) to 10 (this skill is very important).

- Presentation programs: 8.33
- Social media: 8.83
- Word processing programs: 8.14
- Using sing language interpretation online: 8
- Cloud and data storage: 7.71
- Professional online self-presentation: 7.71
- Basic graphics: 7.57
- GDPR: 7.57
- Internet security: 7.43
- Video production: 7.43
- Copyright: 7.29
- Online research: 7.14
- Professional communication tools: 7
- Online accessibility: 6.86
- PDF: 6.86
- Spreadsheet programs: 6.86

Note that experts believe Presentation programs (8.33), Social media (8.83), Word processing programs (8.14), and Using sign language interpretation online (8) are particularly important skills to increase employment opportunities for deaf and hard-of-hearing students and/or job seekers.

The last question of the questionnaire was given as an open answer. Only 1 out of 7 participants left a comment that we consider important to mention:

"There is still little content and materials in LIS, especially for use in schools."

4.2.5 Total Number

a) Profile of Deaf and Hard-of-hearing Students and/or Job seekers

Compared to Germany and Austria, more respondents in Italy and Turkey say that their students and/or job seekers have recently graduated from school. In addition, in Turkey, more students already have a job than in Germany, Austria and Italy (Turkey: 71%, Italy: 29%, Germany: 11%, Austria: 11%). All Turkish respondents indicate that their students do not have a migration background. In Germany, 78% of respondents say their students and/or job

seekers have a migration background, in Austria the figure is 67%, while in Italy 1 respondent (14%) reports their students and/or job seekers have a migration background.

In Italy, only 29% of respondents work with students and/or job seekers who have another disability in addition to their deafness or hard-of-hearingness. In Austria, it is 33%, In Turkey it is 43%, and in Germany it is 56%.

The majority of respondents in all four countries indicate that their students and/or job seekers mainly use sign language. On the other hand, in Italy and Turkey there is an interesting result: 43% and 29% of the respondents, respectively, indicate that the students and/or job seekers they work with use written language as their main form of communication. Nevertheless, also in Turkey only one, and in Italy no respondent state that they have students whose main form of communication is not sign language. It is possible that the questions were misunderstood or could not be answered clearly.

In all four countries the students mainly attended a school for the deaf.

b) Preparedness for Vocational Training

While 89% of respondents in Germany and 86% in both Italy and Turkey state that their students and/or job seekers have sufficient sign language skills to participate in vocational training, the figure in Austria is only 33%. However, 44% of the Austrian respondents did not give an answer here. Furthermore, while in Germany and Austria none of the respondents, and in Italy only 2 out of 7 respondents (29%), are of the opinion that their students and/or job seekers have sufficient knowledge of written language (writing and reading skills), here in Turkey it is 43%.

In Turkey, the digital skills of students and/or job seekers are assessed better than in Germany and Italy, and again better than in Austria. In Turkey, for example, all respondents state that their students have sufficient digital skills (in terms of using the Internet), while 89% in Germany, 86% in Italy and only 22% in Austria are of this opinion. Regarding the question about sufficient digital communication skills via e-mail or video call, in Italy, all respondents feel that their students' and/or job seekers' skills are sufficient. 86% of respondents in Turkey believe that their students have these skills. Only one respondent answers "no" here. In Germany, only 44% say that their students and/or job seekers have sufficient digital communication skills in this sense, and in Austria only 11%. However, the relatively large number of answers not provided in Austria must also be noted here.

As far as video production skills are concerned, only 11% of respondents in Germany believe that their students and/or job seekers have sufficient skills in this area, compared with 22% in Austria, 43% in Turkey, and 71% in Italy. However, it should again be noted that in Germany and Austria, approximately one third of the respondents did not answer the question.

When asked whether their students and/or job seekers have sufficient language skills to participate in vocational training, only 29% in Italy answer "yes". In Austria, the figure is 33%, in Germany 44%, and in Turkey 57%.

When asked whether their students and/or job seekers have sufficient knowledge on the subject of vocational training, none of the respondents in either Germany or Austria answer "yes". In Turkey, 29% of respondents state that their students have sufficient knowledge in this area, while in Italy the figure is at 71%.

c) Availability of Accessible Teaching Materials

While in Italy 29%, in Austria 22% and in Germany none of the respondents say that video material with sign language translation is usually available, in Turkey more than half answer that video material translated into sign language is generally available (57%).

67% of the German experts believe that video material with subtitles is generally available. In Turkey and Italy, 57% of respondents say this, and only 33% in Austria.

As for the availability of written texts, no one in Germany says they are not available, 89% say they are, 1 answer is unknown. In Italy, 86% of respondents indicate that written texts are generally available. Austrian respondents say they are available 67% of the time, Turkish respondents only 57%.

Regarding the availability of written texts in easy language, 57% of respondents in Turkey and also 57% of respondents in Italy say they are available, compared to only 33% in Germany and 11% in Austria.

While in Turkey 57% of respondents indicate that signed versions of easy-to-read texts are available, in Italy it is 14%, in Austria it is 11% and in Germany there is no such availability.

When asked whether instructors in vocational training have sufficient sign language skills, 44% of the experts in Austria and Germany and 43% of the experts in Italy answer yes, while in Turkey only 29% agree.

To the question whether the instructors are aware of the needs of deaf and hard-of-hearing learners and adapt their teaching accordingly, 86% in Italy and 57% in Turkey answer yes, while in Germany and Austria only 33% answer yes.

d) Digital Skills of Deaf and Hard-of-hearing Students and/or Job seekers

In this subsection, the experts' assessments of the digital skills of deaf and hard-of-hearing students and/or job seekers for all four countries as well as the experts' assessment of the importance of specific digital skills are summarized again and particular aspects are interpreted. For a better overview, the skills are divided into three categories: Digital skills

that relate to the use of the Internet (Cloud and data storage, Online research, Professional communication tools, Professional online self-presentation, Social media, and Use of online sign language interpretation), digital skills that relate to the use of computers and computer programs (Basic graphics, PDF, Presentation programs, Spreadsheet programs, Video production, and Word processing programs), and those that relate to privacy, online accessibility, and Internet safety (Copyright, GDPR, Internet security, and Online accessibility). For each category, the experts' assessment of the students' or job seekers' skills is shown first and then compared with the experts' assessment of the importance of the same digital skills. Please note that for the former an evaluation was made on a scale of 1 (very good) to 5 (no skills at all), and for the latter it was made on a scale of 1 (this skill is not important at all) to 10 (this skill is very important).

Digital Skills (Use of the Internet)

	Germany	**Austria**	**Turkey**	**Italy**
Cloud and data storage	2.86	3.17	3.14	4.29
Online research	3.56	3.14	3.33	3
Professional communication tools	3.22	3.43	2.43	3.29
Professional online self-presentation	3.89	4.14	3.43	3.33
Social media	1.5	1.83	2.71	3.57
Using sign language interpretation online	3	2.83	3	3.57

	Germany	**Austria**	**Turkey**	**Italy**
Cloud and data storage	6.56	7.5	7.14	7.71
Online research	8.89	8.43	7.29	7.14
Professional communication tools	8.89	8.71	7.86	7

Professional online self-presentation	8.89	7.71	6.14	7.71
Social media	5.11	6.43	8.14	8.83
Using sign language interpretation online	8.67	8.43	7	8

Italy's ratings are particularly noteworthy here. With an average score of 3.51, the Italian experts rate the digital skills of their students and/or job seekers lower than in Austria (3.09), Germany (3.01) and Turkey (3.01). This is especially important because, as will be seen, the Italian experts rate the skills in this category as more important than the skills in the other categories.

As can be seen from the tables as well, there is also a large gap in Germany between the experts' assessments of their students' and/or job seekers' skills and the importance of these skills. Although the German students' or job seekers' Cloud and data storage skills are rated as relatively good (2.86) and their Social media skills as very good (1.5), the figures for the relevance of these skills are the lowest in the German average (6.56 for Cloud and data storage and 5.11 for Social media skills).

Comparing the two competencies perceived as most important for the respective countries with the respective assessment of students' or job seekers' existing skills, these overlap in only two cases: In Austria, for example, the competence in dealing with online sign language interpreters is perceived as one of the most important and the students' or job seekers' ability is also rated as relatively good with 2.83. In Turkey, even the two highest rated skills overlap with the two most important perceived skills: Professional Communication Tools (with 2.43 for students' skills rating and 7.86 for importance) and Social Media (2.71 and 8.14).

The importance of digital skills in relation to Internet use is rated on average as follows: Austria: 7.87; Germany: 7.84; Italy: 7.73; and in Turkey: 7.26.

Digital Skills (Computer and Programs)

	Germany	**Austria**	**Turkey**	**Italy**
Basic graphics	3.33	4	3.43	3.29
PDF	2.67	3.67	3.43	2.71
Presentation programs	2.38	3	3	3.14
Spreadsheet programs	4.38	4	3	3

Video production	4	3.57	3	3.14
Word processing programs	2.63	3	3.29	3.29

	Germany	**Austria**	**Turkey**	**Italy**
Basic graphics	5.25	6.5	6.57	7.57
PDF	9.67	8.14	6.57	6.86
Presentation programs	8.75	7.5	7.29	8.33
Spreadsheet programs	8.33	7.33	6.83	6.86
Video production	4.56	6.29	6.43	7.43
Word processing programs	9.67	7.86	6.43	8.14

As far as the digital skills related to the use of computers and computer programs are concerned, the assessment of the experts on their students' or job seekers' skills in the respective countries are as follows on average: Germany: 3.23; Austria: 3,54; Turkey: 3.19; and Italy: 3.1.

The ratings of the importance of digital skills in Basic graphics, PDF, Presentation programs, Spreadsheet programs, Video production, and Word processing programs are: Germany: 7.71; Austria: 7.27; Turkey: 6.67; and Italy: 7.53.

In our opinion, the rather poor assessment by the Austrian experts of their students' and/or job seekers' digital skills in this area in general is particularly noteworthy (especially the figures on skills in handling and using PDF), as is the poor assessment by the German experts of their students' and/or job seekers' skills in handling Spreadsheet programs. The latter is particularly interesting because the German students themselves rate their own skills in using Spreadsheet programs as rather poor: 10 out of 15 state that they do not know how to use them (see 4.1.1.3 e)).

Compared to the other countries, in Italy, we have the best assessment of the students' and/or job seekers' skills in this area, with an average rating of 3.1. At this point, it is also worth mentioning that the Italian experts give the highest rating when comparing all three categories of digital competencies.

It should also be noted that the Turkish experts rate digital skills in this category as less important than the experts in Germany, Austria and Italy.

Digital Skills (Data protection, Online accessibility and Internet security)

	Germany	Austria	Turkey	Italy
Copyright	4.14	4.33	3.86	3
GDPR	3.57	4.33	3.43	3.8
Internet security	3.33	3.5	3.14	3.29
Online accessibility	3.25	3.57	2.71	3.29

	Germany	Austria	Turkey	Italy
Copyright	8.11	7.43	7	7.29
GDPR	8.78	7.5	7.43	7.57
Internet security	8.22	8	7	7.43
Online accessibility	7.11	7.33	8.33	6.86

Regarding the category of digital skills related to Data protection, Online accessibility and Internet security, it can first be said that this category is considered the most important by the German and Turkish experts, with an average rating of 8.06 and 7.44, respectively. The Austrian experts still rate skills of deaf and hard-of-hearing students or job seekers in this area as rather important (7.57) to increase the chances of finding a job, but as less important than they rate digital skills related to the use of the Internet (which, as seen, were rated at 7.87 in Austria). The Italian experts, in turn, rate digital skills in the areas of Copyright, GDPR, Internet security and Online accessibility as less important compared to the experts in the other countries (7.29).

When it comes to rating their students' and/or job seekers' skills in this category, the results in the four countries that participated in this survey are as follows: Germany: 3.57; Austria: 3.93; Turkey: 3.29; and Italy: 3.35.

In summary, the digital skills of deaf and hard-of-hearing students and/or job seekers are rated as mediocre by the experts in all four countries. On average, Germany scores 3.23 points,

Austria 3.47 points, Turkey 3.15 points and Italy 3.31 points, although many digital skills are considered important for increasing the chances of getting a job.

4.3 Employers

4.3.1 Data Collection Procedure

The data was collected via an online survey in written German, Italian and Turkish using LimeSurvey in Germany, Austria, Turkey and Italy. The survey covers the following topics: available training materials for deaf and hard-of-hearing employees and digital skills of deaf and hard-of-hearing employees. The survey was available online from 05.08.2022 until 30.09.2022.

The survey was disseminated to employers with deaf and hard-of-hearing employees in their company or organization.

4.3.2 Background Information on Participants

The survey was filled out by 23 employers with deaf and hard-of-hearing employees in Germany, Austria, Turkey and Italy. There were 5 participants from Germany and Austria together, 13 from Italy and 5 from Turkey.

For this chapter, it is important to emphasize that, in part because of the relatively small number of participants, these are meaningful samples, but they do not claim to represent an overall picture for deaf and hard-of-hearing employees.

4.3.3 Findings

a) Profile of the Employees

17 participants state that employees are rather bilingual (use of both sign and written languages), 3 state that employees are rather monolingual (use of sign language only) in their company or organization. But no participants have employees who communicate monolingual with written language. Three of the participants has no answer to this question.

b) Preparedness of New Employees for the Job

10 participants state that new deaf and hard-of-hearing employees are generally prepared for the job and 9 that they are not. Four of the participants have no answer to this question.

c) Digital Literacy

16 participants state that deaf and hard-of-hearing employees generally possess sufficient digital literacy and 4 that they do not. Three of the participants have no answer to this question.

d) Interpreting Services

15 participants state that deaf and hard-of-hearing employees know how to use sign language interpreting services efficiently and 5 that they do not. 3 participants did not provide an answer to this question.

e) Accessible Materials (videos)

14 participants state that video materials with sign language translation are not generally available. 10 employers state that video materials with subtitles are not generally available. 4 employers state that written texts are not generally available. 8 employers state easy texts (in written language version) are not generally available. 13 employers state that easy texts (in signed language version) are not generally available.

It can be said that deaf and hard-of-hearing employers generally have problems in providing video materials with sign language translations, with subtitles. They also have problems in providing written texts, easy texts in written language version and easy texts in signed language version.

f) Job Performance

17 participants state that they are generally satisfied with the job performance of new deaf and hard-of-hearing employees but 2 of them are not. It can be said that many of the employers are generally satisfied with the job performance of new deaf and hard-of-hearing employees. The employers may have positive thoughts about new deaf and hard-of-hearing employees.

g) Digital Skills to be Developed

The employers were asked to rate the importance of digital skills of deaf and hard-of-hearing job seekers on a scale from 1 to 10 (10 best). The results are as follows:

- Professional communication tools 8.53
- Online research 8.38
- Internet security 8.27
- Social media 8.25
- Online accessibility 8.17
- GDPR 8.03
- Using sign language Interpretation online 7.92
- Copyright 7.63
- Pdf 7.56
- Word processing programs 7.56
- Presentation programs 7.43
- Cloud and data storage 7.29
- Spreadsheet programs 7.02
- Basic graphics 6.29
- Video production 5.93

The skills considered most important with an average rating of 8 or more are Professional communication tools, Online research, Internet security, Social media, Online accessibility and GDPR. Less important, but still not unimportant, with a rating below 7 are the skills Basic graphics and Video production.

4.4 Deaf Associations

Seven National Deaf Associations participated in the survey for Deaf Associations. This is less than expected and lower than our target indicator. As we do not have much feedback on why the number of responses was so low, any suggested reasons are speculative. Maybe the associations were contacted at a very busy time of year? Maybe there were no English speakers available with time on their hands? Maybe there have been too many questionnaires of this nature in recent months? Maybe Deaf Associations felt that a response at association level on the relative digital competences of individual members was not appropriate or too generalised? Or even that a response might be beyond their mandate? We cannot know why but the response was disappointing.

However, we did receive feedback that some associations needed more time to respond to the questionnaires. From this, we conclude that we may need to change the method of how we approach the questionnaires in the future. The problem could be solved by indicating to give the answers directly during the interview. This method of face-to-face interviewing would require more work, but could lead to more comprehensive data collection.

In any case, we have seen the interest from the National Deaf Associations that followed the presentation of our project during the General Assembly in May 2022, and we are grateful to

the seven associations that participated in our survey. Below we provide a summary of the results collected, which are representative from all parts of Europe. Thus, we were able to collect data from Northern and Southern Europe, from Eastern and Western Europe, as well as from Central Europe.

45% of respondents indicate that the predominant type of primary education for deaf and hard-of-hearing children in their country is deaf schools. 22% of respondents indicate that co-enrollment in inclusive public schools with the use of sign language is the main type of primary education. 11% state that both schools for the deaf and co-enrollment in public schools are predominant. The remaining 22% of respondents report that education for deaf and hard-of-hearing children is provided primarily in public schools, without the provision of sign language.

When asked if there are enough teachers who are comfortable communicating and teaching in sign language, 29% of respondents answer "no." Another 29% of respondents indicate that most teachers have rudimentary sign language skills, and again 28% of respondents indicate that there are few teachers with sufficient sign language skills in schools. Only 14% of respondents think that there are a sufficient number of teachers with adequate sign language skills.

In response to the question of whether many children are taught in both sign and spoken and written language in their country, 43% each answer "No. However, there is a few" and "Yes, there are many". 14% report not being sure.

Regarding digital literacy skills of deaf and hard-of-hearing students, the results are as follows:

- Use of computer/mobile devices/camera: More than sufficient: 28%, Sufficient: 43%, Less than sufficient: 29%
- Use of software (Word, Excel, PowerPoint etc.): More than sufficient: 28%, Sufficient: 43%, Less than sufficient: 29%
- Multimedia (production, editing and publishing of videos): Sufficient: 57%, Less than sufficient: 43%
- Data storage: Sufficient: 29%, Less than sufficient: 57%, Not sufficient: 14%
- Social media (platform, and information share): More than sufficient: 14%, Sufficient: 57%, Less than sufficient: 29%
- Online information search tools (Use of Google etc.): More than sufficient: 28%, Sufficient: 43%, Less than sufficient: 29%
- Data protection (GDPR): More than sufficient: 12%, Sufficient: 25%, Less than sufficient: 38%, Not sufficient: 25%.

As far as bilingual literacy skills are concerned (i.e., competencies in both sign and written language), the results are alarming. More than half of the respondents believe that most deaf and hard-of-hearing students are less than sufficiently literate in sign language (57%). Only 43% believe they have acquired sufficient sign language skills. In terms of written language, the results are even worse: Again, more than half of the respondents believe that deaf and

hard-of-hearing students have less than adequate knowledge of written language (57%). Only 29% believe that they have a sufficient command of it. The remaining 14% even state that most deaf and hard-of-hearing students do not have sufficient knowledge of written language.

There is also a clear need for action in terms of available digital learning opportunities in sign language: 72% of respondents state that there are very few accessible digital learning materials and other learning online resources in sign language, 14% even believe that there is no online material at all. Only 14% of respondents think that there are enough online learning opportunities in sign language.

The learning material offered online is also rarely subtitled, according to the majority of respondents (86% who answer there is little subtitled audio-visual material). Sign language translations are not available at all, according to more than half of respondents (57%).

According to 43% of respondents, most deaf and hard-of-hearing students know how to work with sign language interpreters, but note the lack of experience. 14% indicate that most deaf and hard-of-hearing students feel comfortable working with sign language interpreters. Nonetheless, 43% also respond that most deaf and hard-of-hearing students do not know how to work with sign language interpreters.

When it comes to evaluating vocational training, first, the most prominent kind of vocational training for deaf and hard-of-hearing youth appears to be both vocational training for deaf and hard-of-hearing learners and co-enrollment with sign language in public schools, with 43% selecting this option. Only 14% of respondents state that the predominant type of vocational training for deaf and hard-of-hearing youth in their country is vocational training designed for deaf and hard-of-hearing learners only. Another 14% report that vocational training without sign language is the most common type of school-based training for deaf and hard-of-hearing youth in their country.

As has already been shown for primary education work, the need for teachers with sign language skills is also evident in the vocational education field. More than half of the respondents state that there are no teachers who are comfortable with sign language (57%). Another 14% say there are teachers with only rudimentary sign language skills.

43% of respondents report that deaf and hard-of-hearing youth do not receive vocational training in both sign language and spoken and written language. They say there are only few job seekers who receive this training. 28% of respondents indicate that almost no deaf and hard-of-hearing job seekers have the opportunity to receive vocational training in both languages. The rest declared that they were not sure. No one indicates that there are many deaf and hard-of-hearing job seekers who receive this opportunity.

In terms of digital literacy among deaf and hard-of-hearing job seekers, it can be noted that four areas in particular are considered problematic, namely the use of software (43% less than sufficient), multimedia (29% less than sufficient, 14% not sufficient), data storage (29% less than sufficient, 14% not sufficient), and data protection regulation (43% less than sufficient,

29% not sufficient). In the remaining categories, the skills of deaf and hard-of-hearing job seekers are rated as rather sufficient.

Further, while deaf and hard-of-hearing job seekers' knowledge of sign language is rated as rather good (43% stating that they are sufficiently literate, 14% stating that they are more than sufficiently literate), their knowledge of written language is rated as rather poor. It can be seen here that 57% rate the written language skills of most deaf and hard-of-hearing job seekers as less than sufficient, 14% as not sufficient.

All respondents indicate that there are very few accessible learning materials and other learning resources in sign language in vocational training. The availability of subtitled audio-visual video learning material as well as sign language translated video material, however, is rated better for the field of vocational training than in general. Nevertheless, a clear need is evident: Only 28% of the respondents state that there is enough offer with subtitles, and for the question about translations it is only 14%.

Compared to deaf and hard-of-hearing students, the knowledge about how to work with sign language interpreters among deaf and hard-of-hearing job seekers is rated worse by the respondents: Only 28% answer yes to the question whether job seekers know how to work with sign language interpreters, but it is also emphasized that experience is lacking. 29% indicate that job seekers do not know how to work with sign language interpreters. Another 43% state that job seekers are not well enough informed about working with sign language interpreters. When asked if deaf and hard-of-hearing job seekers know how to arrange for a sign language interpreter, the results are better: 43% of respondents even say that deaf and hard-of-hearing job seekers have experience in this area. Nevertheless, the lack of experience is also criticized here.

Regarding knowledge about how to apply for a job, more than half of the respondents (57%) report that deaf and hard-of-hearing job seekers do not have all the information about how to apply for a job. When asked if most deaf and hard-of-hearing job seekers have acquired the knowledge and skills necessary for employment, 72% continue to answer that they have acquired only basic knowledge and skills.

As for comments, suggestions or remarks, one participant mentions that there is no translation of materials into national sign language and that captioning materials are not included per se, but notes an increasing trend towards captioning. One participant would like to receive the results of the survey because he/she is interested in "how other countries are doing with the availability of captioned materials and interpreters." One participant emphasizes that some deaf and hard-of-hearing people have a good education, but this does not mean that all deaf and hard-of-hearing people are at the same level. Not every deaf or hard-of-hearing student has a school that provides good support. It also depends on the level of knowledge of the deaf and hard-of-hearing people concerned.

5. Recommendations

As has been shown, generally limited learning materials in sign language are available to deaf and hard-of-hearing job seekers. Both the evaluation of the survey of students and the evaluation of the survey of experts revealed that there is a clear need to provide more materials in sign language for deaf and hard-of-hearing job seekers. In addition, it became clear that more materials in plain language are needed (e.g., written texts in easy language).

The importance of contact with deaf and hard-of-hearing peers is obvious and should be considered. The need and importance of deaf and hard-of-hearing instructors who sign competently and are aware of the specific needs of deaf and hard-of-hearing learners could be demonstrated.

In addition, it should be taken into account that most survey respondents are predominantly using smartphones and not tablets, laptops, or desktop computers. Therefore, mobile-friendly formats should be created.

Another recommendation could be to build on the strengths of deaf and hard-of-hearing job seekers, such as focusing on areas with advanced digital skills like social media, while offering support in areas with development potential. Digital literacy training should also be closely linked to language training to increase vocabulary in written and signed language.

Furthermore, an interesting divergence was found between the self-assessment of deaf and hard-of-hearing job seekers and the experts working with them. This is more of an observation than a recommendation, but could lead to a deeper analysis. For example, regarding the knowledge of using spreadsheets, a high percentage of the deaf and hard-of-hearing job seekers indicated that they were able to use them, while the experts' assessment led to a very different result (with a score of about 4, which is only one level higher than no knowledge at all). The question arises whether this is due to the fact that during the self-analysis the participants thought more about how they use spreadsheets in their private life than about the potential use in a business or professional context.

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