



Promoting digital transformation  
and social innovation in VET  
for better access of deaf students  
to the labour market

2022-1-PL01-KA220-VET-000086953

# 3D4DEAF Comparative Index

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3D4DEAF

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## Introduction

In an era marked by technological advancements and evolving labor markets, the quest for inclusive education and equitable employment opportunities remains at the forefront of global concerns. Recognizing the unique challenges faced by deaf Vocational Education and Training (VET) students, the "3D4DEAF" initiative embarked on a journey to empower these individuals and enhance their competitiveness in the labor market.

This initiative launched a preliminary phase, spanning across several European countries—Italy, Greece, Poland, Cyprus, and Spain. The primary objective of this phase was to conduct in-depth research, shedding light on the current state of VET training for deaf students and the barriers they encounter when seeking employment. Each participating country meticulously explored key facets of education, labor market inclusion, and the digitalization landscape.

### The core questions addressed in each country's research encompassed:

- ✓ Education of Deaf Students:
- ✓ The Situation of Deaf People in the Labor Market
- ✓ State of Art in the Field of Digitalization in Education

This "3D4DEAF Comparative Index" is the culmination of the research conducted in each participating country. It is a valuable resource that presents a concise and structured overview of the findings, allowing readers to effortlessly compare and contrast the data and insights across nations.

### Benefits for the Reader:

- ✓ Cross-Country Insights: Gain a comprehensive understanding of the challenges and successes in VET education and labor market integration for deaf individuals in various European countries.
- ✓ Identifying Best Practices: Discover innovative approaches and policies that promote inclusive education and equal employment opportunities for the deaf community.
- ✓ Informing Decision-Making: Provide a foundation for informed decision-making, policy development, and resource allocation to enhance the lives of deaf VET students.
- ✓ Supporting the Development of a Competence Framework: The index serves as a crucial building block for the creation of a competence framework that addresses the identified needs and gaps in VET education on a transnational level.

## Poland

### National report findings

The number of deaf people in Poland differs, based on the available data and its sources. It is estimated that about 50,000 Poles have a serious hearing impairment. In the 2021/2022 school year, over 15,000 students with hearing disabilities were studying in educational institutions across the country. Most of them - about 86% - were hard of hearing people who, despite hearing impairment, study with their hearing peers, about 14% (2,100 people) were deaf students who also use sign language during their education. The COVID-19 pandemic has accelerated activities in Poland related to digital transformation among industry 4.0 organizations. However, STEAM education and social entrepreneurship in VET schools should be improved. It is worth emphasizing that over two million students with special needs, including the deaf, are educated in Poland. Especially this group requires investment in digital infrastructure, equipment, teacher competences and appropriate software. There are programs in Poland but, unfortunately, they operate for a short period of time or are one-off and do not ensure any continuity of activities.

### Focus group findings

In Poland, 3 focus groups were organized for entrepreneurs, teachers and students.

The focus group with entrepreneurs was held on 26th of May in the form of an online meeting, via Zoom hosted by Stowarzyszenie Rozwoju Pitagoras, supported by University of Social Science. 7 representatives of 5 different organizations took part. The participants were strongly connected with the deaf community. Participants were: a sign language interpreter, job broker, and career counselor (2), a president of a recruitment agency that specializes in the employment activation of people with various disabilities, but especially people with hearing impairments, together with a specialist responsible for the technology for sign language interpreters in a company providing access to Polish Sign Language interpreters via online system.

Entrepreneurs enjoyed the discussion as part of the 3D4DEAF project. They mentioned many gaps and problems. Because most companies do not understand sign language or how the Deaf operate, they are hesitant to hire Deaf employees. Employers are unsure of how to interact with Deaf, assign them duties, and communicate with them. The scarcity of translators and the corresponding expenses further discourage employers. There is also no support of psychologists in sign language for Deaf people entering the labour market.

VET teachers answered the questions via e-mails. Teaching students to grasp instructions, questions, and instructional materials is the primary problem faced by educators. Teachers have access to relevant texts, language instruction, and additional resources (such as mobile apps and the Internet) - as vocational training takes place mainly in special institutions. In practice, the curriculum does not always match the needs of deaf students. There is a shortage of specialized educators and materials. The educational system is also very hard and complex.

The focus group with students was organized online on the 1st of June 2023. 5 VET students participated. The main point that they mentioned as the obstacle is lack of proper communication and a misunderstanding of their needs. Instead of developing an identity, they are forced to talk and work with a speech therapist. The education itself is based on speech and writing. Even if deaf persons finally complete their education, they are far less equipped for life than their hearing counterparts. They are not taught critical thinking, independence, or innovation. Because of all of this, the Deaf are sometimes driven into a certain profession—simple manual work—which limits their personal development.

## Summary

### 1. Education of Deaf Students

- **Deaf Population Statistics:**
  - Total deaf population: 50 000
  - Number of deaf students: over 15 000
  - Overview of teaching system:

In the Polish educational system, young people with disabilities, including deaf and hard of hearing, have the opportunity to be educated in all types of schools, in accordance with their individual developmental and educational needs and predispositions. The law ensures that the content, methods and organization of teaching are adapted to their psychophysical capabilities, as well as the possibility to benefit from psychological care and special forms of didactic work.

However, there is still a big field for further improvement. Among the hard of hearing and deaf people, there are both those who use sign language (mainly Polish Sign Language) and those who do not. Polish Sign Language (PJM) is taught as remedial or extra-curricular activities. PJM should therefore be included in the core curriculum as a subject, not as an extracurricular activity. There is also a need to develop textbooks and external examinations for students with special needs. External exams are not designed specifically for people with hearing impairment and don't take into account their needs.

- National policies supporting deaf student education:

Although there are certain initiatives, there are no specific policies pertaining to the education of the deaf. Offices for Persons with Disabilities exist at the academic level with the goal of removing all obstacles and enhancing involvement in the academic community. The Polish government and EU funds voluntarily promote lifelong learning in the form of vocational courses and training. Initiatives to support training from local job agencies and vocational education are implemented. The budget is used by local governments to raise funds for special education initiatives. The Ministry of Education is developing programs like Sign with us ("Migaj razem z nami") to aid deaf pupils in learning.

- **Teacher Training:**
  - Teacher training requirements: Compulsory

The regulations require teaching staff working with deaf and hard of hearing people to know sign language only at a basic level. There is still no formal requirement for teaching staff to know sign language in schools where deaf children and adolescents study.

The standard of education in the field of surdopedagogy (special education teachers in the field of education and rehabilitation of people with hearing disabilities) refers to the knowledge of the sign language system (SJM) and Polish Sign Language (PJM) by graduates of studies and postgraduate studies. The education of future teachers is carried out exclusively at universities on the basis of regulations on teacher education standards. It can take place during uniform master's studies in the field of "special pedagogy", as well as

a part of three-semester postgraduate studies in the field of surdopedagogy - the latter option is intended for people already practicing the teaching profession who wish to obtain additional qualifications in this field.

In no school in Poland, PJM is neither the language of instruction nor a compulsory subject of teaching. There are no PJM teaching programs or standards for teachers of this language. There are no specific requirements regarding the qualifications of a teacher who wants to work bilingually in a school for deaf children. A teacher in surdopedagogy studies only receives information about what a deaf student cannot do and what cannot be done with him. Teachers use books for children with intellectual disabilities. They are not prepared to work with the bilingual method, as Polish surdopedagogy is still dominated by the oralistic approach, the aim of which is to teach speech.

- Specific training or studies:

Pursuant to the Regulation of the Minister of National Education of August 1, 2017 on detailed qualifications required from teachers (Journal of Laws 2017, item 1575), in order to take up a job as a teacher of the deaf and hard of hearing, one must complete higher education, a teacher training institute, postgraduate studies or a qualifying course, to the extent appropriate to the student's disabilities. Pedagogical qualifications in the field of surdopedagogy can also be obtained by taking postgraduate studies or a qualification course in the field of surdopedagogy.

In addition to having qualifications for a given subject or type of class, a teacher in special schools and institutions must meet other qualification requirements. The subject of sign language has no equivalent in the field of study, so the qualifications are held by a person who has completed studies with a minor in sign language or postgraduate studies in sign language.

- Availability of seminars/conferences: Yes

There are training materials on communication with deaf people in schools/educational institutions, but there is a significant deficit of seminars or conferences regarding the education of deaf students. The inspection report on the education of deaf and hard of hearing students, published in December 2022, showed that the education system is not adapted to the needs of students with this type of disability.

The Ministry of National Education organizes training and conferences for principals and teachers on the dissemination and implementation of inclusive education. Education superintendents organized conferences on the dissemination of legal solutions and good practices in the organization of education and support for students with special educational needs. The conference was addressed to principals of kindergartens, schools and institutions, as well as teachers responsible for organizing special education and psychological and pedagogical assistance. The Education Development Center, in cooperation with the Ministry of National Education, has also prepared a guide "Students with special educational needs in the education system in the light of the new provisions of education law". The publication discusses new legal solutions and practical examples on organizing and providing psychological and pedagogical assistance, special education and individual compulsory one-year pre-school education and individual teaching.



The Education Development Center also organized various forms of professional development for teachers, including:

- conference "Students with special educational needs in the context of changes in education law";
- training for representatives of teacher training institutions: Supporting students with SEN as part of inclusive education - changes in education law;
- training for Leaders of Inclusive Education: Students with special educational needs in the context of changes in education law,
- information and consultation meetings for inspectors for special educational needs from Education Offices,
- cooperation and self-education network for SEN inspectors.
  - Government support for CPD courses: Yes

People experiencing permanent or periodic difficulties in communication, as well as members of their families and people in constant contact with authorized persons, may use the form of training in Polish Sign Language, the sign language system or methods of communication of deaf-blind people of their choice. The cost of the training may be co-financed by the State Fund for the Rehabilitation of Disabled Persons.

The Human Capital Program ("Program Operacyjny Kapitał Ludzki") was the largest program co-financed by the European Social Fund in the European Union in 2007-2013. It initiated and introduced many qualitative changes in public policies implemented in Poland. It contributed to improving the quality of the education system and adapting higher education and science to the needs of the labor market, and improving the operation of public administration.

There are projects and programs aimed at professional development of teachers of deaf students, but there is definitely a shortage of funding and support for projects from the government.

## 2. Situation of Deaf People in the Labour Market

- **Labor Market Overview:**
  - Difficulty finding jobs: Yes
  - Salary equality: No
  - Access to management positions: No
  - Deaf-owned businesses: rather no
  - Social entrepreneurship initiatives: There are not many specific social entrepreneurship initiatives. Deaf people work in social enterprises, but rarely set them up.



- **Government Support:**

- National policies/laws for labor market inclusion:

There are internships from the employment office, subsidies from PFRON funds for employing people with disabilities, and tools facilitating contact (e.g. online sign language interpreters). EU-funded projects and NGO activities also play an important role. Unfortunately, there is a lack of systemic solutions ensuring long-term assistance.

- Financial support for deaf entrepreneurs: Yes

### 3. State of Art in Digitalization in Education

- **Digitalization Overview:**

- Current status of digitalization in education:

The state of the art in the field of STEAM Education in Poland is worse than in most countries of UE. According to the main directions of the state's educational policy in Poland, there are two related to digital upskilling of teachers and STEAM education. First refers to developing methodological skills of teachers regarding proper and effective use of information and communication technologies in educational processes. Second should help teachers in developing pupils' basic and transversal skills, with the use of teaching aids.

- Integration of 3D technologies and STEAM Education: [Brief Overview]

As part of the "Laboratories of the Future" Program ("Laboratoria Przyszłości"), schools will receive financial support from the state for the purchase of technical equipment necessary to develop practical skills among children and youth. Over 3 million students from over 15,000 facilities have been equipped with 3D printers and specialized equipment thanks to which students can improve their talents, present acquired knowledge in a modern way and develop future competences. Over PLN 1.2 billion was allocated for this purpose.

"STEAM education at school" ("Edukacja STEAM w szkole") is a program addressed to teachers and educators to support and develop competences, emphasizing the active use of the STEAM method, independent creation and design of lessons, and building cooperation between teachers and students for effective teaching. Projects are being implemented to promote STEAM education in schools as a method of educating students in the fields of natural sciences, technology, engineering, art and mathematics.

- **National Support:**

- Policies promoting digital transformation: [Brief Overview]

The "Path to the Digital Decade" ("Droga ku cyfrowej dekadzie") program sets the directions for the development of the European Union's digital transformation by setting a number of general goals and digital targets, including: creating conditions favorable to innovation, structuring cooperation between the European institutions and Member States and creating a coherent and transparent Union monitoring and reporting mechanism. The program also establishes a framework for multi-country projects in this dimension.

The Digital Transformation Center team at the Ministry of Education and Science has created a proposal for a strategic policy for digital transformation in the area of education. The document covers well-thought-out state interventions, suggests the use of information and communication technologies in Polish schools and educational institutions - from kindergartens, through schools, to universities - and proposes actions aimed at counteracting the negative effects of using technology, such as cyber threats, disinformation and digital addiction. The vision of digitalization has been divided into several time perspectives: short-term (until 2025), medium-term (until 2030) and long-term (after 2030).

- Support for digital education of deaf students: Rather no

There is no broad support program for deaf students that would involve the use of digital technologies for learning and their integration in the teaching system. Existing solutions mainly concern hearing-impaired people who retain some residual hearing and are supported in joining hearing students.

The focus is on hearing aids, FM systems (a device that supports better hearing in difficult acoustic conditions, such as those observed in a school classroom), and induction loops. Computers with appropriate software facilitate learning reading, writing and mathematics, and can also be used in hearing and speech therapy to enrich vocabulary and perception, and visual memory and concentration exercises. A speech synthesizer that converts written text into speech and vice versa can be helpful when taking notes from classes and communicating with a hearing person.

#### 4. Conclusion

- **Key Findings:**
  - Summarize key findings from the national survey.

There are various programs, forms of support and funding sources aimed at helping children and young people with education. However, they most often concern people with other disabilities, special needs and learning difficulties. There is still a lack of support dedicated to deaf people.

Typically, deaf people are paired with hearing-impaired people, who are offered various forms of rehabilitation and maximum adaptation to hearing students. The distinctiveness of the deaf and the importance of deafness in their lives, which defines their identity, are ignored. For deaf people, this is not a defect that requires correction. Deafness is their feature, a determinant of their language, needs, and the entire Deaf Culture. Sign language is just one element of their identity. Teachers' knowledge of only the basics of sign language, without awareness of the Deaf Culture and the specificity of this community, does not allow for effective education.

Another problem is the lack of appropriate psychological support, also due to the lack of understanding of the specificity of the deaf, proper identification of their problems and definition of an action plan.

Educational materials are not properly simplified and translated into sign language grammar. As a result, deaf students are often pushed from class to class, without acquiring appropriate knowledge and competencies, without developing basic skills - independence, and creative thinking.

As a result, their life horizons are narrowed. They cannot use many public services. They do not have access to, or often even awareness of, many technologies that facilitate everyday functioning.

They enter the labour market with rudimentary qualifications, which condemns them to simple auxiliary work, etc. This situation discourages employers for whom employing deaf people involves high costs of hiring an interpreter, additional training and other adaptation activities.

- **Needs and Gaps:**

- Identify specific needs and gaps in VET education and labor market integration for deaf students.

- Stereotypical approach to deaf people, employers' unpreparedness to employ them and ignorance of how to ensure that they can perform many jobs safely.

- Low professional activation of deaf people.

- Doctors issue decisions limiting the ability to work or prohibiting work in certain positions.

- Educational centers do not prepare for being independent, including taking up work.

- Vocational education of the deaf does not correspond to the preferences and abilities of the deaf, nor to the labor market.

- a large language/communication barrier. Teachers lack knowledge of Polish Sign Language, and on the other hand, students do not know the Polish language to an adequate degree.

- Career counseling for the deaf is at a very low level.

- There is no specific type of employment contract for a disabled person in the Labour Code.

- Failure to adapt the workplace to an employee with a hearing disability in terms of his/her professional competences, communication and relationships with other employees.

- In Poland, deaf people generally work in auxiliary and manual positions.

# Infographic



**Poland**

## 3D4DEAF - Promoting digital transformation and social innovation in VET for better access of deaf students to the labour market



The 3D4DEAF aims to promote social inclusion and improve the outreach to people with fewer opportunities focusing on people with deafness/hearing impairments. The main objective is to develop a Training programme for VET teachers and students with deafness or hearing impairments to upgrade their 3D, coding, digital, and social entrepreneurial skills to meet the needs of the digital labour market and foster equal opportunities.

### NATIONAL REPORT RESULTS

Education of deaf/hearing impairment students

#### 1 National policies regarding the education

There are no separate policies regarding the education of the deaf, but there are some actions. At the academic level, there are Offices for Persons with Disabilities, aimed at eliminating all barriers and improving participation in the life of the academic community. Vocational courses and training are an area of lifelong learning that is willingly supported by the Polish government and EU Funds. Projects supporting vocational education, as well as training from district employment agencies, are carried out. Local governments raise money from the budget for investments in special schools. The Ministry of Education is working on solutions to help deaf students learn, e.g. "Miga! razem z nami".

#### 2 Training for the teachers

Education in the field of functioning of the deaf and hard of hearing can be obtained at 1st and 2nd-degree studies, as well as postgraduate studies in surdopedagogy, speech therapy, and special education. However, the study programs focus mainly on the issues of rehabilitation, correction of speech defects, and issues of social integration and education of the deaf. They lack topics related to Deaf Culture, sign language, the identity of the deaf as a linguistic minority, and many other important issues. There are no Polish Sign Language (PJM) courses, only occasionally as part of the study program, an artificial Sign Language System (SJM) course is available. The regulations do not indicate which of the languages (PJM, SJM) or at what level teachers working with students with hearing disabilities should know.

#### 3 National policies regarding the labor market

As part of the vocational rehabilitation system, the Deaf can be activated through training, internships, professional preparation for adults, intervention works, studies, as well as starting a business with a possible refund of social security contributions. Vocational Activity Centers, Sheltered Work Establishments and Vocational Therapy Workshops are being created. In addition, there are instruments to support the employment of people with disabilities addressed to employers, such as monthly wage subsidies, subsidies for creating or equipping workstations. Every employer employing at least 25 full-time employees is obliged to make monthly payments to the State Fund for Rehabilitation of the Disabled (PFRON). The deaf community is supported from its funds.

#### JOB POSITIONS FOR THE TARGET GROUP IN THE LABOR MARKET

- packer
- warehouse
- maintenance

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**Poland**

## Digitalisation of the education

### Training for the teachers

The report 'State of Industry 4.0 in Poland' indicates that the development of industry 4.0 in the country is dynamic, but still too slow to guarantee us an important position in this field on the international stage. There is still much to be done in terms of robotization and digitization of Polish education. This is attributed to the digital revolution. In Poland, there are over two million students with special needs, including the deaf. Especially this group requires investment in digital infrastructure, equipment, teacher competences and appropriate software. According to the main directions of the state's educational policy in Poland, there are two related to digital upskilling of teachers and STEAM education. But the programs such as this are no long-term. Such policies and programs are still lacking.

### FOCUS GROUPS RESULTS

3 focus groups organised in Poland

- VET TEACHERS: 5
- VET STUDENTS: 5 (4 girls, 1 boy)
- ENTREPRENEURS: 7

#### 5 Focus Group Results: VET Teachers

The main challenge for teachers is to communicate with the student so that they understand the instructions, questions, and educational materials. Teachers have access to language training, appropriate textbooks and other tools (Internet, mobile applications). An individual curriculum is used, tailored to the needs of the student. Psychological and pedagogical support is offered. Vocational training takes place mainly in special institutions. However, in practice, this does not always match the needs of deaf students. Access to specialized teachers and adapted materials is limited. At the same time, the education system is too complicated and demanding. Knowledge about Deaf Culture is also at a low level. More often artificial SJM is used instead of natural PJM. Emotional and social support is insufficient.

#### 6 Focus Group Results: VET Students

Deaf students must bend to the system, not the other way around. It starts with a lack of proper communication and a misunderstanding of their needs. Instead of developing an identity, they are forced to talk and work with a speech therapist. The education itself is based on speech and writing. If the teacher knows sign language, it is artificial SJM, not natural PJM. There is a lack of common materials developed in PJM grammar, properly simplified and visualized. Difficulties also occur when passing exams, where just reading the questions is a problem. Deaf people eventually graduate from school, but they are much less prepared for life than hearing graduates. They are not taught independence, thinking or creativity - instead, there is reproductive, memorized learning. All this limits the paths of development, which is why the Deaf are often forced into a given profession (usually simple manual work). It leads to the deaf's passivity, learned helplessness and expectation that hearing people will do their job.

#### 7 Focus Group Results: Entrepreneurs

There are internships from the employment office, subsidies from PFRON funds for employing people with disabilities, and tools facilitating contact (e.g. online sign language interpreters). EU-funded projects and NGO activities also play an important role. Unfortunately, there is a lack of systemic solutions ensuring long-term assistance. Most employers do not know sign language and are not aware of the functioning of the Deaf, which is why they are afraid to employ them - they do not know how to communicate with them, introduce them to work, settle tasks; how to deal with them. The availability of interpreters is insufficient and the associated costs further scare employers. Occupational physicians are also skeptical about admitting the Deaf to most professions. There is also no support from psychologists in sign language for Deaf people entering the labor market.

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## Italy

### National report findings

In Italy, the legal framework for deafness, governed by Law number 381 of 1971, distinguishes legal deafness from simple hearing loss. Deafness can be congenital or acquired within the developmental age, specifically before 12 years old, requiring atypical language development and intervention like speech therapy or cochlear implants. The law mandates an average hearing loss of equal to or greater than 75 decibels in medium frequencies for legal deafness. With approximately 60,000 deaf individuals in Italy, the education system adopted inclusion in 1977, prohibiting special schools by law and promoting mainstreaming in inclusive schools. Deaf students have the right to support teachers, communication assistants, and speech therapists, with services provided by the Ministry of Education, local government, and the Public Health System, respectively.

### Focus group findings

The deaf teacher joined the Magarotto Institute, so we had to explain our involvement in the Erasmus projects to him. The other students, some with little experience, while others with experience only in the basics, found what we have achieved so far interesting and recognized that a significant portion of the content could be applicable to both hearing and deaf students.

They expressed interest, and we invited them to explore not only the [3d4deafproject.eu](http://3d4deafproject.eu) project website but also the websites of the countries participating in the project, which show a high level of engagement and activity on social media to keep the project's objectives alive.

They are very interested and eager to learn more content in their school, including the use of the materials we demonstrated that can be used with the 3D printer. We responded that it is a long-term project, with development pillars focused on 3D printing, cloud-based platforms, mobile applications, and augmented reality, all aimed at creating business opportunities and promoting employment.

As a final conclusion, the participants emphasized the importance of acquiring some form of technical qualification in today's job market. Deaf and hearing students recognize the possibilities of expanding job opportunities in the job market, overcoming communication challenges with current technology. Furthermore, having a glossary of ICT technical terms can facilitate communication among students to enhance their understanding of concepts and processes. They are eager to experiment and are awaiting the arrival of the new 3D printers at the Magarotto Institute, which could serve as a foundation for expanding future knowledge in the job sector.

## Summary

### 1. Education of Deaf Students

- **Deaf Population Statistics:**

- Total deaf population: 60.000
- Number of deaf students: 7.200
- Overview of teaching system: Teaching system in Italy has a mandatory inclusive setting. No special schools are allowed. Specialized bilingual schools with hearing peers are organized and funded by local government. Deaf students are eligible for support teachers and communication assistants during school day. Families have the right to decide the methodology for their children and can choose for sign language, oral system or mixed options. Mostly for hearing families choose for oral method, while deaf families are into bilingual and bicultural system.
- National policies supporting deaf student education: deaf students education is mandatory and free for everyone, including deaf children with migrant background, from 6 years old, until 18. Nursery and kindergarten are not mandatory, yet highly recommended and facilitated. University is free for deaf students. Deaf students can apply for free hearing aids, free cochlear implant and speech therapy. In the school they will have a one-to-one communication assistant or sign language interpreter. The classroom in which he/she is included, will have a co-teaching system with an additional teacher, called support teacher. Deaf students have the right to pass examinations with the support of their communication assistants or sign language interpreters.

- **Teacher Training:**

- Teacher training requirements: Compulsory
- Specific training or studies: Master degree as Support Teacher of one year.
- Availability of seminars/conferences: Yes
- Government support for CPD courses: Yes

### 2. Situation of Deaf People in the Labour Market

- **Labor Market Overview:**

- Difficulty finding jobs: Yes
- Salary equality: Yes
- Access to management positions: not easy, but yes

- Deaf-owned businesses: Yes
- Social entrepreneurship initiatives: there are some small businesses owned by deaf persons, in several economic sectors, like restaurants, cafeterias, ICT company, educational institutions,
- **Government Support:**
  - National policies/laws for labor market inclusion: In Italy policies for labor market are based on a national law, which gives a framework to local governments to provide services and support. Local governments manage employment services, those have offices to support inclusion for workers with disabilities. Support includes: grant for internships in companies, in order to get training without costs from the company in the view of future hiring of the person with disabilities; funding for adaptation of the work place; reduction of taxation for the company. Companies and public bodies are expected to hire a minimum number of employees/workers with disabilities as mandatory, in different amounts accordingly to their size and economic sector.
  - Financial support for deaf entrepreneurs: not specific for deaf entrepreneurs

### 3. State of Art in Digitalization in Education

- **Digitalization Overview:**
  - Current status of digitalization in education: secondary schools have ICT classes in mainstream curricula, while only after the COVID pandemic period the use of platforms for sharing notes, materials and exercises is widespread. The Italian Ministry of Education uses for public schools Google Classroom. Academic rolls and school registers are online only, in different platforms and mobile apps.
  - Integration of 3D technologies and STEAM Education:

3D technologies are included only in technical and scientific secondary education. 3D is not in the regular curriculum, yet can be included by teachers within their freedom of teaching.
- **National Support:**
  - Policies promoting digital transformation:

Yes for companies, mainly via local governments.

Schools are eligible for grants by the Ministry of Education for specific projects with public call opening once a year.
  - Support for digital education of deaf students:

Not directly, but through the schools



#### 4. Conclusion

- **Key Findings:**

The education of the deaf, in Italy, is based on mainstream school environments, with specific supports, both from the school welcoming the deaf students and the students in one-to-one accessibility provisions.

- **Needs and Gaps:**

- Identify specific needs and gaps in VET education and labor market integration for deaf students.

VET education gap: deaf students needs also “deaf space” environments in the education process, where to strengthen their identity and belonging. VET schools, moreover, fight to get sufficient funding to provide adequate support in Sign Language for their deaf students

Labor Market gap: high unemployment rate and insufficient support after the hiring process.

# Infographic



**3D4DEAF - Promoting digital transformation and social innovation in VET for better access of deaf students to the labour market**

The 3D4DEAF aims to promote social inclusion and improve the outreach to people with fewer opportunities focusing on people with deafness/hearing impairments. The main objective is to develop a Training programme for VET teachers and students with deafness or hearing impairments to upgrade their 3D, coding, digital, and social entrepreneurial skills to meet the needs of the digital labour market and foster equal opportunities.



## NATIONAL REPORT RESULTS

Education of deaf/hearing impairment students

**1 National policies regarding the education**

Legal deafness is not simply a hearing loss, and in Italy is regulated by Law Number 381 of 1971. This law establishes that deafness can be congenital or acquired during the developmental age, specifically within 12 years old.

This specific age span includes the consequence of atypical language development, which means that the acquisition of spoken language must have occurred in an unnatural way, i.e. through speech therapy re-education and the use of hearing aids or cochlear implants.



**2 Training for the teachers**

Deaf students, by law, can request and obtain the following services:

- Support teachers:** provided by the Ministry of Education, they support the whole class where a deaf student is enrolled, to design an inclusive learning environment. This professional is not specialized in deafness but in inclusive education.
- Communication assistants:** provided by the local government, they support the deaf child with sign language, lipreading, or any other specific linguistic support. This professional is specialized in deafness.
- Speech therapists:** provided by the Public Health System, they work in cabinets in the hospital or in outpatient clinics.

The situation of deaf people in the labor market

**3 National policies regarding the labor market**

There are two main laws:

- Law number 104 of 1992:** gives a very precise definition of disability and establishes a general framework for the rights of people with disabilities to get a job.
- Law number 68 of 1999:** The law makes it mandatory for both public institutions and private companies to hire a minimum percentage of workers with disabilities and special needs.

**JOB POSITIONS FOR THE TARGET GROUP IN THE LABOR MARKET**

-  Computer technician
-  Teacher or sign language researcher
-  Deaf people can do any job if there is accessibility

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**Digitalisation of the education**

**4 Training for the teachers**

The state of the art in the field of digitalization, industry 4.0, 3D technologies, and education in Italy appears to be limited in relation to the specific concerns expressed by students and teachers. The focus seems to be on addressing challenges related to sign language skills among teachers, accessibility in education, individualized teaching support, career guidance, and the need for curriculum improvements related to the Deaf culture and community.

## FOCUS GROUPS RESULTS

3 focus groups organised in Italy



**5 Focus Group Results: VET Teachers**

VET teachers discussed challenges faced during the learning process, including the persistent use of the Italian language instead of Italian Sign Language. The lack of subjects related to Deaf culture was highlighted, despite the recent introduction of Sign Language classes. Teachers seek better in-service training to address diverse student needs and requested improved Sign Language knowledge and interpreters. They recognized the need for enhanced guidance after school, as VET students are not oriented towards university studies but require support for inclusion in the job field.

**6 Focus Group Results: VET Students**

students in the focus group faced challenges with limited Italian Sign Language proficiency among teachers and inadequate support hours. Non-native speakers struggled with the language. They aspired to various professions but lacked appropriate courses and practical experience. Accessible services like lip-reading and sign language interpreters were valued. Passing exams proved difficult, and career counseling was lacking. The existing educational offerings didn't align with their interests, prompting them to consider additional courses after secondary school.

**7 Focus Group Results: Entrepreneurs**

The study reveals that deaf individuals face communication and training challenges, hindering their professional growth due to a lack of accessible tools, training opportunities, and work-related information. Employment barriers result from a limited understanding between the hearing and deaf communities, leading to reduced job prospects. Tailored training, job-seeking support with deaf interpreters, and dedicated platforms are crucial. Further measures are needed to fully integrate deaf employees, despite existing government support. Companies benefit from employing deaf individuals, gaining insights and offering specialized services, promoting inclusion in the workplace.

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## Cyprus

### National report findings

There is no specific data for the number of deaf people in Cyprus, however, the estimated number of deaf people or hearing loss is around 3,000 which is estimated by the deaf community and deaf school of Cyprus.

In education, approximately there are 200 deaf or hearing loss children which studied in primary and secondary education. a smaller number of children are studying in the deaf school of Cyprus which is located in Nicosia.

In Cyprus, 3D education and social entrepreneurship in VET schools should be improved and the Ministry of Education and Culture should enhance the schools with the appropriate equipment, resources and teaching seminars/courses for teachers/trainers. Additionally, the deaf or hearing loss community in Cyprus, should be supported by the government and the community in general regarding 3D and social entrepreneurship meaning that they should have provide them with the necessary information, training etc.

One of the permanent claims of people with hearing loss in Cyprus is the right to work. While there are now many university graduates, prejudice against people with disabilities still exists, which is why the unemployment rate among people with hearing loss is huge.

Unfortunately, lack of support and guidance prevents people with hearing loss from setting up their own businesses while those who have taken the risk have found it very difficult to survive.

### Focus group findings

In each partner country, 3 focus groups was organised for entrepreneurs, teachers and students.

In Cyprus, the focus group with entrepreneurs was divided into one-to-one discussions due to the difficulty of the participants finding a common date. Some of the focus group discussions were organised on the 29th of March, 20th of April, 26th of April, and the 9th of May in total 5 entrepreneurs from different backgrounds. Entrepreneurs really enjoyed the focus group and the discussion as part of the 3D4DEAF project. The main point that they mentioned is the importance of communication between all the employees in a company and the support provided to deaf people. In addition, they would like more LLL opportunities and easier access to the labour market and to be more motivated to do any job they would like.

The focus group with VET teachers was organized in person on the 25th of April 2023 with 5 VET teachers from the School of the Deaf in Nicosia, Cyprus. 2 members from Emphasys were the facilitators of the focus group discussion. the VET teachers of the school of the deaf really enjoyed the focus group and the discussion as part of the 3D4DEAF project. The main point that they mentioned is that is very important for the Cyprus educational system to have as a criterion and be mandatory to be a school teacher in special schools to know sign language. Additionally, is very important for the Cypriot government to support deaf students with equipment in the classroom.

The focus group with students was organized in person on the 25th of April 2023 with 5 VET students from the School of the Deaf in Nicosia, Cyprus. 2 members from Emphasys were the facilitators of the focus group discussion. The students of the School of the Deaf really enjoyed the focus group and the discussion as part of the 3D4DEAF project. The main point that they mentioned is that they are happy with the school curriculum but they would like to use more technology as part of their everyday lessons and also they would prefer all the teachers to know sign language. Finally, they suggest that the labour market should have advanced technology that would help them with the interpretation.

## Summary

### 1. Education of Deaf Students

- **Deaf Population Statistics:**
  - Total deaf population: 3,000
  - Number of deaf students: 200
  - Overview of teaching system: The education system in Cyprus is based on a centralized educational model managed by Ministry of Education, Sports and Youth. This implies that the financial resources, school curricula and additional programs as well as the teaching staff (appointments, promotions etc.) are controlled by the state.
  - National policies supporting deaf student education: In Cyprus, there is quota legislation, where in announcements of positions in the public sector, 10% of the positions concern people with disabilities. In addition, the Department of Social Integration of Persons with Disabilities announces Financial Plans to private companies, for grants to hire persons with Disabilities.
- **Teacher Training:**
  - Teacher training requirements: The teacher training requirements are optional. There are no specific data for the teachers who teach deaf or hearing loss students, however, in primary and secondary education the teachers are authorized by the government and they learn Cypriot Sign Language so they can communicate with the children.
  - Specific training or studies: Is not necessary to finish any specific study or course.
  - Availability of seminars/conferences: Yes/No
  - Government support for CPD courses: There are no CPD course related to courses for teachers in this field, Cyprus Government carries out CPD courses related to different studies fields. On the other hand, Cyprus College, The Institute of Certified Public Accountants of Cyprus, or even the University of Central Lancashire offer CPD's for anyone interested too.

## 2. Situation of Deaf People in the Labour Market

- **Labor Market Overview:**
  - Difficulty finding jobs: Yes
  - Salary equality: No
  - Access to management positions: No
  - Deaf-owned businesses: No
  - Social entrepreneurship initiatives: There no specific social entrepreneurship initiatives
- **Government Support:**
  - National policies/laws for labor market inclusion: In Cyprus, there is quota legislation, where in announcements of positions in the public sector, 10% of the positions concern people with disabilities. In addition, the Department of Social Integration of Persons with Disabilities announces Financial Plans to private companies, for grants to hire persons with Disabilities.
  - Financial support for deaf entrepreneurs: No

## 3. State of Art in Digitalization in Education

- **Digitalization Overview:**
  - Current status of digitalization in education: Cyprus launched its own digital strategy named "Digital Strategy for Cyprus" in 2012 and has seen updates in 2015 and 2018 to correlate with the "Digital Agenda for Europe". Its main objective lies in improving digital literacy for all unemployed workforce and businesses. In addition, invest in lifelong learning programmes with an emphasis on digital literacy and digital entrepreneurship. Secondary Technical and Vocational Education (STVE) in Cyprus is offered in two directions Theoretical and Practical. The duration of studies in both directions is three years.
  - Integration of 3D technologies and STEAM Education: Concerning digitalisation in VET schools starting from 2005, the Ministry of Education and Culture (MoEC) in the Republic of Cyprus has initiated an ambitious Educational Reform Programme intending to turn the vision of an efficient and more modernized educational system that will match today's world's needs and challenges. Funding by Europe has promoted ICT dramatically in the public school sector in recent years. Under the Ministry of Education, Sports and Youth's coat, an ICT integration plan has been implemented in the last seven years. This program aims to efficiently use Information and Communication Technologies (ICTs) in the educational process and improve students' and teachers' digital literacy.



- **National Support:**

- Policies promoting digital transformation: Cyprus launched its own digital strategy named "Digital Strategy for Cyprus" in 2012 and has seen updates in 2015 and 2018 to correlate with the "Digital Agenda for Europe". Its main objective lies in improving digital literacy for all unemployed workforce and businesses. In addition, invest in lifelong learning programmes with an emphasis on digital literacy and digital entrepreneurship.
- Support for digital education of deaf students: No

#### 4. Conclusion

- **Key Findings:**

- In Cyprus, 3D education and social entrepreneurship in VET schools should be improved and the Ministry of Education and Culture should enhance the schools with the appropriate equipment, resources and teaching seminars/courses for teachers/trainers. Additionally, the deaf or hearing loss community in Cyprus, should be supported by the government and the community in general regarding 3D and social entrepreneurship meaning that they should have provide them with the necessary information, training etc. One of the permanent claims of people with hearing loss in Cyprus is the right to work. While there are now many university graduates, prejudice against people with disabilities still exists, which is why the unemployment rate among people with hearing loss is huge. Unfortunately, lack of support and guidance prevents people with hearing loss from setting up their own businesses while those who have taken the risk have found it very difficult to survive.

- **Needs and Gaps:**

- There are no job opportunities for deaf students to enter the labor market especially to be social entrepreneurs. The government should support and launch specific policies for the deaf community in order to support the VET educational system of Cyprus and to promote the job opportunities.

# Infographic




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### NATIONAL REPORT RESULTS

Education of deaf/hearing impairment students

#### 1 National policies regarding the education

The education system in Cyprus is based on a centralized educational model managed by MoEC. Most of the laws in Cyprus specifically accommodate special-needs children. Moreover, the rights illustrated in the abovementioned laws refer to ensuring personal care with supportive bodies, and services that can support daily living and work such as an interpreter or a support worker, or any other support that is deemed necessary, social and financial rehabilitation services, professional evaluation and orientation and professional training and employment in the open labor market.



**NUMBER OF DEAF/HEARING IMPAIRMENT STUDENTS IN CYPRUS**

# 3,000

#### 2 Training for the teachers

In VET education the teachers are authorized by the MoEC and they learn Cypriot Sign Language so they can communicate with the children. It is not necessary to finish any specific study or course. In addition to this, although currently there is no CPD course related to courses for teachers in this field, Cyprus Government carries out CPD courses related to different studies fields. On the other hand, Cyprus College, The Institute of Certified Public Accountants of Cyprus, or even the University of Central Lancashire offer CPDs for anyone interested too.

The situation of deaf people in the labor market

#### 3 National policies regarding the labor market

In Cyprus, there is quota legislation, where in announcements of positions in the public sector, 10% of the positions concern people with disabilities. In addition, the Department of Social Integration of Persons with Disabilities announces Financial Plans to private companies, for grants to hire persons with Disabilities including deaf or hearing loss impairment people.

### JOB POSITIONS FOR THE TARGET GROUP IN THE LABOR MARKET







**Handcrafts      ICT      Cooking**



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## Digitalisation of the education

### 4 Training for the teachers


Under the MoEC, an ICT integration plan has been implemented in the last seven years in all schools. This program aims to efficiently use Information and Communication Technologies (ICTs) in the educational process and improve students' and teachers' digital literacy. The Ministry has revised the National Curriculum of all subjects and all education sectors' timetables (primary, secondary, and VET education) as part of the Education Reform Programme. The focus of the new curriculum is to meet society's needs. This focus, in effect, influenced the Curriculum of ICT.

### FOCUS GROUPS RESULTS


3 focus groups organised in Cyprus



**VET TEACHERS**  
5 VET teachers



**VET STUDENTS**  
5 VET students



**ENTREPRENEURS**  
5 entrepreneurs

#### 5 Focus Group Results: VET Teachers


The focus group with VET Teachers was organized in person on the 25th of April 2023 with 5 VET Teachers from the School of the Deaf in Nicosia, Cyprus. The main point that they mentioned during the discussion is that is very important for the Cyprus educational system to have as a criterion and be mandatory to be a school teacher in special schools to know sign language. Additionally, it is very important for the Cypriot government to support deaf students with equipment in the classroom.

#### 6 Focus Group Results: VET Students

The focus group with VET Students was organized in person on the 25th of April 2023 with 5 VET students from the School of the Deaf in Nicosia, Cyprus. The main point that they mentioned during the discussion is that they are happy with the school curriculum but they would like to use more technology as part of their everyday lessons and also they would prefer all the teachers to know sign language. Finally, they suggest that the labour market should have advanced technology that would help them with the interpretation.

#### 7 Focus Group Results: Entrepreneurs

The focus group with entrepreneurs was divided into one-to-one discussions due to the difficulty of the participants finding a common date. Some of the focus group discussions were organized on the 29th of March, 20th of April, 26th of April, and the 9th of May in total 5 entrepreneurs from different backgrounds. The main point that they mentioned is the importance of communication between all the employees in a company and the support provided to deaf people. In addition, they would like more LLL opportunities and easier access to the labour market and to be more motivated to do any job they would like.



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## Greece

### National report findings

In Greece, the enrollment of deaf students in Vocational Education and Training (VET) centers has seen a rise, though challenges persist in their access to higher education. While the Greek State offers interpreters for courses, funding shortages create difficulties, hindering communication and participation. Volunteer interpreters, though present, are insufficient. Some teachers provide additional materials to aid understanding, particularly in non-theoretical schools. However, not all teachers do so unless informed by deaf students, and collaboration with peers becomes vital for supplementary learning.

The employment landscape for deaf individuals mirrors educational challenges. Limited knowledge of sign language among employers impedes job prospects, making communication and telephone interactions challenging. Reports indicate a prevalence of deaf workers in low-skilled positions with correspondingly low wages. Social connections often play a pivotal role in job placement, and there is a noted lack of interpreter services leading to difficulties in workplace communication. While the Ministry of Labor offers video call services, grassroots initiatives, like the start-up HandsUp, actively promote entrepreneurship and accessibility for the deaf through sign language interpretation and other services.

The digitalization of education in Greece, particularly the integration of e-learning platforms in VET centers, has positively impacted deaf students. These platforms allow for the upload of learning materials, recorded lectures (sometimes with subtitles), and hybrid course formats, facilitating accessibility. However, challenges persist, such as the lack of uniform implementation and the necessity for ongoing efforts to adapt to technological advancements and evolving educational landscapes.

In conclusion, despite efforts to enhance inclusivity in education and the labor market for the deaf community in Greece, significant challenges remain. Private initiatives, such as HandsUp, have been crucial due to limited state funding for interpretation and career development. Greece lags in providing organized structures and technological infrastructure tailored to the needs of people with hearing disabilities, reflecting a broader societal struggle toward full integration.

### Focus group findings

In the discussion, participants shared insights into the employment landscape for deaf individuals. Many deaf friends were found working in fields such as graphic design, secretarial work, and office support, emphasizing roles that predominantly involve computer use. Some who graduated from the gymnastics academy found employment in special education schools, while others taught sign language or worked in family businesses. Manual labor, including cleaning and kiosk jobs, was also common. Finding work independently proved challenging, with reliance on word of mouth and community connections. Additionally, some opted not to work, relying on benefits and continuing studies to receive allowances.

A general observation highlighted the struggles faced by deaf individuals in the workplace. They often encountered issues such as inadequate skills assessment, underpayment, lack of insurance, and frequent job changes due to exploitation or poor conditions. Both private and public sectors were deemed unreliable in providing suitable employment opportunities.

Advice for deaf individuals seeking employment for the first time included emphasizing knowledge, particularly in foreign languages and digital skills. Strong writing skills, effective communication, and adaptability to societal rules and schedules were also deemed crucial for success. The importance of social skills, friendliness, and a positive attitude were emphasized, encouraging interaction with hearing individuals and flexibility in various situations.

Discussions also touched upon the need for online educational material related to deaf people and the labor market. Participants expressed interest in resources covering accounting and financial advice, simplified finance and paperwork, interview tips, social and labor market information, and details about job opportunities. The preference was for material presented with short words, video projections, concise texts, and numerous visuals to enhance accessibility.

From a teacher's perspective, it was noted that attention to special education has decreased since 2000. Special needs materials in schools often go unused, and there is limited interaction between the deaf and hearing communities. The observation highlighted a tendency for those who attended special education schools to be introverted and isolated. The importance of practical occupations, such as cooking, physiotherapy, and graphic design, was emphasized, suggesting that deaf individuals should focus on acquiring at least one specialization in a vocational school or IEK to enhance their employability and integration into society.

## Summary

### 1. Education of Deaf Students

- **Deaf Population Statistics:**

- Total deaf population: 56.500
- Number of deaf students: N/A
- Overview of teaching system: In Greece, the education system for deaf students has seen an increase in enrollment in Vocational Education and Training (VET) centers. While the state provides interpreters, funding shortages pose challenges, hindering effective communication. Volunteer interpreters are insufficient, and additional materials provided by teachers vary. Collaboration with peers becomes crucial for supplementary learning. Despite efforts to enhance inclusivity, challenges persist, reflecting a broader societal struggle toward full integration, with private initiatives playing a pivotal role due to limited state funding.
- National policies supporting deaf student education: In Greece, national policies supporting the education of deaf students aim to address challenges in access to higher education. While there is an increase in enrollment in Vocational Education and Training (VET) centers, funding shortages impact the provision of interpreters, hindering effective communication. The state's efforts include offering interpreters for courses, but limitations persist, and volunteer interpreters are insufficient.

Some teachers provide additional materials, especially in non-theoretical schools, but their consistency varies. The national policies indicate an awareness of the need for inclusivity, but the challenges highlight gaps in implementation and funding, reflecting a broader societal struggle toward full integration.

- **Teacher Training:**

- Teacher training requirements: Compulsory
- Specific training or studies: Greek teachers for the deaf typically pursue a bachelor's degree in special education or a related field, gaining foundational knowledge in educational principles and pedagogy. Certification through the Greek Ministry of Education may be necessary, requiring candidates to pass exams and meet specific criteria to ensure their competence in educating deaf students.
- Availability of seminars/conferences: Yes
- Government support for CPD courses: Yes

## 2. Situation of Deaf People in the Labour Market

- **Labor Market Overview:**

- Difficulty finding jobs: Yes
- Salary equality: No
- Access to management positions: Yes
- Deaf-owned businesses: Yes
- Social entrepreneurship initiatives: In Greece, "SynAthina" is a notable social entrepreneurship initiative focused on community development, fostering collaboration between citizens, businesses, and the municipality to address local challenges. Also, the "Social Dynamo" project by the Bodossaki Foundation provides support and resources to social entrepreneurs, offering training, networking opportunities, and access to funding for impactful ventures.

Finally, "Impact Hub Athens" serves as a collaborative workspace and incubator for social entrepreneurs, providing a supportive environment for innovative projects addressing social and environmental issues.

- **Government Support:**

- National policies/laws for labor market inclusion: Greece's approach to the labor market inclusion of deaf individuals is shaped by both European Union directives and national legislation. Adhering to the Equal Treatment in Employment Directive (2000/78/EC), Greece works to combat discrimination based on disability, incorporating measures that accommodate the needs of disabled individuals, including the deaf.

While specific laws may address broader disability rights, the inclusion of deaf people in the workforce could be influenced by national employment quotas, accessibility standards, and employment support programs. Potential initiatives may encourage businesses to hire individuals with disabilities, ensuring workplace accessibility and providing vocational training and assistance for workplace accommodations. To obtain the most current and detailed information, it is advisable to refer to Greek government agencies responsible for labor and disability issues or legal databases for the latest legislative updates.

- Financial support for deaf entrepreneurs: No

### 3. State of Art in Digitalization in Education

- **Digitalization Overview:**

- Current status of digitalization in education: Greece has been actively advancing digitalization in education, with efforts to integrate technology into the learning environment. The country has implemented digital tools and platforms to enhance teaching methods, foster online collaboration, and facilitate remote learning, particularly in response to challenges posed by the COVID-19 pandemic. Initiatives include the use of e-learning platforms, digital textbooks, and interactive educational resources. The Greek government has also been investing in infrastructure and connectivity to ensure widespread access to digital education resources. However, the specific status may evolve, and for the latest information on the current state of digitalization in education in Greece, it is recommended to consult official education authorities or recent reports on educational technology developments in the country.
- Integration of 3D technologies and STEAM Education: Greece has shown a growing interest in integrating 3D technologies and STEAM (Science, Technology, Engineering, Arts, and Mathematics) education. Efforts have been made to incorporate 3D printing, modeling, and virtual reality tools into STEAM curricula to enhance hands-on learning experiences. Some educational institutions and programs in Greece have embraced innovative teaching methods, using 3D technologies to illustrate complex scientific concepts and promote interdisciplinary learning. However, the extent of integration may vary across schools and regions. Continued initiatives and investments in educational technology may further advance the incorporation of 3D technologies within STEAM education in Greece. For the most up-to-date information, it is recommended to refer to official education sources, educational technology reports, or relevant government initiatives.

- **National Support:**

- Policies promoting digital transformation: Greece has been actively pursuing policies to promote digital transformation across various sectors, including education. The Greek government has initiated strategies to enhance digital literacy, infrastructure, and overall technological advancement. In education, efforts have been made to integrate digital tools and platforms, facilitate e-learning, and ensure widespread access to technology. Policies focus on fostering innovation, supporting research and development in digital technologies, and creating an environment conducive to entrepreneurship and digital businesses. Additionally, the National Digital Strategy for Education outlines specific objectives to leverage technology for more effective teaching and learning. However, the specific policies and their impact may evolve, and it is advisable to consult the latest government documents, reports, or official announcements for the most current information on policies promoting digital transformation in Greece.
- Support for digital education of deaf students: No

#### 4. Conclusion

- **Key Findings:**

- The National Report on deaf education in Greece reveals an increasing enrollment of deaf students in Vocational Education and Training (VET) centers, though challenges persist in accessing higher education. The provision of interpreters by the state faces funding limitations, hindering effective communication, with volunteer interpreters being insufficient. Teachers vary in providing additional materials, emphasizing collaboration with peers for supplementary learning. The employment landscape for deaf individuals mirrors educational challenges, with limited sign language knowledge among employers impacting job prospects. While digitalization in education positively influences deaf students, significant challenges remain, reflecting a broader societal struggle toward full integration, necessitating private initiatives due to limited state funding..

- **Needs and Gaps:**

- Deaf education in Greece, as highlighted in both the National Report and Focus Group findings, faces significant challenges and reveals notable gaps. The need for improved accessibility and inclusivity in higher education is evident, with funding shortages impacting interpreter services, hindering effective communication. The employment landscape mirrors educational challenges, emphasizing the importance of sign language knowledge among employers. Gaps in workplace communication, inadequate skills assessment, underpayment, and frequent job changes underscore the struggles faced by deaf individuals. Moreover, the lack of organized structures and technological infrastructure tailored to the needs of the deaf community reflects broader societal hurdles toward full integration. Private initiatives, such as the start-up HandsUp, play a crucial role due to limited state funding for interpretation and career development, highlighting the urgency for more comprehensive and sustained support in deaf education.



## Infographic:




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The 3D4DEAF aims to promote social inclusion and improve the outreach to people with fewer opportunities focusing on people with deafness/hearing impairments. The main objective is to develop a Training programme for VET teachers and students with deafness or hearing impairments to upgrade their 3D, coding, digital, and social entrepreneurial skills to meet the needs of the digital labour market and foster equal opportunities.

### NATIONAL REPORT RESULTS

Education of deaf/hearing impairment students

**1 National policies regarding the education**

In Greece, policies for the education of the deaf emphasize the provision of specialized educational programs, the integration of students with hearing impairments into mainstream schools with appropriate support, the use of sign language as a medium of instruction, and the promotion of inclusive practices and equal access to educational resources for deaf students. These policies strive to ensure that deaf individuals receive the necessary support and resources to reach their full educational potential.



**NUMBER OF DEAF/HEARING IMPAIRMENT STUDENTS IN GREECE**

**N/A**

**2 Training for the teachers**

The Ministry of Education provides specialized training programs and workshops to enhance the professional development of teachers working with deaf students. These initiatives focus on building knowledge and skills related to sign language instruction, communication strategies, inclusive practices, and the effective use of assistive technologies. Additionally, partnerships between educational institutions and organizations specializing in deaf education are established to facilitate collaboration, resource sharing, and the exchange of best practices among educators in the field.

The situation of deaf people in the labor market

**3 National policies regarding the labor market**

Law 3896/2010 promotes the employment and integration of disabled individuals, including those with hearing impairments, by imposing an obligation on public and private sector employers to reserve a specific percentage of their workforce for disabled employees. Additionally, vocational rehabilitation programs and employment support services are available to provide training, job placement assistance, and ongoing support for deaf individuals seeking employment.

**JOB POSITIONS FOR THE TARGET GROUP IN THE LABOR MARKET**



Structures



Cooking



Illustration



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**4 Digitalisation of the education**

### Training for the teachers

Educational institutions have increasingly adopted digital tools and platforms to facilitate remote learning and provide inclusive educational experiences. Online resources, such as e-learning platforms, video conferencing, and captioning services, have been utilized to enhance communication and accessibility for deaf students. The integration of digital technologies has helped create more interactive and engaging learning environments, allowing educators to utilize visual aids, multimedia content, and real-time communication tools to cater to the specific needs of deaf students and promote their educational success.

### FOCUS GROUPS RESULTS

3 focus groups organised in Greece



**VET TEACHERS**  
5



**VET STUDENTS**  
2



**ENTREPRENEURS**  
1

**5 Focus Group Results: VET Teachers**

Teachers put a high emphasis on the fact that educational institutions should encourage deaf students to be more extrovert and dynamic when it comes to interacting with hearing people, and try to incorporate themselves in the hearing community more actively. They also mentioned that the Greek VET centers should be upgraded digitally in order to comply with today's standards of the labor market.

**6 Focus Group Results: VET Students**

Students mentioned several hindrances when entering the labor market: limited availability of sign language interpreters and inadequate knowledge of sign language among employers and colleagues, negative stereotypes and prejudice, lack of awareness regarding assistive technologies as well as the absence of specialized career guidance and support services. All these can make it difficult for deaf students to navigate the job market and secure suitable employment opportunities.

**7 Focus Group Results: Entrepreneurs**

Limited access to communication resources, such as sign language interpreters, may impede effective communication with hearing business partners, clients, and employees. Difficulties in accessing funding and support networks tailored to the needs of deaf entrepreneurs can also hinder business development. Additionally, negative perceptions and stereotypes related to deafness may create biases and skepticism among potential investors and customers.



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## Spain

### National report findings

In general there are no specific STEAM programs for deaf students. Public entities have passed laws that integrate "inclusion" in all its forms as a tool to overcome STEAM skills. It follows that it is the trainer himself/herself who adapts the STEAM program or activity to each individual need.

In reality, for the trainers, there are a lot of resources that are not adapted to the deaf community. Especially when it comes to subtitles or signed videos.

Only a few of the videos have automatic subtitles, almost always in English with a vocabulary that is not very accessible. MOOC or NOOC courses, most of them have the same problem, they are oriented to a massive community with tutorial videos not adapted to the deaf community. In some cases, some tutorials have been found in American Sign Language.

There is a wide variety of laws that are aimed at justifying the need to create a regulatory framework that implements digitalization 4.0 in society. With very generalist development plans and with little detail towards effective learning and oriented to the deaf community.

We talk about all the applications for programming, 2D or 3D design and STEAM, many of which are open to certain content, but when we want to make a deeper use of that application we find the need to face an economic payment.

The effectiveness in ICT learning lies in being able to scale the ICT knowledge in a practical way, and that each deaf user can find the resource adapted to their level. The next step is to motivate continuous learning and to seek autonomy and excellence in order to grow in the Digital 4.0 world both at work and personally.

In conclusion: 1) that hearing impaired persons can compete successfully in the work market on their own merits and needing only little advice and support and 2) and need stability for these projects based on the excellent results achieved.

### Focus group findings

Three focus groups were conducted in Spain, comprising 5 vocational education and training (VET) teachers, 6 VET students, and 5 deaf entrepreneurs.

In VET Teachers' focus group, the uneven distribution of resources across education stages, prioritizing early education, is a notable concern. In VET, adjustments are made to facilitate exam access, including statement size reduction, bold keyword highlighting, and extended time. Overcoming communication barriers involves subtitling tools, a sign language glossary, and translators for audiovisual materials. Cooperative activities and labs enhance content acquisition, autonomy, and support the inclusion of deaf students.

VET Students' focus group: Students encounter challenges in heterogeneous communication due to diverse auditory abilities. Despite facing difficulties, they strive for professional progress. While some focus on achieving good grades, others settle for passing, and a few aim for excellence. Views on the curriculum vary, with some aligning it with future career goals and others favoring a practical, hands-on approach.



Deaf Entrepreneurs' focus group: Communication poses challenges in administrative work and telephone use. Lack of interpreters in meetings or with colleagues is difficult but not insurmountable. Summaries may be provided but might not capture all discussed information. Hiring interpreters adds to expenses. Hearing disabilities may limit job opportunities due to a lack of awareness. Online courses claiming accessibility may disappoint with inaccurate or incomplete subtitles.

## Summary

### 1. Education of Deaf Students

- **Deaf Population Statistics:**

- Total deaf population: Hearing disabilities 1.230.000 (people over 6 years old) 5300 (up to 5 years old). Deaf population using sign language 27.300. (data 2022)
- Number of deaf students: 9.497 (data from 2020)
- Overview of teaching system:

In Spain, schools are organized into public, private, and charter schools. Charter schools have private management with partial state funding based on student needs. Various schooling models for deaf pupils, from full-time ordinary groups to special education centers.

- National policies supporting deaf student education:

LOMLOE law emphasizes universal accessibility to inclusive education. Spanish Sign Languages Act recognizes sign languages and promotes their inclusion in education.

- **Teacher Training:**

Teacher training is compulsory.

- Specific training or studies in Spanish Sign Language and special education are required.
- Seminars/conferences and government support for CPD courses are available.

### 2. Situation of Deaf People in the Labour Market

- **Labor Market Overview:**

- Difficulty finding jobs: Yes
- Salary equality: depending if degree is required or not
- Access to management positions: very difficult

- Deaf-owned businesses: very few
- Social entrepreneurship initiatives: Limited initiatives for deaf entrepreneurs.

- **Government Support:**

- National policies/laws for labor market inclusion: Limited policies.
- Financial support for deaf entrepreneurs: No significant financial support.

### 3. State of Art in Digitalization in Education

- **Digitalization Overview:**

- Spain has experienced a significant surge in digitalization within the education sector since 2020. The integration of 3D technologies and STEAM Education (Science, Technology, Engineering, Arts, and Mathematics) is actively underway, reflecting a commitment to modernize educational approaches.

- **National Support:**

- Policies promoting digital transformation: Policies promoting digital transformation have been implemented to propel the integration of technology in education.
- Support for digital education of deaf students: yes

### 4. Conclusion

- **Key Findings:**

- Deaf students face challenges in accessing equal opportunities in education and the labor market. Limited financial and policy support for deaf entrepreneurs.

- **Needs and Gaps:**

- Address gaps in salary equality, management positions, and deaf-owned businesses. Enhance policies and financial support for the education and employment of deaf individuals.

# Infographic




## 3D4DEAF - Promoting digital transformation and social innovation in VET for better access of deaf students to the labour market



The project is aligned with the European Union Charter of Fundamental Rights and 'The right of persons with disabilities to benefit from measures designed to ensure their independence, social and occupational integration and participation in community life. The main objective is to develop a Training programme for VET teachers and school students with deafness or hearing impairments to upgrade their 3D, coding, digital and social entrepreneurship skills to meet the needs of the digital labour market and foster equal opportunities.

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### NATIONAL REPORT RESULTS

Education of deaf/hearing impairment students

**1 National policies regarding the education**

The implementation of the LOMLOE law in the educational system refers to students with disabilities known as A.C.N.E.E., which is specifically mentioned in articles 71, 72, and 79 bis. The primary goal of this law is to **achieve universal accessibility in inclusive education**, where students learn based on their skills. This means that they should not only know how to do things, but also understand how to put their knowledge into practice.



**NUMBER OF DEAF/HEARING IMPAIRMENT STUDENTS IN SPAIN**

# 9,497

**Training for the teachers**

**2** A cloud-based platform and mobile app have been developed for e-learning, e-assessment, e-community, and a 3D4DEAF entrepreneurs network. An augmented reality game assists with setting up a social business. The "Compigadu" program supports teachers' digital skills with intensive two-hour training sessions each week for ten weeks over two years, encouraging the use of ICT and gamification in the classroom. The program aims to improve teacher professionalism levels to A, B, or C.

The situation of deaf people in the labor market

**3 National policies regarding the labor market**

The State Confederation of Deaf People (CNSE) has spoken out against the "disadvantaged situation" that deaf people experience in the workplace. CNSE is urging the business community to make a "greater social commitment" and the government to take "effective measures" to ensure the right to decent employment, as established in the Spanish Constitution. To address this issue, various types of procurement and subsidies have been established to promote the employment of people with disabilities and reverse the previous trend.

**JOB POSITIONS FOR THE TARGET GROUP IN THE LABOR MARKET**



Cleaning service



Maintenance





ITC



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## Digitalisation of the education


**4 Training for the teachers**

Spain has increased its investment in digitization since 2020, moving up to 15th place in the global digital technology integration rankings. The INTEF collaborates with autonomous communities to implement STEAM education. The Digital Culture at School plan, initiated in 2013, has been extended until 2030 in conjunction with the new education law LOMLOE. The plan focuses on inclusive education aligned with the SDGs and aims to promote digital implementation at home and in schools.


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### FOCUS GROUPS RESULTS


3 focus groups organised in Spain



**VET TEACHERS**  
5 teachers:  
4 female and 1 male



**VET STUDENTS**  
6 students: 5 female, 1 male,  
4 under 18 years old



**ENTREPRENEURS**  
5 deaf people, all female.

**5 Focus Group Results: VET Teachers**


Resources are not evenly distributed among the various stages of education, with a priority given to early education. In vocational education and training (VET), adjustments are made to enable access to exams and tests, such as reducing the size of statements, highlighting keywords in bold, and allowing for more time. Overcoming communication barriers requires the use of subtitling tools for videos, a glossary of terms in sign language, or the use of translators when presenting audiovisual materials, to reduce reliance on interpreters. Cooperative activities and laboratory practices are employed to improve content acquisition, autonomy, and support the inclusion of deaf students, encouraging their participation.

**6 Focus Group Results: VET Students**

Students often face challenges in everyday communication with heterogeneous groups due to differences in communication and auditory comprehension abilities. Despite this, they strive to progress in a professional environment. While the majority of students are focused on achieving good grades, some are content with just passing while others aim to do their best. In general, some students view the curriculum positively because it aligns with their future career goals, while others approach the curriculum from a more practical perspective, believing that a more hands-on approach is better.

**7 Focus Group Results: Entrepreneurs**

Communication can be particularly challenging in administrative work or when using the telephone. The lack of interpreters in meetings or when communicating with colleagues can be difficult, but not impossible to overcome. In some cases, a summary may be provided, which may not capture all of the information discussed. Hiring an interpreter can also be an additional expense. Individuals with hearing disabilities may also face reduced job opportunities due to a general lack of awareness and understanding of their disability. When taking an online course that claims to be accessible, it may fall short of expectations, with automatically generated subtitles that are often inaccurate or incomplete.



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