



PR2.2 Framework for the design of a learning unit

for the digital competence development of university students
and employees with disabilities





EESI-Digi

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Introduction

Our world is surrounded by the digital environment. In the course of our daily lives, we continuously stream information and filter the content relevant to us from the stream of information. This is also the case in higher education, where participants adapt the digital environment to their various professional work and studies. Today, we can talk about a global exchange of knowledge along the lines of international collaborations, cross-country study tours, and scholarships for foreign students.

As a hallmark of a modern higher education institution, its course materials are high quality and easily accessible in digital form. Furthermore, it is visible on the international scene and accessible to students. With his professional work, he supports local and global collaborations, yet emphasizes the support of the individual learning path.

In the case of digital higher education, ensuring equal opportunities can be achieved with digital accessibility. Based on Article 24 of the OECD, the states that have ratified the convention recognize the right of persons with disabilities to education and develop an inclusive education system for lifelong learning. Point 5 of the article: "States Parties shall ensure that persons with disabilities are able to access general tertiary education, vocational training, adult education and lifelong learning without discrimination and on an equal basis with others. To this end, States Parties shall ensure that reasonable accommodation is provided to persons with disabilities."

Creating opportunities for students with disabilities must be achieved by making electronic services and digital learning materials accessible. In addition to providing appropriate digital tools, a priority task is to prepare instructors to teach people with disabilities to use digital tools and their adapted versions.

In accordance with the interpretation of DigiComp 2.2, this publication examines the key elements of digital competence in 5 areas from the aspect of equal access relevant to the topic of disability. The legal basis of the guide is the Convention on the Rights of Persons with Disabilities legislation drawn up in 2006, the second digital European strategy for 5 years, Digital Education Action Plan (2021-2027), drawn up on July 1, 2020. EESI-Digi Project provides an additional professional background with its professional and scientific content, as well as the professional background knowledge of the international partnership.

Based on the Inclusive Higher Education and Learning Environment approach, the goal is to the creation of an educational and learning environment that responds more precisely to the needs of the diverse student population (Fazekas, 2021, 93).

The guide contains useful theoretical and practical information for all participants in higher education, and other training institutes which can be used to ensure equal access to the digital field for students and employees with disability. In the first round of the framework, we clarify the key elements of digital competence, the 4 pillars of ability result-based learning and the disability areas, for which practical aspects can be found in a table.



Digital competence

Definition of digital competence: "Digital competence involves the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competencies related to cyber-security), intellectual property related questions, problem solving and critical thinking." (Council Recommendation on Key Competences for Lifelong Learning, 22 May 2018, ST 9009 2018 INIT). Digital competence, i.e., the ability to apply information social technologies (ITT) means that, regardless of diversification, every person uses ITT technologies in the most independent way possible with their available knowledge, skills, and autonomy in terms of independent living. As part of this, higher education means that a person with a disability can learn in a digital environment that suits their learning structure.

Figure 1 shows the 5 key elements related to digital competence that need to be taken into account when designing an ITT environment to be adapted for disabled higher education students.

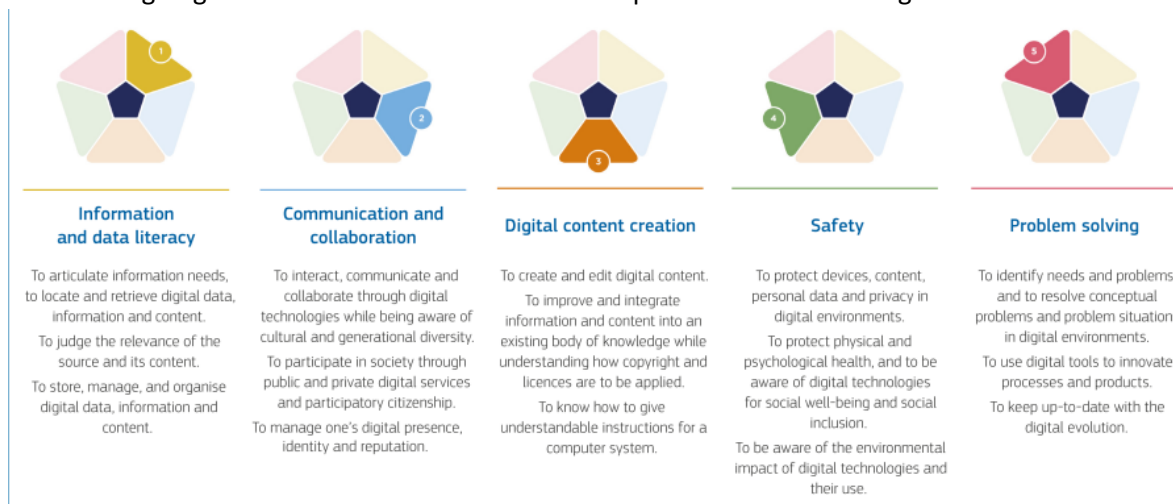


Figure 1: DigComp areas (source: Vuorikari at al. DigComp 2.2, 2002, 7)

„Information and data literacy: To articulate information needs, to locate and retrieve digital data, information and content. To judge the relevance of the source and its content. To store, manage, and organise digital data, information and content.

Communication and collaboration: To interact, communicate and collaborate through digital technologies while being aware of cultural and generational diversity. To participate in society through public and private digital services and participatory citizenship. To manage one's digital presence, identity and reputation.

Digital content creation: To create and edit digital content To improve and integrate information and content into an existing body of knowledge while understanding how copyright and licences are to be applied. To know how to give understandable instructions for a computer system.

Safety: To protect devices, content, personal data and privacy in digital environments. To protect physical and psychological health, and to be aware of digital technologies for social well-being and social inclusion. To be aware of the environmental impact of digital technologies and their use.



Problem solving: To identify needs and problems, and to resolve conceptual problems and problem situations in digital environments. To use digital tools to innovate processes and products. To keep up-to-date with the digital evolution.”

The purpose of knowledge-result-based training is to develop the competence necessary for subsequent activities, which affects 4 main areas related to the targeted field of expertise (Farkas, 2017):

- **knowledge:** more specific knowledge related to the field, knowledge networks, rules
- **ability:** procedural knowledge related to the field of expertise
- **attitude:** emotional commitment to the profession
- **autonomy:** independence and responsibility related to the field of expertise

During higher education, digital competence and its key elements can also be defined along these 4 knowledge result-based training segments.

The relationship between digital competence and equal access

The Hungarian Act of XXVI in 1998 on the rights of disabled persons and ensuring their equal opportunities defines equal access as follows: "equal access: the service is accessible with equal opportunity if its use - according to the status of the user with independence - accessible, predictable, understandable and perceptible for everyone, especially for people with physical, visual, hearing, mental and communication disability; furthermore, the building in which the public service is provided is accessible to everyone, the part open to the public can be walked around, it can be safely left in an emergency, and the objects and equipment in the building can be used for their purposes by everyone and the services can be used equally. Information is accessible with equal opportunity if it can be calculated, interpreted, and perceived by everyone, especially people with impaired motor, vision, hearing, mental and communication functions, and access to it is unobstructed for the user."

Some useful terminology

Persons with disability

" People with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which, in interaction with various barriers, may hinder their full and effective participation in society on an equal basis with others." (CRPD, Article 1)

Special Educational Needs

„Special Educational Needs (SEN) refer to learners with learning, physical, and developmental disabilities; behavioral, emotional, and communication disorders, and learning disabilities. SEN refers to teaching learners who for intellectual or medical reasons fall behind in their education when compared to most of their peers (Briant et Al., 2017).” Marie Delaney, in Special Educational Needs (2016. p. 12) maintains that: „Students have special educational needs if they have significantly greater difficulty in learning than the majority of students of the same age and special educational provision needs to be made.”



Autism

„Autism is a lifelong developmental disorder, which means different development than the majority, that affects the way the individual creates relationships with others and interprets the world around him/her. Individuals affected by the autism spectrum are located on a wide spectrum of functions and abilities. It is very difficult to talk about them in general terms, except perhaps that some degree of difficulty in social behavior and communication exists in each case, and they are characterized by different cognitive styles. In all cases, autism fundamentally affects the person's

- social and communication skills
- flexible behavior organization and thinking
- processing of sensory stimuli.

Some students affected by autism spectrum disorders may experience sensory overload, and the university's social and communication expectations may cause them considerable stress. They have all the ability to focus on intellectual activity, but at the same time they can find it difficult to navigate the multitude of classes/curriculums, organization, and planning tasks - especially during transition periods – which can cause many challenges, and therefore they can easily feel lost.

In many cases, during the processing of sensory stimuli, a particular, heightened sensitivity may appear to certain visual, acoustic, or tactile stimuli, which may also cause unusual behavior and reactions.

Most young people are characterized by a specific information processing style. In particular, delayed processing of speech and verbal information may be characteristic, and it may be more difficult for them to filter out verbal information, highlight the essence, and focus longer-term attention on the speech, which may manifest itself in premature fatigue and exhaustion. It can also be typical that they can pay more attention to small details and remember them better than global, integrated information and broader connections.” (Matolcsi, 2019, p.22.)

Learning disability

„We can speak of a learning disability if besides average time frames, teaching methods, and learning conditions are given, the student shows low performance in learning on one or more learning aspects, despite average or even above-average intellect. This group includes dyslexia, dyscalculia, dysgraphia, dysorthography, and mixed learning disabilities.” (Szepesi, 2019. p.66.) „Lack of motivation, anxiety, the experience of failure, scrolling through tasks, procrastination, and experiencing the resulting shame are common accompanying symptoms. All of these affect the academic progress and cooperation with instructors.” (Szepesi, 2019. p.69.)

- **Dyslexia** is a reading disorder that is the most common learning disability. It may affect any aspects of the reading process, like word decoding, reading rate, and reading comprehension.
- **Dysgraphia** is a disorder of written expression or writing skills that may affect grammar, punctuation within sentences, poor paragraph organization, multiple spelling errors, or composition of a written text, e.g. an essay.
- **Dyscalculia** is often called a math disability but is rather a developmental problem in those skills which are necessary to learn mathematics. It may affect number concepts, counting, understanding mathematical rules, and often spatial and time concepts.
- **Dysorthography** is a disorder of spelling that often manifests as a residual symptom of dyslexia and accompanies by other learning disabilities.



Visual impairment

Visual impairment refers to a loss of vision that cannot be corrected to normal vision, even when the person is wearing eyeglasses or contact lenses.

„Visually impaired people can be divided into two main categories based on their visual performance – that is one group includes those persons who are not able to obtain information and learning through visual stimuli (blind). The other group includes people who have so-called functional vision (low vision, partially sighted), so to some extent, they are able to use one or more of their visual functions. This category covers a wide spectrum, varying in which visual function, to what extent, with or without optical aids in what kind of environmental modification they are able to use their existing vision for planning and execution in gathering information, learning, communication, orientation and mobility and everyday tasks.” (Grósz-Kovács, 2019. p. 49.)

As a learning medium, the two groups differ basically: blind students use Braille or screen reader software, while students with partial sight can use magnification (e.g. optical and electric aids; magnified print; screen enlarging software). Students with severe low vision usually need both techniques: screen reader and screen enlargement at the same time.

Hearing impairment

„In the case of hearing impairment, the threshold of hearing increases, and the person only hears somewhat louder sounds or does not hear them at all. (Perlusz, 2001. p. 37.)

„Types of hearing impairment from a special educational perspective:

- Mild degree of hard of hearing: the student has difficulty hearing soft speech, understanding speech in noise can be difficult
- Moderate degree of hard of hearing: difficulty hearing normal speech, hearing aid amplification is needed without it, it is difficult to understand speech
- Severe degree of hard of hearing: it is difficult to hear even loud speech, a more powerful hearing aid or cochlear implant is required. The acquisition of information relies on listening and lip reading as a supplement to listening.
- Transition between hard of hearing and deafness (residual hearing condition) – only a hearing aid helps to amplify speech
- Deafness: hard to hear even with amplification, speech development does not start naturally. It may be necessary to rely on lip reading, subtitling, or sign language to obtain information. Implantation of a cochlear implant in the early years might help.” (Szepesi, 2019. p.38.)

Physical disability

„Persons with a physical disability have a congenital or acquired injury or damage to the supporting and/or locomotor organ systems and/or as a result of functional impairment, a permanent and significant disability is developed in the acquisition of movement experience and socialization.” (Benczúr, 2000, p. 538.).



„It can be congenital or acquired at a later age, as a result of an accident or illness, and as a consequence, the learned movement functions can be a partial or complete loss. From this point of view, the following grouping can be taken into account:

- Flaccid paralysis
- Cerebral palsy
- Orthopedic disorders
- Amputation
- Congenital anomalies/disorders

Certain forms of mobility impairment may be accompanied by delayed, hindered speech development, communication disorder, or complete inability to speak. This is also important because as a result, more attention should be paid to oral communication with certain students' need. The main consequences of limited mobility can be:

- Difficulties in changing location and position
- Manipulation activities, difficulties with fine motor skills (hand use).
- Self-service, difficulties with self-care tasks
- Communication difficulties” (Péterfia, 2019. p. 58.)



Digital equal access in higher education

Digital equal access is presented based on DigComp 2.2, based on which the basic level and knowledge, ability, attitude, and autonomy required for participation in higher education are presented in the table. After the tabular review, disability-specific methods and tools supporting equal access are listed.

Expected impact of autism on participation in higher education

Base level	Phenomenon
<p>Information data management</p> <ul style="list-style-type: none"> • documents • databases • data search • online interfaces • open source tools 	<p>Knowledge Knowing the data management system, they are able to comply with its rules. Know search engines and database management.</p> <p>Ability Speech understanding and data selection can be difficult. It may be more difficult to focus on verbal information in the long term. Navigating through different systems can be difficult, e.g. timetables, curricula. With help, can select that search engine. Easier to focus on details than on comprehensive information. With help know how to formulate search queries. It might be difficult to see the correlations and cause-and-effect connections. Lack of data and details might be noticed first.</p>
<p>Communication and collaboration</p> <ul style="list-style-type: none"> • networking • communication platforms 	<p>Knowledge Might have little knowledge of the formal and informal rules of communication. Clear and non-ambiguous communication is needed to understand information. It is necessary to learn the generalized operation between communication systems</p> <p>Ability Frequent changes in communication interfaces can create a feeling of chaos, which can lead to anxiety. Understand what is being said literally, and have difficulty decoding hidden hints, nonverbal signals, and social signals. During communication, concentration leads to exhaustion due to the simultaneous visual and auditory stimuli, so it is necessary to take regular breaks.</p>
<p>Creation of digital content</p> <ul style="list-style-type: none"> • content for online platforms 	<p>Knowledge The knowledge content of the online interfaces can be learned in an orderly structure. Can learn the method of uploading and creating content. Guides in the form of text or video with subtitles are suitable for them.</p> <p>Ability Strong stress occurs in a situation or surface that is considered chaotic.</p>
<p>Safety</p> <ul style="list-style-type: none"> • Internet security 	<p>Ability Comply with Internet security rules.</p>
<p>Problem-solving</p> <ul style="list-style-type: none"> • task types • task platforms 	<p>Ability Planning and organization might be difficult during problem-solving. Can skip or exchange certain parts of the tasks. Able to solve problems in a unique, creative way.</p>



Evaluation <ul style="list-style-type: none">• task form• task platform• evaluation form	<p>It might be difficult to keep grammatically correct answers during oral exams.</p> <p>If the question is formed in a complicated way In the case of written exams, it takes longer to process the task, and its interpretation may be incorrect.</p>
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Expected impact of learning disability on participation in higher education

Base level	Phenomenon
<p>Information data management</p> <ul style="list-style-type: none"> • documents • databases • data search • online interfaces • open source tools 	<p>Knowledge Know the rules of data management. Has an established data management procedure. Learning new systems can be more difficult and take longer.</p> <p>Ability Can understand information, but long-term concentration becomes difficult when having attention deficit disorder. In the case of a reading disorder (dyslexia), data processing takes longer. In the case of a writing disorder (dysgraphia), it may be difficult to write down the data. In the event of a math disorder (dyscalculia), it may be difficult to interpret and recall data related to numbers. Storing the data in a transparent record book helps to recall it more quickly.</p>
<p>Communication and collaboration</p> <ul style="list-style-type: none"> • networking • communication platforms 	<p>Knowledge Know the formal and informal rules of communication.</p> <p>Ability Using multiple communication platforms can get confusing. Can learn how to use the functions of the communication platforms with a transparent guide.</p>
<p>Creation of digital content</p> <ul style="list-style-type: none"> • content for online platforms 	<p>Knowledge Know how to use online interfaces.</p> <p>Ability Able to create digital content, but depending on the nature of the learning disability, different errors in the content can be expected (e.g. regular replacement or omission of numbers or the letters, the appearance of a significant amount of grammatical errors).</p>
<p>Safety</p> <ul style="list-style-type: none"> • Internet security 	<p>Ability Comply with Internet security rules.</p>
<p>Problem-solving</p> <ul style="list-style-type: none"> • task types • task platforms 	<p>Ability Detecting and interpreting the necessary data can hinder problem-solving. May take longer to read the instructions for the tasks. The explanatory task or essays can cause difficulty due to frequent grammatical errors. Multiple-choice tasks are easier to complete.</p>
<p>Evaluation</p> <ul style="list-style-type: none"> • task form • task platform • evaluation form 	<p>An individual assessment adapted to the nature of the learning disability is required.</p>



Expected impact of visual impairment on participation in higher education

Base level	Phenomenon
<p>Information data management</p> <ul style="list-style-type: none"> • documents • databases • data search • online interfaces • open source tools 	<p>Knowledge Information/data can be accessed with different aids based on visual or haptic perception (e.g. glasses, CCTV, screen reader or Braille display). The visually impaired person knows how to use the aids, and hardware/software required for accessibility.</p> <p>Ability A blind person can use a screen reader to process electronic teaching materials in character format or can use a Braille display as an output. A blind person cannot process image-type information without adaptation to a text file and description of the image. People with low vision can read the contents by magnifying. They can read electronic content and extract data.</p>
<p>Communication and collaboration</p> <ul style="list-style-type: none"> • networking • communication platforms 	<p>Knowledge Communication content containing visual elements needs to be adapted.</p> <p>Ability In a larger community, narration of visual information is necessary during the discussion.</p>
<p>Creation of digital content</p> <ul style="list-style-type: none"> • content for online platforms 	<p>Knowledge The knowledge content of online interfaces can be learned after necessary adaptation. Most online interfaces/platform are accessible with screen readers.</p> <p>Ability Able to learn different online content. Able to create and upload content to be submitted.</p>
<p>Safety</p> <ul style="list-style-type: none"> • Internet security 	<p>Ability Comply with Internet security rules.</p>
<p>Problem-solving</p> <ul style="list-style-type: none"> • task types • task platforms 	<p>Ability Can solve the tasks after adaptation. More processing time is required due to the possibly slower orientation on online interfaces.</p>
<p>Evaluation</p> <ul style="list-style-type: none"> • task form • task platform • evaluation form 	<p>An individual assessment is required. Evaluation based on predetermined criteria.</p>



Expected impact of hearing impairment on participation in higher education

Base level	Phenomenon
<p>Information data management</p> <ul style="list-style-type: none"> • documents • databases • data search • online interfaces • open source tools 	<p>Knowledge Knowing the data management system, able to comply.</p> <p>Ability Speech understanding and data selection can be difficult. A person who is hard of hearing can obtain auditory information/data with an aid (e.g. hearing aid, induction loop or FM systems). A deaf person can collect data through visual communication (e.g. sign language, subtitles, written text). It may be more difficult to focus on verbal information in the long term and can cause fatigue. In the case of acoustic information, data damage or data loss is possible. The weighting of the data transmitted during the speech (e.g. emphasis, pause between words) is little or not noticeable at all. Emphasis can be easily conveyed during visual information (e.g. marking important content).</p>
<p>Communication and collaboration</p> <ul style="list-style-type: none"> • networking • communication platforms 	<p>Knowledge The deaf and hard of hearing person knows and uses the lip reading method. During an online discussion, it is of utmost importance to provide a suitable perceivable image, e.g. subtitling, real-time capturing, note-taking, sign-language interpretation, or using other visual-based communication.</p> <p>Ability Able to follow the information of successive speakers in a larger group by forming the appropriate cue and lip-reading image or visual communication channel.</p>
<p>Creation of digital content</p> <ul style="list-style-type: none"> • content for online platforms 	<p>Knowledge The knowledge content of the online interfaces can be learned. Most online platforms are accessible via a subtitling function.</p> <p>Ability Able to learn different online content. Able to create and upload content to be submitted.</p>
<p>Safety</p> <ul style="list-style-type: none"> • Internet security 	<p>Ability Comply with Internet security rules.</p>
<p>Problem-solving</p> <ul style="list-style-type: none"> • task types • task platforms 	<p>Ability For tasks requiring problem-solving, the interpretability of the instructions is important. Task types that require less coherent writing or tasks that can be presented creatively are more useful.</p>
<p>Evaluation</p> <ul style="list-style-type: none"> • task form • task platform • evaluation form 	<p>The communication form of the evaluation should support comprehensibility. An individual assessment is required. Evaluation based on predetermined criteria.</p>



Expected effect of physical disability on participation in higher education

Base level	Phenomenon
Information data management <ul style="list-style-type: none"> • documents • databases • data search • online interfaces • open source tools 	Knowledge Know the data management system. Ability Able to understand and handle information and data. Data management, in the case of involvement of gross motor or fine motor skills, is performed with an auxiliary/adapted device (e.g. large switch, head mouse, eye mouse, sip and puff system). Can manage online interfaces with an auxiliary/adapted device.
Communication and collaboration <ul style="list-style-type: none"> • networking • communication platforms 	Knowledge May have little knowledge of the formal and informal rules of communication. Know their own aids used in communication and how they work. Ability Able to communicate with other people orally if speech is not impaired, in writing with or without an assistive device. Oral communication may be slower or more difficult to understand due to the involvement of voice production. Able to collaborate on online interfaces using the aid, which in many cases requires more time. In case of difficulties in face-to-face communication, can even participate in discussions in writing.
Creation of digital content <ul style="list-style-type: none"> • content for online platforms 	Knowledge Know the rules and ways of creating content. Ability Able to develop content with an aid, sometimes over a longer period of time.
Safety <ul style="list-style-type: none"> • Internet security 	Ability Comply with Internet security rules.
Problem solving <ul style="list-style-type: none"> • task types • task platforms 	Ability Clear worksheets and sufficiently separate tasks help move between them with the aid. In some cases, considerably more time must be given to any written task, especially to essay-like tasks.
Evaluation <ul style="list-style-type: none"> • task form • task platform • evaluation form 	Depending on the nature of the mobility impairment, an individual assessment is required.



Presentation of case studies for using the Framework

The methods and tools that support equal access to digital competence that we learned about in the previous ones appear in a complex way in the real situations of higher education. The following few examples show what specific solution strategies led to good practice.

Case 1: Student with Visual Impairment – Eötvös Loránd University (ELTE), Hungary

M. is a sociology student at the Master's level, she is in her final year of study. She entered ELTE University in 2018 to study Sociology at a BSc level. M. is a legally blind person who is coming from a rural area, with a very low social-economic background. She asked for support from our Disability Center. M. wanted to learn routes with a white cane, adapted learning material and learn basic IT skills in order to be able to do her tasks: to write emails; to be able to use the Electronic Study management system; to use an online platform; to be able to download learning material; to be able to use the Internet and to be able to use SPSS with screen reading software.

When our IT instructor, a blind IT teacher himself made an assessment of M's IT skills, he recognized, the student was missing the basic IT skills in all of the 5 key elements related to digital competence. Her IT competencies covered using the keyboard and NVDA screen reader. Since she did not want to lose a study term, concentrating only the development of her IT skills, we had to prepare a rather complex and intensive curriculum for her. She had IT lessons with our instructor three times a week. Her individual education plan consisted of:

- 1.) Word processing – how to write an essay
- 2.) Communication tools – writing emails
- 3.) Using online platforms – Coospace for downloading and uploading digital content and study materials and later MS Teams
- 4.) Data search – to search and browse the Internet and the University's Library databases
- 5.) To learn the accessible statistical program: 'R', instead of SPSS which is not accessible with a screen reader – to be able to accomplish the research methodology subjects and her own research work.

M. was a very motivated student who learned and improved a lot in all IT areas. Today, she is absolutely independent with all digital tasks which makes her very successful in her studies. She has finished her final thesis based on her own research with the best mark and looking forward to her final exam to get her Master's diploma in Sociology in the summer of 2023.

Case 2: Student with a Learning Disability – University of Patras - Greece

H. is a Social Worker student in her first year of her bachelor's degree, who very soon realized she encountered problems in reading and writing. This student was diagnosed with dyslexia and was advised to visit Social Welfare services. H. Visited the Digital Accessibility services in the Central Library seeking assistance so she could seamlessly continue with her studies. H. was found to struggle with reading documents, books, and lecture notes both digital and manuscript. H found it also very difficult to write fast keeping correct notes that she could clearly read again.

H was initially introduced to the Screen Reader. Staff explained to her how to use it and had some examples for better comprehension. H. adopted this tool and continues up to now. The immersive



reader of Microsoft Word was another tool that the staff of Digital Accessibility Services introduced and explained to H.

The next step was to introduce to H. the accessible documents. H. was taught how to read and create accessible documents and a whole book of her discipline was turned accessible which was a rather time-consuming time but needed task to do to assist her with reading and learning basic educational content. H. had a series of IT lessons with our instructors to deal with accessible learning content.

The additional problem of dysgraphia is managed with the assistance of a team of volunteers. H. faces also problems writing down correctly what she sees and hears, so volunteers – classmates of H. keep clear notes for her in the classes and then share those with her. The volunteers were given basic guidelines from the expert staff and continued to provide this assistance through all semesters. H. puts a lot of effort to cope with her studies, and she is consistent with the provided tools and volunteer assistance, achieving actually good performance. Some of the notes and work that was implemented for this student are in the process of being generalized into a more formal structure, so as to help students with similar difficulties.

Case 3: Student with Autism – Vilnius University of Applied Sciences (VIKO), Lithuania

In 2022 STUD2 entered the study program "Computer Systems" of the Faculty of Electronics and Informatics of Vilniaus Kolegija/ Vilnius University of Applied Sciences (VIKO). Legally, STUD2 has provided documentation that he has an autism spectrum disorder. According to the valid documents at VIKO, an individualized study process plan was drawn up for him. The individualization of the study process is described according to the study conditions:

1. Study environment;
2. Study material;
3. Organization of assessment of study achievements;
4. Other individual needs.

The plan was coordinated with the student and approved by the order of the dean of the faculty. The most commonly used methods of individualizing the study process for students with autism spectrum disorders:

1. The possibility to organize the assessment of study achievements in a familiar environment (e.g. the auditorium where the study sessions took place) or in a separate room;
2. The possibility to leave the study activity if necessary;
3. The possibility to use a computer, a smart device, and the necessary software during study sessions and assessment of study achievements;
4. Organization of assessment of study achievements in a suitable way for students (written, video, remote, etc.);
5. extension of the duration of assessment of study achievements.

STUD2 indicated only the need to extend the duration of the assessment of study achievements. However, based on the results of semester 1, it can be seen that STUD2 reports individually and earlier than the other students. His grades are high and his studies are successful.



Case 4: Student with Hearing impairment – I.E.R.F.O.P. Onlus - Italy

O. is a man who from birth has had to deal with the problems caused by a rare syndrome such as Usher's syndrome, characterized by sensorineural deafness associated with retinitis pigmentosa and progressive vision loss.

It is a progressive illness and O. has always endeavored to 'anticipate' the progression of his disease, evolving his skills to be able to live as independently as possible both personally and professionally way.

He approached Ierfop by enrolling in the Switchboard Operator Course for the blind, where he was able to learn Brail immediately, in anticipation of losing his sight.

He also attended classes in the "Orientation and Mobility Course", and "Call Centre Operator" and before his sight loss worsened he learned LIS, and sign language, obviously having the opportunity to see and learn the vocabulary of the language better, in anticipation of worsening hearing disability.

His willpower allowed him to stay informed about all courses/benefits that would help him and improve his situation by managing his visual and hearing deficits in the best possible way.

O.'s mission is not only to improve himself but also to improve the conditions of other disabled people, for example, he worked on the 'Disabled Beaches' project to improve access for disabled people according to their needs.

He attended Ierfop for the last 20 years and he has been recognized by the teachers as an atypical student, precisely because of his desire to get involved and to always seek improvement in his lifestyle.

He is a completely independent man in a personal and professional way, working now as a Call center Operator within a good Company.

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