Teaching History for Disabled Students through Digitalized Gamification Tools

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PROJECT RESULT 1

FINAL REPORT

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Executive Summary

The incorporation of technology in education has improved learning for students with disabilities (SWD). E-learning is posited to positively impact SWD's learning outcomes (Waight & Oldreive, 2020) while equipping organizations with the necessary tools to capture and retain their interest (Babeley, 2016). Despite these benefits, researchers have found a reluctance of teachers to integrate technology while teaching in the classroom. Arguments have ranged from weak technical competence, insufficient teaching material, diminished control, and lack of time (Tallvid, 2016) to feelings of inadequacy (Atanga et al., 2020). In response, educational administrators have countered with interventions such as peer support, and requests for technical and financial assistance (Tusiime et al., 2020).

On the other hand, the study conducted by Catalano et al. (2021) has found that in the era of the Covid-19 pandemic disabled students have had various difficulties because of e-learning. It has been determined that students with disabilities face different issues with e-learning because they did not have access to the resources required to access the learning material, nor were they given a sufficient level of support from their mentors and teachers to learn successfully at their respective educational institutes (source? ibid?). On the other hand, the authors (?) have further determined that disabled students did not have a significant level of the skill-set that could be used accordingly for online learning skills. Furthermore, disabled students also faced different issues grasping a sufficient level of understanding from the lectures that were prepared for them because the teachers lacked efficiency in developing the lectures that could be used accordingly for teaching disabled students. Moreover, the teachers did not have a sufficient level of training that could be used for teaching the disabled students in e-learning environment and the desired level of learning is not achieved (Tonks et al., 2021). Another issue faced by disabled students was related to the stay-at-home order that resulted in adverse effects in their psychological and mental health. This has produced an additional negative impact besides the e-learning issues that were already present. As a result some disabled students have lost their coping abilities with the uncertainties caused by the covid-19 pandemic (Gin et al., 2021).

Also, the issues associated with the transition from physical to online educational environment frequently cause difficulties for students with disabilities since the facilities provided in respective educational institutes were not present at their homes. Furthermore, financial issues appeared to be an important obstacle because disabled students needed to buy new devices to attain a sufficient level of participation in online media. All these aspects result in barriers that both disabled students and their teachers had to face to attain a necessary level of learning (Coleman-Jensen, 2020; Gundersen et al., 2020; Rabbitt & Smith, 2021).

1. Introduction of the project

Information and communication technologies provide young people with disabilities and their teachers with tools and resources that can transform the history class. Helped along by their teachers, disabled young people thus learn to ascertain the degree of validity and reliability of the documentary sources consulted. They must also learn to transcend the essentially narrative aspect of history to secure a transverse and comparative type of history. Basically, the educational support needed for such learning processes requires teachers to adopt new roles and become, amongst other things, guides and mediators. The EU 2025 education strategy states that the EU urgently needs to address emerging trends in digital tools and prepare for socio-economic changes by encouraging modernization of education and training systems. Additionally, the European Union Youth Strategy 2019-2027 strives to enable young people to be architects of their own lives, support their personal development and growth to autonomy, build their resilience and equip them with life skills to cope with the changing world Therefore, the EU's strategies for future technologies and data aim to encourage businesses to work with and develop these new technologies, while at the same time making sure that they earn citizens' trust. Nearly in all of the EUcountries, disabled young people are typically taught history through tutorials and classical methods. There are millions of Open Education Resources (OERs) to promote these. Yet, 80% of them fail in the process because it is not understood what gamification tools are. The Eurostat 2020 statistics found that 23,9 % of disabled young people face with lack of the full basic digital skills. 4.3 million (8%) have no basic digital skills at all. Two thirds of large enterprises indicate a shortage of ICT specialists on the labour market (DESI 2020). The overall objective of the project is to implement the blended learning approach to develop an understanding of teaching history through gamification to disabled young students.

The concrete objectives of the project are:

- Supporting the capacity building of mainstream and special education history teachers in primary and secondary education;
- Supporting teachers and improving their key competencies by using gamification in the history classroom;
- Creation of gamification software and tools related to history topics;
- Digitalization of the gamification tools by the creation of a gamification platform and a mobile application;
- Supporting teachers in using and sharing effective methods in learning and recognizing history for students with fewer opportunities (visual problems, hearing problems, intellectual problemsand dyslexia) addressing the opportunities and implications of digitalization;

- Fostering inclusion of students with fewer opportunities; – Fostering equality in learning history for students with fewer opportunities;
- Promoting intercultural dialogue and strengthening knowledge and acceptance of diversity in society;
- Recognizing and validating the work of history teachers in non-formal and informal learning on European, national, regional and local levels;
- Promoting diversity, intercultural and inter-religious dialogue, as well as the common values of freedom, tolerance and respect of the human and social right.

2. Project consortium

Applicant organization: University of Applied Sciences in Tarnow - Poland
Partner organisations: 1. Community development institute - The Republic of North Macedonia 2. Istituto d'Istruzione Superiore Mandralisca - Italy 3. Stichting International Excellence Reserve - Netherlands 4. Scoala gimnasiala speciala pentru deficienti de vedere - Romania 5. Avrupa Yenilikçi Toplum Derneği - Turkey

3. Description of Project result 1

The first project result refer to the production of gamification content with historical facts. It will not turn the content into a game but rather it will add game elements or activities to the content.

The focus will be to increase user engagement by adding interactive elements. The applicant organization will be the leader of the activity and will work jointly with the partner organizations in creating and developing of these tools.
Needs assessments showed that gamification is widely used in business and management environments. Lately, its use in education settings has increased. Nevertheless, there are not many educational resources for students with disabilities that include elements of gamification. The elements of innovation in this output are related to the fact that all the gamification content will be made accessible for different types of disabilities by creating audio and Braille materials, materials supported with sign language, materials developed with the use of a dyslexic font and specially modified books.

This output will result in the creation of game-based content with game-like elements for history classes for students with disabilities. This output methodologically will cover desk-top studies and focus groups research to search for best practices related to gamification induction programs, the enhancement of the professional skills in history teachers, compliance, soft skills enhancement, behavioral change, and the gamified assessments for traditional eLearning courses (the partial type of gamification).

The created content will be published in six languages (English, Macedonian, Dutch, Romanian, Italian and Turkish). Here is the transferability potential of this output.

4. Primary Direct Gap Assessment research (desk research)

The purpose of this desktop research is to define the terms related to persons with disabilities and to define persons with hearing impairment, persons with impaired vision, persons with dyslexia and persons with intellectual disability. It will allow for a better understanding of the process of education of these persons in the countries of the partner organizations, the inclusion process, the legal framework, relevant statistics, etc.

4.1 Characteristics of students with disabilities:

A disability is any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities (activity limitation) and interact with the world around them (participation restrictions).[1] Its effects are limitations in the performance of basic physical functions and limited communication abilities of people with disabilities. From the point of view of special education, we can classify disabilities as follows:

1) Students with sensory impairment who have injuries of sensory organs, that include:

- Blind and partially sighted students
- Deaf and hard of hearing students

1 https://www.cdc.gov/ncbddd/disabilityandhealth/disability.html

2) Students with physical disabilities:

- Students with motor disabilities (motor organ dysfunction)
- People with chronic diseases of internal organs

3) Students with mental disabilities:

- Students with intellectual disabilities, mentally retarded students
- Mentally ill students with personality and behavioural disorders
- People with behavioral disorders

4) Students with multiple disabilities (multiple, multi-range)
Taking into account the period of life in which the disability appeared, we can classify students into:

- Students disabled from birth or early childhood, for example blind students,
- Students with an acquired disability, when the disability appeared later in their period of life, for example as a result of an accident or disease.

By virtue of the degree of disability, we can consider students with: light, moderate and severe degrees. The document which contains legal provisions concerning the education of disabled people is the Act of September 7, 1991 (with subsequent amendments) on the education system. The issue of educating people with disabilities is also discussed in the Salamanca Declaration of June 10, 1994. The rights of people with disabilities are also described in such documents as: the Universal Declaration of Human Rights (1948), the Convention on the Rights of the Child (1989), the World Declaration on Education for All (1990), Standard Rules on the Equalization of Opportunities for Persons with Disabilities (1993), Treaty of Amsterdam (1997), Declaration of Madrid (2002).

4.2 Definitions of different types of disabilities

4.2.1 Hearing impairment

Definition of impaired hearing

Hypoacusis is a decrease in hearing capacity resulting from damage to one or more parts of the hearing system.

Hypoacusis consists in lowering of hearing, which can even lead to hearing loss; specifically, it is a decrease in hearing capacity resulting from damage to one or more parts of the hearing system that can affect only one ear (unilateral hypoacusis) or both (bilateral hypoacusis).

With the exception of cases of sudden or traumatic deafness, hearing loss is a slow and progressive process, as myopia is, which affects 10% of the world population and about 7 million people in Italy.

The most common symptoms of hypoacusis

Among the symptoms encountered in those who experience hearing loss, one of the most common is the difficulty of clearly perceiving sounds in environments and everyday situations, such as:

- Conversations in crowded and noisy contexts (for example, at the supermarket and restaurant);
- Listening to children's voices;
- Articulated dialogues in a low voice or in reverberating environments (e.g. in a church);
- Telephone conversations;
- Listening to sound sources such as television or radio;
- Dialogues inside a car;
- Meetings in the workplace (difficulty in listening to several voices at the same time).

It is important to rely on a specialist ENT examination to detect the possible presence of hypoacusis, the degree and the best therapeutic solution.
Causes of hypoacusis and hearing loss

The causes of hearing loss are numerous and determine the different types of hypoacusis. The main and most recognized are:

- **Noise:** noise hypoacusis is one of the most frequent situations. It derives from prolonged exposure to high sound intensities (over 85 dB) or to short but intense sounds (for example, the explosion of a firecracker). Due to these particularly loud sounds, the hair cells in the cochlea are damaged, leading to impaired hearing. The people most at risk for this type of hearing loss are workers in certain industrial sectors (for example: metalworking, wood or printing industry). In these cases, it is important to prevent hearing loss by using adequate hearing protection (headphones, earplugs)

- **Age:** presbycusis is the natural decrease in hearing capacity from about 50 years of age.

This disorder affects a high percentage of people (about 40% of the population over the age of 65). The course of presbycusis is usually slow and the first symptoms are poor perception of higher frequencies and difficulties in understanding in particularly noisy places. The best therapy for presbycusis consists in the use of modern hearing aids.

- **Genetic predisposition:** among the possible causes we must mention otosclerosis, a disease that affects the ear bones (hammer, anvil and stirrup) compromising their movement.

- **Infections:** specific internal infections and inflammation of the ear can also result in lowering and hearing loss. In particular, otitis media is closely linked to hearing loss. The typical symptoms of otitis media are throbbing ear pain, fever and, indeed, hearing loss. The main treatment consists in taking antibiotics.

Types of hypoacusis

Hearing loss or decrease can manifest itself in different ways, also in relation to the causes and factors from which it derives. The best-known types of hearing loss are:

- **Congenital hypoacusis:** it is a hereditary hearing loss or, in any case, caused by malformations and problems that arose during pregnancy or childbirth. Any structure of the auditory system can be involved (outer, middle and inner ear).

- **Sensorineural hypoacusis:** the decrease in hearing capacity is due to damage to the inner ear, in particular the cochlea (or nest), which, for various reasons, is no longer able to convert the sound vibrations perceived into nerve impulses.

- **Central hypoacusis:** occurs when damage affects the central auditory pathways (beyond the acoustic nerve). The resulting symptoms may initially only be neurological, strictly dependent on the cause and site of the damage and, only later, reveal the hearing damage. The type of hearing loss is classically sensorineural with extreme difficulty in verbal discrimination.

- **Acquired hypoacusis:** in this case, hypoacusis occurs as a result of the influence of external factors. Specifically, it can be classified in conductive hypoacusis (when the problem occurs in the transmissive structures of sound e.g. Otitis) or sensorineural hypoacusis (when the problem concerns the cochlea or the acoustic nerve). If both ears suffer a decrease in hearing capacity, it is called bilateral sensorineural hypoacusis (caused by noise damage or age-related).

When acquired hearing loss is caused by both transmissive and sensorineural factors, we speak of mixed hypoacusis (eg Otosclerosis).

- **Fluctuating hypoacusis:** the hearing threshold undergoes variations over time, following phases of reduction and total remission. Fluctuating hearing loss is typical of Menière's disease. When there is a situation of reduced auditory perception in equal measure for all frequencies we speak of pantonal hypoacusis.

- **Hypoacusis at high frequencies:** they are characterized by a reduction in hearing capacity at frequencies above 4000 Hz. The most frequent are presbycusis and ski slope. Acute or chronic acoustic trauma, ototoxicity, viral infections, some forms of age-related hearing loss and genetic factors contribute to the onset of these forms. The effects of this hearing loss are variable, so it is advisable to evaluate each person individually in order to define the best solution to their problem.

Test, prevention and treatment for hypoacusis

The first step to better deal with hearing loss is to serenely recognize the difficulty in perceiving sounds. Confronting a loved one and booking a checkup can only pave the way for a better quality of life. The hearing capacity assessment carried out by the hearing care professional will establish the extent of the hypoacusis.

Prevention is essential: it includes proper ear hygiene, the use of hearing protectors such as headphones and specific earplugs for every occasion, and a healthy life that reduces the consumption of drugs, smoking and alcohol.

As we have seen, hearing loss can have different causes, types and severity, as well as affect any age and be associated or not with other pathologies.
In conductive hypoacusis, the removal of the causes usually results in a resolution of the problem (extraction for the earwax plug or for the foreign body, otitis drugs, surgery for otitis).

In the field of habilitation/rehabilitation, modern hearing aids have brought about a significant Sensorineural hypoacusis is usually more severe than the transmissive one and, generally, cannot be resolved with pharmacological and / or surgical treatment. Exceptions are those rare cases of sudden deafness in which therapy with cortisone drugs, diuretics and hyperbaric oxygen therapy cause a regression of the hearing loss.

With regard to mixed hypoacusis, specialist intervention with associated drug treatment is, in most cases, a solution to the problem. In addition, various researches have shown that hearing loss is a factor that can contribute to cognitive impairment in adults and/or the elderly: the higher the level of hearing loss, the greater the chances of compromising cognitive functions.

The adoption of simple remedies, such as early identification of deafness and the use of hearing aids, would not only be able to "prevent" the progression of cognitive impairment but could potentially alleviate the symptoms of the disease. Childhood hypoacusis: how to deal with hypoacusis in children.

Hearing loss in children, of whatever nature or extent, is a complex problem that requires effective prevention, early diagnosis and, if necessary, the adoption of hearing aids and a rehabilitation process.

The causes of hypoacusis loss can be classified into two groups: hereditary and acquired and the latter into prenatal, perinatal and postnatal.

- **Hereditary causes:** Numerous genes, from one or both parents, are usually responsible for most of the hearing loss in children. However, some genetic alterations can manifest themselves later in life, with a slow progression.

- **Prenatal causes:** they are, for the most part, due to infections contracted during pregnancy but also the use of some drugs, drugs and alcohol abuse have proved harmful.

- **Perinatal causes:** difficult to identify, the most frequent are represented by low neonatal weight (<1500 g), asphyxia and meningitis.

- **Postnatal causes:** they are mainly due to viral infections in the first years of life, together with meningitis and the use of ototoxic drugs.

It is essential that children have their hearing checked and, if necessary, quantify the hearing loss, identify the site of the injury and check whether the hearing loss is the cause of communication disabilities. Once the diagnosis has been established, a correct rehabilitation process must be carried out, which is fundamental for the child's psychosocial development.

Characteristic of persons with hearing problems

Hypoacusis often occurs with difficulty understanding what the other person is saying, especially in a noisy environment. Significant hearing damage can affect the child's verbal and linguistic development and produce further consequences on communication, psychological, educational, and social development.

The complexity of these effects depends on several factors: on the degree and duration of the hearing defect, on the age of onset, on the presence of associated pathologies, on the precocity of intervention, on the modalities and characteristics of prosthetic and rehabilitative treatment, but also on the type of communicative environment and the degree of support of the family environment.

Special tools used in the educational process for the target group

Deaf pupils can improve in autonomy and communication with the support of information technology.[2] Technological innovations have brought significant benefits to people with sensory disabilities. In the case of deaf children, for example, if the hearing disability is discovered very early, a short distance from birth, they can allow the perception of the first sounds, the voice of the parents and all the useful stimuli to reproduce the first verses and then the words. Prostheses allow, in fact, to activate different areas of the brain through hearing, allowing children to start talking. It is very important, however, that the diagnosis is very early.

This is not always the case and when silence has accompanied the early stages of childhood, specific support interventions must be activated, which allow for the success of communication and, with it, of learning. Deafness, in fact, involves a series of difficulties in the process of acquiring verbal language, which occurs naturally for those who hear and listen to the surrounding sound environment in the first years of life.

Special approaches in work with target group

How to intervene at school?

The modalities of intervention in the school environment can be many and related to the specificity of the situation. At school, however, didactic communication between teachers and students is mainly based on verbal communication and for many deaf pupils this involves obvious difficulties in learning. The use of tools that facilitate learning processes is useful. Among them, of course, the use of new teaching technologies can help overcome or reduce learning difficulties and contribute to educational success.

In fact, computer technologies allow adaptations in the use of computers, the use of images and animations, subtitles, etc. In teaching, teachers can prepare lessons with PowerPoint or build hypertexts, while students can use various specific software to support learning, multimedia vocabularies, text editors with images and more. In fact, there are dynamic interactive systems, which allow active and constructivist teaching methodologies and strategic solutions centered on representation, such as concept maps for study.

Not all children born or who have become deaf know Sign Language, especially in combination with new technologies and rehabilitation techniques. Therefore, it is necessary to discover the most comfortable way of interaction for the patient, whether it is lip-reading, signs or speech.

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2 https://www.researchgate.net/publication/348999181_Information_and_Communiction_Technologies_ICT_for_Teaching_Deaf_in_an_Inclusive_School_Context

Get their attention

There are several ways to attract their gaze: wave your hand as when you say goodbye, call it by gently placing a hand on your shoulder, always remembering that it is not necessary to scream, also because it is often ineffective and unpolite.

Maintain eye contact when interacting

Physically lower yourself to their level, so as to maintain effective eye contact and make our face clearly visible.
Do not move too much when speaking: this would make it difficult to hear your voice or read lips.

Speak clearly and simply

For deaf patients used to lip-reading it is necessary to produce words in a normal way. Speaking too fast and contrary makes reading very complicated. It is in fact based on the correct pronunciation.

Pay attention to the mouth

Covering your mouth with masks, with your hands or turning suddenly makes lip reading difficult: in this way you cover all the sounds produced.

Use visual cues whenever possible

Indicating or using gestures as a support, when expressing various concepts or explaining a procedure, this will make understanding easier.

Reduce surrounding noises

Children who wear prostheses or a cochlear implant focus a lot on the voice of their interlocutor. Communicating in noisy spaces makes the task even more complicated, producing stress and agitation in the child.

Therefore, choose a quiet and well-lit room.

4.2.2 Dyslexia

Definition of a person with "dyslexia"

Dyslexia belongs to "Specific Learning Disorders", which are based on a neuro-biological dysfunction that affects the development of the ability to read. It is marked reading difficulties due to the identification and processing of graphic signs. It mainly affects literacy skills, reading and writing and other language skills.[3]

Dyslexia is a common disorder in children and is manifested regardless of the child's intelligence level.

It presents difficulties in the ability of recognition and decoding of words that do not match another individual's cognitive abilities.

There is no medical treatment for dyslexia, which is corrected by special speech therapy programs. Dyslexic children cannot learn to read and write with the usual teaching methods, needing specific methods and therapies. Although learning difficulties cannot be cured, if treated properly, dyslexia can have serious consequences for emotional development, leading to personality development disorders and difficulties in social integration.

Characteristic of persons with "dyslexia"

There are several classifications of the forms of the disease, however, the most common is the one described. It includes types such as:

- Phonemic;
- Semantic;
- Agrammatical;
- Optical;
- Mnestic;
- Tactile;

The existence of reading disorders is always an indication of the existence of graphics disorders.

General symptom for dyslexia are:

- Reading disorder (dyslexia)
- Writing disorder (dysgraphia /dysorthographya)
- Computational disorder (dyscalculia)

3 https://www.redalyc.org/journal/4396/439656187008/html/

- For blind persons - can involve kinesthetic -tactile disorders, by discriminating braille dots
- Observable signs in behavior

There are a number of signs that may indicate a predisposition to the development of dyslexia:

Dyslexia can manifest itself in different ways, depending on the age of the patient.

The characteristics of dyslexia become evident at the beginning of school:

Early signs - These symptoms have been placed in a separate category, as their presence may indicate a neglected process of disease development.

- Changing the order of the letters when composing words;
- Lack of desire to read aloud and write essays;
- Changing the order of letters, words or numbers while writing and reading;
- Difficulty learning the alphabet, multiplication tables;
- Confusion in the simplest orientation (right-left, etc.);
- Inattention;
- Poor memory;
- Difficulties in implementing the simplest instructions;
- Left-handed grip;
- Difficulty learning spelling and reading principles.

School age

- Delays in speech development,
- Difficulty pronouncing and learning words.
- Poor memory, especially for words (confused or unable to remember the right word for a long time.
- Problems communicating with peers.
- Problems mastering the simplest reading and writing skills.
- Starts talking later than other children,
- Learn new words harder,
- Poor oral performance,
- Incorrect reading skills, Slow reading, not cursive
- Mistake reading (confuse letters, omit or add letters, syllables, words, reverse syllables or short words, read distorted, incomplete, erroneous words, repeat the syllables in the word),
- Has difficulty understanding the text being read,
- Difficulty reading the text,
- Difficulty remembering text, poetry, songs,
- Unsure when reading letters
- Difficulty pronouncing complex words

- Frequently misread line text,
- Does not enjoy reading,
- Avoid reading in front of others, read more slowly and with more mistakes than children of the same school age,
- Gets tired quickly while reading,
- Misspelling,
- Grammatical errors etc.
- Difficulty learning a foreign language,
- Difficulties in quickly understanding tasks and training.

Sometimes dyslexia are associated with emotional and behavioral disorders, conceptual thinking, attention and concentration disorders, visual perception and memory problems.

Special tools used in the educational process for the target group

Many tools are used to support the education of people with dyslexia. Here are some examples of commonly used tools;

- Speech therapy
- Specific therapies (eg Meixner method, Sindelar method, NILD method, Gosy method, Ayres method, TSMT method, etc.)
- Physiotherapy - coordination of movements, in the development of balance, disorders in body pattern and in orientation in space, an undeveloped or cross dominance.
- Psychotherapy
- Several methods are used: structured games method, child psychodrama, experiential psychotherapy, art therapy, VIT method, cognitive-behavioral therapy.
- Support Technologies: These programs are intended for use on mobile phones, tablets, and interactive whiteboards.
- Grammar tests,
- Software: Dyslexia Software
- Support technologies: readme - ebook-reader / Text-to-speech: “
- OCR or i20CR scanning software
- OrCam MyReader 2.0 - a standalone reading device, a modern and innovative device designed to help people with reading disabilities or visual impairments
- Electronic-devices-for-reading-and-recognizing-objects / orcam-myreader-2.0-text-reading-device.html
- RoboBraille - www.robobraille.org - e-mail and web service capable of automatically converting documents to many alternative formats, including audio files, e-books, DAISY books, etc.
- Electronic books: Speech therapy through games and exercises;
- Guide to speech development and correction;

- Audio dictionaries,
- Speaking Dictionary
- Voice recorders
- Check Lists
- Reading Pen

Special approaches in work with target group

Here are some techniques and approaches commonly used while studying with disabled students;

Students with dyslexia have a different style of learning, it is difficult to learn and acquire knowledge. It is important to get them to contribute to the lesson, so it is need to use special approaches in their learning environment. We can use strategies to teach in small steps, to create concrete learning experiences, to provide immediate and positive feedback, to structure information, and to give them the necessary processing time.

Here are some recommendations (techniques and approaches) commonly used during the activity with dyslexic students, with an emphasis on educational methods.

1. ICT technology in the classroom and visual of presenting information - PowerPoint presentations, UDL, video and interactive whiteboards (IT).
2. Planning the experiential learning session for students.
3. Avoiding generalization “what is good for one is good for all.” Adapting the intervention.
4. Monitoring students’ behavior during class and during recreation to avoid bullying.
5. Teamwork, Cooperation.
6. Using the differentiation technique in class. - individual worksheets, keeping the pace of instruction slow and clear, writing information in different colors. Organizing information in the form of sketches, outlined, mind maps.
7. Monitoring students’ academic and social progress, in terms of marginalization, social interactions with colleagues, behavior at home, and self-esteem.
8. Accurate identification of students’ talents and strengths,
   Using visual images and signs related to school life, events, daily schedule and national days.

9. Use a font that is appropriate for people with dyslexia that is clearly legible.
10. Avoiding visual distortions.
11. Choose the right paper / support for reading.
12. Provide clearly written instructions

4.2.3 Visual impairment

Definition of visual impairment (blind and partially sighted)

The definitions of blindness and partial sight, as well as the registration criteria, vary from one European country to another.

EBU adopts in principle the definitions used by the World Health Organisation (WHO) for blindness and partial sight. At the same time EBU advocates the importance of using the so called 'functional sight' parameters in addition to the WHO definitions when determining the support a blind or partially sighted person needs. The term "visual impaired" is used to indicate blind plus partially sighted people together.

Partially sighted and low vision are used an International Classification

Pupils with low vision are not considered legally blind; they simply have reduced vision at or lower than 20/70, while pupils who are blind have vision that is at or lower than 20/200. Nonetheless, only 15% of pupils with low vision are considered to be completely blind, with no light or form perception ability. When working with pupil with low vision it is important to remember that they have the potential to learn to use their vision in a more efficient way. It is important that educators learn to change the environment or alter objects to makes equal indication of limited sight.

Characteristic of persons with visual problems

Cognitive:

- Visual impairment will affect the quality and quantity of available information to a child for understanding the world around them. Impaired or poor vision makes it difficult to see the connections between experiences. "Minds cannot perceive anything that has not been received through the senses.

- Anything a child sees, hears, tastes, or smells is internalized and stored as a model of corresponding to the environment and determines what he/she knows about the world. Thus, a child lacking any of his/her senses might have a different pattern of development" (Raver, 2009).

- A blind child has limited capability to organize elements into higher levels of thought and to verify that information. Therefore, the child needs to create a reality that is different from a sighted child.

- Vision plays an important role in learning about object permanence, and thus children with visual impairments may acquire this skill over a wide age-range (Raver, 2009). These delays and difficulties limit the opportunities the child has for experiencing the environment and making sense of it. Another disadvantage visually impaired children face is not benefiting from visual imitation. Most sighted children learn through imitation from older peers or adults, and since a visually impaired child cannot see to imitate, they are at a disadvantage.

- Children with visual impairments do not learn through incidental learning (gathering information by observing people and objects), but rather learn through deliberate exposure or direct teaching (Raver, 2009). Concept development is also affected by vision loss in children.

- To develop a complete and comprehensive understanding of concepts in their world, sighted children can see the entire object and also focus on individual details of the object. Visually impaired children must move from part-to-part of an object until they eventually feel the whole object. Concepts such as colors, mirror images, and shadows are complicated for a young child with vision loss, as well (Raver, 2009).

Behavioral:

- "Although there are no behavioral or emotional characteristics specially associated with all students with visual impairments, some students who are totally blind or visually impaired exhibit behaviors such as rocking, eye-poking, hand or finger movements, gazing at lights, and other repetitive behaviors that may interfere with learning and social interactions" (Kauffman, 1981).

- Visually impaired children may also exhibit frequent squinting, blinking, eye-rubbing or face crunching.

- Some children who have vision issues are known to have short attention spans and may be sensitive to bright light. Some children might blink frequently or squint whenever they read or watch television, as well.

- Often visually impaired children might sit close to the television, hold books close to their face while reading, or hold toys very close to their face while playing.

- Visually impaired children may appear to be clumsy since they might trip, fall, or bump into various objects, especially in new situations (Keefer, 2015).

Socio-Emotional:

- Children with visual impairments interact less and are often delayed in social skills.

- Low vision or blindness can affect children's social skills because they are not able to assess and understand nonverbal communication and body language. They miss out on the information, thoughts, and feelings displayed with smiles, nods, shrugs, frowns, etc.

- "The inability to benefit from nonverbal communication may affect the ability of a child with a visual impairment to interpret and generalize from the actions of others" (Raver, 2009).

- Visual impairment also denies children the opportunity to initiate a conversation with eye contact. Eye contact is an important part of communication especially when the child is an infant. Not having that way of communication, parents need to communicate with babies in a different way such as through nuzzles and pats. Infants also may get startled or distressed with sudden touches if they are not announced first through sounds (Raver, 2009).

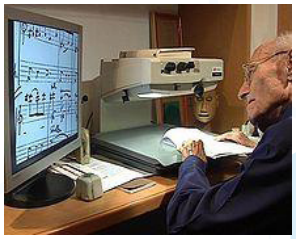
- Many self- help skills that are normally learned by watching others are delayed in blind children. Children with visual impairments may not effectively interact with family members, friends, or others. They may feel easily misunderstood or embarrassed, and also may feel isolated or have negative attitudes.

- Children with visual impairments may be focused only on their own interests and activities, may abruptly change conversation topics, or may be less responsive due to the lack of visually mediated peer interaction.

- In general, children with visual impairments have fewer self-initiated social interactions and spend more time alone (Raver, 2009).

Special tools used in the educational process for the target group

Term	Example	Description
Braille display	Picture 1: Braille display Alva (Source: Wikipedia) 	An electro-mechanical device for displaying Braille characters, usually by means of round-tipped pins raised through holes in a flat surface. Visually impaired computer users who cannot use a standard computer monitor can use it to read text output. (Source: Wikipedia)
Braille document, Printed Braille	Picture 2: Braille textbook (Source: center-iris.si) 	3D Braille, printed with Braille printer or written with Braille typewriter or created with other techniques.
Braille keyboard	Picture 3: Braille keyboard (Source: https://www.duxburysystems.com/documentation/cosmo/cosmo.htm)c 	3D Braille, printed with Braille printer or written with Braille typewriter or created with other techniques.

Braille typewriter	Picture 4: Perkins Brailler (Source: Wikipedia) 	The Perkins Brailler is a "Braille typewriter" with a key corresponding to each of the six dots of the Braille code, a space key, a backspace key, and a line space key. Like a manual typewriter, it has two side knobs to advance paper through the machine and a carriage return lever above the keys. The rollers that hold and advance the paper have grooves designed to avoid crushing the raised dots the Brailler creates. (Source: Wikipedia)
Computer Braille	Different for each language.	Computer Braille is usually 8-dot Braille and is an adaptation of standard 6-dot Braille. It is used for representation of computer content on Braille display.
Digital material, Electronic material		Electronic documents and other files, such as video, audio, image files, websites...
Electronic document	Documents in Word, PDF, txt formats, Excel Spreadsheets...	An electronic document is any electronic media content (other than computer programs or system files) that is intended to be used either in an electronic form or as printed output. (Source: Wikipedia)
Electronic magnifier, Video magnifier	Picture 5: Electronic magnifier (Source: Wikipedia) 	Video magnifiers are electronic devices that use a camera and a display screen to perform digital magnification of printed materials. They can be handheld, desktop or portable. (Source: Wikipedia)

Magnifying glass	Picture 6: Text seen through a magnifying glass (source: Wikipedia) 	A magnifying glass (called a hand lens in laboratory contexts) is a convex lens that is used to produce a magnified image of an object. (Source: Wikipedia)
Screen magnifier	ZoomText, Supernova Magnifier, Windows Magnifier...	A screen magnifier is software that interfaces with a computer's graphical output to present enlarged screen content. By enlarging part (or all) of a screen, people with visual impairments can better see words and images. (Source: Wikipedia)
Screen reader	JAWS, NVDA, Windows Narrator, VoiceOver, TalkBack...	A screen reader is a form of assistive technology that renders text and image content as speech or Braille output. Screen readers are essential to people who are blind, and are useful to people who are visually impaired, illiterate, or have a learning disability. Screen readers are software applications that attempt to convey what people with normal eyesight see on a display to their users via non-visual means, like text-to-speech, sound icons, or a Braille device. (Source: Wikipedia)

Speech synthesis	eBralec (Slovenian), AnReader (Serbian), eSpeak (different languages)...	Speech synthesis is the artificial production of human speech. A computer system used for this purpose is called a speech computer or speech synthesizer, and can be implemented in software or hardware products. A text-to-speech (TTS) system converts normal language text into speech; other systems render symbolic linguistic representations like phonetic transcriptions into speech. (Source: Wikipedia)

Special approaches in work with target group

Teaching tools applied to the education of pupils with visual impairments

a. Adaptation of materials for visually impaired pupils

Blind and low vision pupils encounter different things during their schooling: books, textbooks, workbooks, worksheets, basic texts, materials for checking, consolidating and assessing knowledge.

With adapted learning materials, we enable pupils to use the materials independently.

Appropriately adapted materials are more transparent and fully accessible for the blind and low vision pupils, thus providing them with better orientation within the materials and easier and faster use and reading.
The preparation of the material depends on the pupil's visual impairment and the needs arising from this impairment.

Detailed information on how to prepare materials for a specific pupil is presented by an itinerant teacher/expert of additional professional assistance or are presented in more detail in the training. Appropriate adjustments are also noted in the individualized program for each pupil.

Adapted learning materials are:

- Printed materials in Braille (6-point Braille);
- Printed materials in enlargement;
- Materials in digital form for use with Braille (8-point Braille) and/or for listening to synthesized speech;
- Materials in digital form for the visually impaired;
- Audio materials;
- Relief drawings.

When adapting materials for the blind or low vision pupils to different forms, we try to keep the content of the materials as identical as possible to the original. When adapting the material, we transform it mainly according to the form. In doing so, the instructions for individual exercises can be changed, more complex content records (e.g. diagrams, tables) can be transformed, and, if necessary, descriptions of images, tactile representations, and additional explanations can be added.

Teaching materials for blind or low vision pupils are prepared and adapted by the teacher of each subject area. They can be supported and assisted in this adaptation by the National Centre or the experts of the School for the Blind and Visually Impaired.

It is important that the identified needs of the pupils and the agreed rules of adaptation, with which teachers of the visually impaired pupils are acquainted during teaching training, are taken into account when adapting the materials.

Remember to include the pupil in reading a text if he/she has a Braille book or a book with an enlarged font.

4.2.4 Intellectual disabled

Definition of a person with intellectual disability

For the World Health Organization intellectually disabled means significant reduction in the ability of understanding new or complex knowledge and applying what has been learned. This results in reduced ability to cope alone and begins before adulthood whereas many of the individuals.

What Is an Intellectual Disability?

Intellectual disability (or ID) is a term used when a person has certain limitations in cognitive functioning and skills, including communication, social and self-care skills. These limitations can cause a child to develop and learn more slowly or differently than a typically developing child. Intellectual disability can happen any time before a child turns 18 years old, even before birth.

Intellectual disability is the most common developmental disability.

According to the American Association of Intellectual and Developmental Disabilities, an individual has intellectual disability if he or she meets three criteria:

1. IQ is below 70-75
2. There are significant limitations in two or more adaptive areas (skills that are needed to live, work, and play in the community, such as communication or self-care)
3. The condition manifests itself before the age of 18

How Does an Intellectual Disability Happen?

Intellectual disability—formerly known as mental retardation—can be caused by injury, disease, or a problem in the brain. For many children, the cause of their intellectual disability is unknown.

Some causes of intellectual disability—such as Down syndrome, Fetal Alcohol Syndrome, Fragile X syndrome, birth defects, and infections—can happen before birth. Some happen while a baby is being born or soon after birth.

Other causes of intellectual disability do not occur until a child is older; these might include severe head injury, infections or stroke.

What Are the Most Common Causes?

The most common causes of intellectual disabilities are:

Genetic conditions. Sometimes an intellectual disability is caused by abnormal genes inherited from parents, errors when genes combine, or other reasons. Examples of genetic conditions are Down syndrome, Fragile X syndrome, and phenylketonuria (PKU).

Complications during pregnancy. An intellectual disability can result when the baby does not develop inside the mother properly. For example, there may be a problem with the way the baby's cells divide. A woman who drinks alcohol or gets

an infection like rubella during pregnancy may also have a baby with an intellectual disability.

Problems during birth. If there are complications during labor and birth, such as a baby not getting enough oxygen, he or she may have an intellectual disability.
Diseases or toxic exposure. Diseases like whooping cough, the measles, or meningitis can cause intellectual disabilities. They can also be caused by extreme malnutrition, not getting appropriate medical care, or by being exposed to poisons like lead or mercury.
We know that intellectual disability is not contagious: you can't catch an intellectual disability from anyone else. We also know it's not a type of mental illness, like depression. There are no cures for intellectual disability. However, children with intellectual disabilities can learn to do many things. They may just need take more time or learn differently than other children.

Characteristic of persons with intellectual disability

The common characteristics of intellectually disabled persons are;

- Difficulty in learning and processing information,
- Difficulty in social interactions occurring in different levels unique to each individual.

The problems include difficulties with

- Skills in language, reading, writing, mathematics, reasoning, memory and knowledge retention,
- Social problems as empathy, judgment, communication, making and keeping friends and other social functions,
- Practical problems as self-care, such as personal hygiene, job duties, personal finance, organization.

There are many different signs of intellectual disability in children. Signs may appear during infancy, or they may not be noticeable until a child reaches school age. It often depends on the severity of the disability. Some of the most common signs of intellectual disability are:

- Rolling over, sitting up, crawling, or walking late
- Talking late or having trouble with talking
- Slow to master things like potty training, dressing, and feeding themselves
- Difficulty remembering things
- Inability to connect actions with consequences
- Behavior problems such as explosive tantrums
- Difficulty with problem-solving or logical thinking

In children with severe or profound intellectual disability, there may be other health problems as well. These problems may include seizures, mood disorders (anxiety, autism, etc.), motor skills impairment, vision problems, or hearing problems.

Special tools used in the educational process for the target group

Many different tools are used to assist education of intellectually disabled persons. They may vary according to the level of disability. Here are some sample tools used commonly;

- PECS (Picture Exchange Communication Systems)
- Voice recorders
- Check Lists
- Find&Plug Toys
- Time-Timers
- Speaking Dictionary
- Reading Pen
- Robots
- AR and VR technologies
- Applications as m-health, Quiver, iStorytime...etc

Currently, as special tools used in the educational process for the target groups is working on Interactive-boards as an Assistive Technology for students with intellectual disabilities in all levels to benefit from technology as much as possible.

Special approaches in work with target group

For intellectually disabled persons as we described before it is hard to learn and adopt knowledge. While working with them it is important to make them contribute to the lesson so we have to use special approaches in their learning environment. We can use strategies as teach with baby steps, create concrete learning experiences, give immediate and positive feedback, use songs and most importantly be patience.

Here are some techniques and approaches used commonly while studying with Intellectually disabled students;

Laptop Computers and Computerized Devices: Benefits of Assistive Technology
Laptop computers and tablet devices are beneficial for students with learning disabilities because they are portable and lightweight. For students with handwriting difficulties, being able to take notes on a laptop or computerized device (such as an iPad) can improve the quantity and quality of the notes (Vaughn & Bos, 2009). Using a word processor can help students to complete work that is more organized and includes less spelling errors than handwritten work (Hetzroni

& Shrieber, 2004). In addition, students may identify and correct more errors when using spell check than when editing by hand (MacArthur, Graham, Haynes, & De La Paz, 1996; McNaughton, Hughes, & Ofiesh, 1997). However, obtaining personal access to laptops and computerized devices does not ensure engagement and increased academic success (Donovan, Green, & Hartley, 2010). For many students, laptop computers and computerized devices can be too distracting. Teachers and students need to be trained in how to meaningfully integrate technology into academic contexts so that the devices don't detract from learning (Dell, Newton, & Petroff, 2012).

Computer-assisted Instruction

Computer-assisted instruction refers to software and applications that have been designed to provide instruction and practice opportunities on a wide range of devices (e.g., computer, laptop, iPad, mobile technology). Computer-assisted instruction provides immediate and dynamic feedback and students with learning disabilities can benefit from this nonjudgmental computerized drill and practice (Stetter & Hughes, 2010). Computer-assisted instruction has been shown to be helpful for students with learning disabilities in spelling and expressive writing skills (Wanzek et al., 2006) as this software can reduce distractibility (Hecker, Burns, Elkind, Elkind, & Katz, 2002), and can help students learn to read (Lee & Vail, 2005) and achieve other academic outcomes (Chiang & Jacobs, 2009). Computer-assisted instruction is also an effective way for students with learning disabilities to practice math drills (Bouck & Flanagan, 2009), as students who used computer-assisted instruction to practice math skills were able to memorize math facts more easily, and developed a more positive attitude towards math than students who did not use computer-assisted instruction (Adcock et al., 2010).

Computer-assisted Instruction Summary Points

1. Computer-assisted instruction provides students with dynamic feedback.
2. Computer-assisted instruction can help students practice spelling and multiplication drills.
3. In order to prevent the technology from being a distraction, students need to be taught how to use technology to support their learning Software Functions

Assistive technology can improve the writing skills of students with learning disabilities (Batorowicz, Missiuna, & Pollock, 2012). Assistive technology can help students to bypass the mechanical aspects of writing. Using spell check and grammar features can help students focus on communicating their ideas and students can write with confidence knowing that they can easily make changes. In addition, being able to submit a final assignment that is neater and better organized supports positive self-esteem.

5. National context REGARDING TO INCLUSIVE EDUCATION in partner counties

5.1 Italy

Primary education of persons with disabilities

In Italy, special schools have been eliminated for many years now. Pupils with disabilities, with any disability, can attend schools together with "normal" pupils. We talk about inclusive education, the cornerstones of which are: integration, sharing, collaboration and accessibility. This type of school is aimed at closing the gap, with a view to acceptance, coexistence and enhancement.

Inclusive teaching uses ways of teaching in which teachers and students are equally involved. Each teacher, not just the support teacher, who works alongside disabled pupils, must be able to adapt their discipline to the inclusive method to ensure learning by all pupils and enhance their individual aptitudes. For this reason, it is essential that teachers are enabled to be trained in this sense and constantly updated. In inclusive teaching, teaching and learning are complementary, as the methodological strategies adopted have the aim of:

- Customize the training offer;
- Arouse pupils' interest and motivation, promoting interaction with teachers;
- Stimulate students' active learning.

The traditional methodology, based on static and unilateral lectures, gives way to an interactive, dialogic and relational approach between teachers and students. Through dialogue and interaction, teachers can understand the needs of the individual pupil and develop customized and functional solutions that enhance individual potential rather than repress it. The goal is to enhance the differences and leverage them to express themselves in an autonomous, responsible, and conscious way.

Relevant statistics

During the academic year 2020-2021, the number of students with disabilities that attend Italian schools increases (+4 thousand, 3.6% of the total students). Participation in teaching improves: students who are excluded from distance learning decrease to 2.3%, in contrast to the 23% of last year. The differences are also due to the new rules that require students to attend lessons in class with their classmates (38%).

Requests for distance learning devices are satisfied in the 98% of cases.
The number of learning support teachers increases. The ratio of students to learning support teachers is better than the legal provisions, but one in three teachers has no specific training and 20% of them are assigned late.

During the school year 2020-2021 more than 300thousandi students with a disabilityii attend Italian schools (3.6% of the total students) (from MUR); approximately/about 4thousand more than the previous year (+2%). This is due to: a greater attention in diagnosing and certification of disabilities among young people, an increased demand of assistance from families and finally to an increased schools' sensitivity to inclusion of student with disabilities. The persist of distance learning, due to the pandemic, has made the process of school inclusion more complicated, preventing interaction between students and learning participation. However, compared to the previous year, there has been an appreciable increase in participation levels, also due to a more adequate schools organizationiii . In the school year 2020-2021, students with disabilities excluded by the distance learning are 2.3%, compared to the 23% recorded in the previous year. The share rises to 3.3% in the southern schools, with maximum of 4% in Calabria and Campania. The main reasons that limited the participation of students with disabilities in distance learning are unchanged compared to the previous year. The more frequent are: the severity of the pathology/disease (26%), the socio-economic disadvantage (14%), the family's organizational difficulties (14%) and the lack of adequate devices (11%).

Legislation
CONSTITUTIONAL PRINCIPLES

- LAW 118/71: art. 28: "Provvedimenti per la frequenza scolastica": (Provisions for school attendance: principle of integrating pupils with disabilities into normal classes);

- LAW 517 del 4/08/77: initiation of the principle of scholastic integration of pupils with disabilities, abolishing differential classes;

- CONSTITUTIONAL COURT JUDGMENT N. 215 / 1987: extends the right to integration of h pupils to the entire upper secondary school, while until that year it was provided only for compulsory school and kindergarten;

- M.C. n. 262/88: it is the "Magna Carta" of school integration.

- LAW 104/92: "Legge quadro per l'assistenza, l'integrazione sociale e i diritti delle persone h". ("Framework law for assistance, social integration and people's rights h". In particular with regard to the right to education and education, see

Articles 12,13, 14, 15 and 16 which still represent a fundamental point of reference for achieving the quality of school integration and for the definition the role and skills of specialist support teachers);

- DPR del 24 febbraio 1994 "Atto di indirizzo e coordinamento relativo ai compiti delle unità sanitarie locali in materia di alcuni portatori di handicap" (Act of guidance and coordination relating to the tasks of local health units in the field of some handicapped persons). The decree establishes the guidelines and coordination of the Regions to regulate the tasks of the Local Health Units in relation to the functional diagnosis, of the functional dynamic profile referred to in paragraphs 5 and 6 of art. 12 L. 104/92.

- T.U. L. 297/94: The teacher's assignment for class support activities represents the "true" nature of the role he plays in the integration process.

- LAW n. 17 of 28/01/1999 "Integrazione e modifica della legge-quadro 5 febbraio 1992, n. 104, per l'assistenza, l'integrazione sociale e i diritti delle persone handicappate". "Integration and modification of the framework law no. 104 of 5 February 1992, for assistance, social integration and the rights of handicapped people". The law makes changes and additions to articles 13 and 16 of Framework Law 104/92 in favor of handicapped students enrolled at university.

- NOTE n. 4274 of 4 august 2009 "Guidelines for the scholastic integration of pupils with disabilities"

- MINISTERIAL NOTE reg. n. 4798 of 25 july 2015: reiterates the need for the involvement of all teaching, curricular and support staff;

- UN CONVENTION of 20/11/1959: social model of disability centered on the human rights of people with disabilities.

The United Nations Convention on the Rights of Persons with Disabilities, approved by the United Nations General Assembly (UN) represents an important result achieved by the international community.
In its guiding principles, the Convention does not recognize "new" rights for people with disabilities, but ensures that they can enjoy, on the basis of the legal systems of the countries they belong to, the same rights recognized to other associates, in application of the general principles of equal opportunities for all.
The Italian Parliament with the law n. 18 of 3 March 2009 ratified the UN Convention on the rights of persons with disabilities.

The WORLD HEALTH ASSEMBLY has developed systems for the classification of deficits:

- FROM ICIDH (1980): description of the effects of the deficit on the person and on his or her social participation
TO ICF (2001): inclusion depends on the integrative abilities of the disabled person and the social and community environment in which they live.
Inclusion becomes an indispensable choice to adequately respond to the growing BES of a school for all (disabilities, difficulties, disadvantages)

- LAW n. 328 of 08/11/2000 "Legge quadro per la realizzazione del sistema integrato di interventi e servizi sociali". (Framework law for the realization of the integrated system of interventions and social services). In particular, article 14 states that: "to achieve the full integration of disabled people referred to in article 3 of law no. 104 of 5 February 1992, in the context of family and social life, as well as in the pathways of school or professional education and work, the municipalities, in agreement with the local health unit companies, prepare, at the request of the interested party, an individual project".

- LAW n. 170 of 8/10/2010 about DSA: "Nuove norme in materia di disturbi specifici di apprendimento in ambito scolastico". (New rules on specific learning disabilities in schools).
Guidelines with Ministerial Decree n. 5669 of 12 July 2011; Understanding of the State-Regions Conference of 25 July 2012.

- DIRECTIVE A. M. of 27 december 2012 "Strumenti di intervento per alunni con bisogni educativi speciali e organizzazione territoriale" (Intervention tools for pupils with special educational needs and territorial organization): establishes the GLI (Working Groups for Inclusion which in Article 15 of Law 104/92 were Working Groups for Integration).
The aim is to enhance the culture of inclusion to achieve everyone's right to education.

- C.M. n. 8 of 6 March 2013: suggests actions at the level of individual schools and the establishment of the GLI (Working Group for Inclusion) extended to the issues relating to all SENs.

- Note n.1551 of 27 June 2013: PIANO ANNUALE INCLUSIVITA' (P.A.I.) (ANNUAL INCLUSIVITY PLAN). The annual plan for inclusion (PAI) is drawn up at the end of each school year, is approved by the Board of Teachers in June and is an integral part of the Piano dell'Offerta Formativa (POF) (School Educational Syllabus).

5.2 Romania

Primary education of persons with disabilities

In order to ensure equal access to education for preschoolers and students with special educational needs integrated into mainstream education, are assigned special teachers like itinerant and support teachers. They provide help for curriculum adaptation of content, teaching materials, specific work and assessment tools, monitoring the application of the adapted curricula, in partnership with the teachers from the group / class, for the implementation of the personalized educational plan;

For children with severe disabilities, following an evaluation at CJRAE, they can be placed in special schools.

For those with multiple disabilities, it is leaded according to the dominant disability Students with special educational needs, based on their individual competencies and depending on the psycho-pedagogical profile, are placed in the national education systems, taking into account their level of development. Children with disabilities who cannot move and cannot go to school have the right to apply for homeschooling.

Following an assessment and diagnosis made according to the children disabilities, the student's family with TSI can choose for early intervention, preschool, primary, secondary and vocational education.

Relevant statistics
The number of students in pre-university education

Special education population
Primary - 6795
Secondary - 9850

2,700 - Number of Institutions dealing with the supporting of Disabled Students (SEN students) (including private and governmental bodies)
450,000 - Number of SEN students having education
27,000 - Number of Teachers working actively in the field of Special Education.

In the school year 2019 - 2020, at national level they were framed
1,429 support teachers,
2,196 schoolchildren counselors
601 speech therapist teachers,
43,910 students with SEN and / or disabilities integrated in mainstream schools.

221 special education units,
24,922 preschoolers and students with various types of disabilities.
71,155 - TOTAL NUMBER OF CHILDREN WITH DISABILITIES (NON-INSTITUTIONALIZED AND INSTITUTIONALIZED) ON 30.09.2020
2,091 auditory
2,891 visually
9,633 - mental
In Romania, estimates show that over 400,000 children have language difficulties, about 10% of all children in Romania.

Legislation
EDUCATION AND TRAINING

According to Order 3124/2017 on the approval of the Methodology for ensuring the necessary support for students with learning disabilities Art. 18, the obligation to adapt the educational-formative process to the needs of the student with TSI belongs to the educational unit, only for student's certificate of school and vocational guidance.

Order no. 1985/1305/5805/2016 on the approval of the methodology for the evaluation and integrated intervention in order to include children with disabilities in the degree of disability, the school and professional orientation of children with special educational needs, as well as in order to enable and rehabilitate children with disabilities and / or special educational needs.

Procedure no. 31276 / 24.06.2020 for the admission of students for the special places allocated in education high school, vocational and dual state in the mainstream education units, for the individual integration of students with special educational needs (SEN) from mainstream and special education .

ORDER No. 4532/2020 of 15 June 2020- for the modification and completion of the Order of the Minister of National Education, interim, no. 4,948 / 2019 regarding the organization and development of the admission in the state high school education, which provides a special number of high school places for students with SEN

The existence of the category of children with dyslexia, dysgraphia and dyscalculia was recognized for the first time by Law 6/2016 on the education of persons with learning difficulties that complements the National Education Law No. 1/2011.

MEN Order no. 3124/2017 approves the Methodology for providing the necessary support to students with learning disabilities;

Gives appropriate assessment procedures for dyslexia, dysgraphia and dyscalculia, as well as the type of intervention to provide individualized and personalized education to these children.

Free support is provided for children with TSI at school through speech therapists from the County Center for Educational Resources and Assistance (CJRAE), There are also different types of NGOs or professional associations that offer rehabilitation activities to students with TSI.

LAW no. 448 of December 6, 2006 -on the protection and promotion of the rights of persons with disabilities*)

LAW No. 197/2012 of 1 November 2012, -on quality assurance in the field of social services

LAW no. 272 of 21 June 2004 -on the protection and promotion of the rights of the child, as subsequently amended and supplemented

5.3 North Macedonia

Primary education of persons with disabilities

The Constitution of the Republic of North Macedonia stipulates that education is accessible to everyone under equal conditions. Primary education is compulsory and free. A new Law on Primary Education was adopted in 2019, introducing a normative framework on non-discrimination and equality of children in the education process, where disability was established as a discrimination ground for the first time. Furthermore, the Law prescribes full inclusion of children with disabilities and that special schools shall continue to work as primary schools with resource centers starting from 2020/2021, with students being enrolled from the 2022/2023 school year. However, it is necessary for the Ministry of Education and Science to organize the terrain and prepare primary education for full inclusion of students with disabilities.

The right to non-discrimination includes the right to non-segregation and must be understood in the context of the obligation to provide inclusive education for children with disabilities. The Law on Secondary Education fails to recognize discrimination on the ground of disability and fails to recognize inclusiveness of people with disabilities as a special goal, calling for amendments and adoption of a new law.

The number of children with special educational needs indicates that in the 2019/20 school year, in the municipal primary schools in the Republic of North Macedonia, the total number of students with special educational needs enrolled was 4,183. Out of these 1,373 were students with disabilities (confirmed with a diagnosis and opinion issued by a professional body for assessing the type and degree of disability or with a functional profile received by the Professional Body for Functional Assessment), 161 of which were enrolled at first grade in the 2019/20, while 1,549 were students with a behavioral disorder or emotional problems or with specific learning disabilities.

Special schools do still exist, hence discrimination, i.e. segregation continues. The total number of students with disabilities in the two special primary schools in Skopje (SEI Dr. Zlatan Sremec and SEI Idnina) was 196 in the 2019/20 school year. Of particular concern is the fact that the Professional Body for Functional Assessment issued a transfer recommendation from a special to regular school to 23 students, but only 6 students acted pursuant to the recommendation. The reasons for not acting pursuant to the recommendation are the parents' categorical demands, i.e. their opinion that their children should continue their education in the special primary schools, which only points to the fact that even parents' awareness on how beneficial inclusion could be is on a low level or they are afraid of additional discrimination suffered by their children in the regular educational system. In addition, the State School for Children and Youth with Impaired Vision Dimitar Vlahov located on the territory of the Skopje region, is a school attended by students with impaired vision from all over the country who are completely segregated from the regular educational process. The data received indicates that this school has a total of 31 students, 21 with blindness and 10 partially sighted, which makes them completely segregated from the regular educational system. Pursuant to the Law on Primary Education it was determined that primary schools should form inclusive school teams and inclusive teams for students studying pursuant to an individual educational plan. A large number of the schools formed inclusive school teams, however the teams fail to include all of the legally prescribed members.

88,2% of the regular primary schools consider that inclusive education is difficult to implement in practice with numerous factors preventing inclusion[4] such as: inaccessibility of the infrastructure, maladjusted learning environment (lack of proper technical-material conditions, didactic materials and teaching means), refusal to show acceptance and negative attitudes from the teachers, parents and other students, insufficiently developed professional competences of the teaching staff for working with children with disabilities, lack of professional staff, special educators and a rehabilitator, larger number of students in a classroom, and lack

4 Ombudsman's report, Special report from the conducted research on the situation with the exercise of the right to education of children with special educational needs in primary schools in Skopje region in Republic of Northern Macedonia, 2019.

of teaching assistants and professional and systematic support. Furthermore, the teaching quality, knowledge and skills students with disability receive are on a lower lever in comparison to those in regular schools.
Special schools apply a protective approach to a great extent, contrary to the approach based on human rights and preparing the students for independent life of quality in society. Lack of educational staff for working with disabled students There is a necessity to sensitize, further train and improve professional competences of the entire teaching staff for working with disabled students. Educating the teaching staff should be done from an aspect of children's rights and the rights of people with disability, and it should be done in continuity by high-quality and experienced trainers, which was supported with the data from the Ombudsperson's research according to which teachers themselves admitted to requiring additional training. Lack of professional associates Teams for professional services lack all necessary professional associates, although in the past two years a large number of psychologists, pedagogues and special educators were employed at primary schools. These professional associates spend a significant part of the working hours in administrative activities related to the school but not to their professional profile. Consequently, although schools employ professional staff, in practice, students and teaching staff fail to receive the support which should be extended from the primary expertize of the professional associates. According to the research conducted by the Ombudsperson and the Helsinki Committee on this subject, there is a lack of special educators and rehabilitators, as well as speech therapists, a particularly startling information considering that these individuals as professionals are the most appropriate for offering support to disabled students in inclusive teaching.

Lack of a national register for children with disabilities

A huge problem is also the large number of children with developmental disabilities who are not included in the educational system. There is no national register in Macedonia due to the lack of precise data on the number of these individuals.

Legislation

Name and link	Year and status (enacted, under preparation etc.)	Description of key content
Law on Primary Education http://www.mon.gov.mk/images/Zakon_za_osnovn oto_obrazovanie_br._161 -_2019.pdf	Official Gazette of the RNM, No. 161 from 5.08.2019	The Law defines inclusive education as a process that takes into account the diverse individual needs for development of students, by ensuring equal opportunities for exercising the fundamental human rights to development and quality education. Inclusive education entail changes and adjustments to the content, structures and strategies of the teaching process for students with disabilities, along with a common vision and conviction that the state is under the obligation to provide education to all children.
Law on Secondary Education http://mon.gov.mk/images/documents/zakoni/zakon-za-sredno-2015.pdf	Consolidated text (Official Gazette of RM no. 44/1995, 24/1996, 34/1996, 35/1997, 82/1999, 29/2002, 40/2003, 42/2003, 67/2004, 55/2005, 113/2005, 35/2006, 30/2007, 49/2007, 81/2008, 92/2008, 33/2010, 116/2010, 156/2010, 18/2011, 42/2011, 51/2011, 6/2012, 100/2012, 24/2013, 41/2014, 116/2014,135/2014, 10/2015, 98/2015 and 145/2015)	Article 32 envisages that secondary education shall be organized based on plans and curricula designed to, interalia, "ensure access to secondary education to students with special education needs" Students with special needs are not mentioned at all in any of the provisions governing enrolment of students in mainstream secondary schools. The law provisions existence of secondary schools for students with special needs, which are primarily technical and crafts vocational schools; free transport of students with special needs (and their assistance) regardless of the distance from the school. *New Law, in line with the Education Strategy, is expected to be developed and carried within 2020.

Law on Student Standard	Consolidated text (Official Gazette of RM No. 52/2005, 117/2008, 17/2011, 135/2011, 15/2013, 41/2014,146/ 2015,30/16, 64/2018 and 20/2019)	The Law refers on the roles of student dormitories, for students learning outside of their place of living. It provisions that the dormitories can form groups of students with special needs. The Law also determines the different type of scholarships students can receive based on their needs and socio-economic background, and with the aim of inclusion in education. (see Question 2.7)

5.4 The Netherlands

Primary education of persons with disabilities

The aim in the Netherlands is that all children participate as much as possible in regular education (optimal inclusion). Where possible, adjustments are attempted first. If that does not help, a child can go to a special school for the disabled.

The UN Disability Convention states that the government must ensure an inclusive education system at all levels. This is a system that is designed in such a way that all children can participate in education. Then there are no separate schools for children with disabilities.

In the Netherlands we have had the Appropriate Education Act since 2014. The aim is to ensure that pupils with disabilities attend a 'normal' school as much as possible. A special education school is really only for students who need very special extra care. Schools are responsible for placing a student who needs (extra) support. The school must always first investigate whether it can offer the pupil (extra) support. If that is not possible, the school must look for another school where the pupil does receive sufficient extra support. The school is obliged to take care of this. That is called duty of care.

The Netherlands Institute for Human Rights still finds that this ideal has not yet been achieved by a long way and the university is urging the central government to take measures.

However, the number of physically or mentally handicapped children who attend a regular school with supervision is more than doubled between 2000 and 2005.

In primary education, the number increased by 97 percent, in secondary education by 146 percent.

Special schools (primary education)

These special schools are intended for students with physical, sensory or mental disabilities and students with behavioural disorders. There are a total of ten types of schools for this group of children, which are divided into four clusters:

Cluster 1: Visually impaired.
Cluster 2: Aurally or communicative impaired
Cluster 3: Mentally or physically impaired.
Cluster 4: Serious behavioural or learning problems.

Legislation

The Health Insurance Act regulates everything in the field of medical care, nursing (community) care, psychiatric treatment and rehabilitation care. This mainly concerns so-called curative and relatively short-term care.

(WLZ) The Long-term Care Act is for people with such a severe disability that they require lifelong and life-wide care and support, and where care can be provided 24 hours a day in the immediate vicinity.

(WMO) The Social Support Act regulates the care for people who do not qualify for care under the WLZ, but who need support as a result of a long-term disability or condition because they would otherwise be unable to sufficiently care for themselves or participate in the health care system. society.

The Youth Act. This law regulates all care that children may need, with the exception of care under the ZVW and the WLZ.

The Participation Act. This law regulates the most important matters in the field of income and work for people with an occupational disability.

(WMCZ) The Patient Participation of Healthcare Institutions Act provides the legal framework for the functioning of client councils in healthcare.

The Care and Coercion Act for Psycho-geriatric and Intellectually Disabled Clients regulates the way in which involuntary care must be arranged.

Suitable education. This concerns a large number of changes in various education laws that should make it easier for every child who needs extra support in education to receive it.

5.5 Poland

Primary education of persons with disabilities

Special education - the educational system provides a possibility of education in all types of schools for children and youth with disabilities, in accordance with individual development, educational needs and predispositions, as well as care for students with disabilities by making it possible to implement an individualized education process, forms and teaching programs, as well as remedial classes.

The Regulation of the Ministry of Education of September 7, 2017 defines the conditions for organizing education, upbringing and care for children and youth with disabilities:

- Deaf and hard of hearing,
- Blind and dim-sighted,
- With motor disabilities, including aphasia,
- With mild, moderate or severe intellectual disabilities,
- With autism, including Asperger's syndrome,
- With coupled disabilities, referred as " students with disabilities"

Special education is organized in:

1. Kindergartens:
    - **a.** Public,
    - **b.** Public with integrative classes,
    - **c.** Integrative,
    - **d.** Public with special classes,
    - **e.** Special;
2. Kindergarten units in elementary school;
3. Other forms of preschool education;
4. Schools:
    - **a.** Public schools,
    - **b.** Public schools with integrative classes,
    - **c.** Integrative schools,
    - **d.** Public schools with special sections,
    - **e.** Special schools, including special preparatory schools;
5. Youth education centers;
6. Youth sociotherapy centers;
7. Special education and re-education centers;

8. Special educational centers;
9. Remedial-educational centers for children and young people with profound intellectual disabilities and for children and young people with multiple disabilities, in whom one of the disabilities is an intellectual disability.

Due to health condition - organization of annual preschool preparation or individual teaching

The education of students with disabilities may be carried out until the end of the school year in that calendar year in which the student reaches:

- 20. year of age - in the case of a primary school,
- 24th year of age - in the case of a secondary school

Relevant statistics

At present, the main source of knowledge acquisition is the Internet, which offers a very significant advantage over previously used sources such as libraries and book publications. The advantages are the speed of publication and the range of information provided. The disadvantage is the credibility of the information published on the Internet and the lack of verification. The most reliable websites, which we can be sure of, are those of institutions with a high level of trust and political independence. In Poland, one of the sources of statistical data is the Central Statistical Office (www.stat.gov.pl), and provincial branches. A very popular publication, used also in the didactic process, is the Statistical Yearbook of the Republic of Poland, and relevant publications for individual voivodeships (Statistical Yearbook Kraków 2021) or statistical guides for other cities (Statistical Guide Tarnów 2021). Additional sources of data are websites of governmental institutions e.g.:https://cie.gov.pl/.

EU residents have the right and opportunity to use statistical data published on the websites of the EU institutions (e.g. https://ec.europa.eu/info/departments/eurostat-european-statistics_pl).

A detailed analysis of the Statistical Yearbook of the Republic of Poland 2021 presents general data on people with disabilities in the country (selected data):
- persons with disabilities 469700 persons (216690 - men, 253010 - women) [tab. 138; p. 213]:

- disabled working (full-time) 33370 [tab. 169; p. 248].
- special schools 953 [tab. 251; p. 354].
- education and upbringing - kindergartens [tab. 268; p. 369].

Detailed data for the Małopolskie Voivodship can be found in the Statistical Yearbook of Kraków.

The difference is that they are not as elaborated as in the Statistical Yearbook. Below we present some selected numbers referring to Małopolska:

- Special preparatory schools -12 [tab. 79; p. 156].
- Special adopting lower secondary schools - 255 [tab. 79; p. 158].
- Diagram of the education system in Poland [p. 292].
  More information can be found in the graphic material prepared by the Statistical Office, e.g.: https://krakow.stat.gov.pl/infografiki/infografiki-us-krakow/osoby-niepelnosprawne-w-wojewodztwie-malopolskim-w-2019,6,10.html.

The latest statistical handbook for the city of Tarnów does not provide any information on people with disabilities and special schools, although they exist in the city. The missing information will be gradually supplemented based on other available sources.

According to the information obtained from the Plenipotentiary for people with disabilities of the State Higher Vocational School in Tarnow, there are 92 students with disabilities at the university (state: 31 December 2021). For various reasons, not every person reporting to the Plenipotentiary is aware of the facilities and the scale of assistance they are entitled to.

When we go deeper into the topic of the needs of people with disabilities and their functioning in society, facilitating contact with education and science, it makes sense to implement this project. It is important to remember that the applications are aimed at people with specific needs - but we cannot exclude that others will not benefit from them.

Legislation

1) The Act of 14 December 2016 Education Law (Journal of Laws of 2021, item 1082),
2) The Act of 7 September 1991 on the educational system (Dz.U. of 2020, item 1327),
3) Regulations of the Minister of National Education: of 9 August 2017 on the conditions for organising education, upbringing and care for children and young people with disabilities, social maladjustment and at risk of social maladjustment (Journal of Laws of 2020, item 1309),
4) of 3 April 2019 on framework teaching plans for public schools (Journal of Laws of 2019, item 639, as amended),
5) of 9 August 2017 on individual compulsory annual preschool preparation

of children and individual teaching of children and youth (Journal of Laws of 2017, item 1616, as amended),

6) Regulation of the Council of Ministers of 15 June 2021 on detailed conditions for the implementation of the government programme "Good start" (Dz. U. of 2021, item 1092),

7) Regulation of the Council of Ministers of 26 June 2020 on detailed conditions for granting aid to disabled students in the form of subsidies for the purchase of textbooks, educational materials and practice materials in 2020-2022 (Dz. U. of 2020, item 1227).

5.6 Turkey

Primary education of persons with disabilities

Students with special educational needs, based on their individual competencies are placed in education systems, taking into account their developmental characteristics. Children with disabilities who are unable to leave their homes and go to school have the right to homeschooling. Those who want to take advantage of this right; They meet with RAM and prepare the necessary documents. With the decision of the RAM, the Guidance and Research Center's educational evaluation and diagnosis, training plan, orientation, placement reports, as well as education in the most appropriate public or private education institutions according to their disability, and support education services are provided to increase their life and academic skills. These trainings are applied according to the disability of the person as early childhood, pre-school education, primary education and vocational education.

Relevant statistics

Graduation	Visual Impaired	Hearing Impaired	Intellectual Disability	Dyslexia
Primary school graduate	29.0	17.9	4.6	10.7
Middle School Graduate	12.5	16.4	8.2	11.0
High School Graduate	14.6	11.1	0.7	6.1

2.700 - Number of Institutions dealing with the supporting of Disabled Students (SEN students) (including private and governmental bodies)
450.000 – Number of SEN students having education
27.000 – Number of Teachers working actively in the field of Special Education.

Legislation
Education and training

Article 15- the right of education of the disabled people cannot be prevented by any reason. The disabled children, youngsters and adults are provided with equal education with the non-disabled people and in inclusive environments by taking the special conditions and differences into consideration. Counselling and Coordination Centre for Disable Disabled People is established in order to carry out works within the Higher Education Council on the procurement of tools and equipment, preparation of special class material, enabling the preparation of education, research and accommodation environments suitable for the disabled people in order to facilitate the education life of the disabled university students The operation methods and principles of the Counselling and Coordination Centre for Disable Disabled People are arranged by the regulation which is prepared jointly by the Ministry of Health, the Ministry of National Education, Higher Education Council and the Administration on Disabled People. Turkish sign language is created by the Turkish Language Institution in order to provide the education and communication of the hearing-impaired people. The methods and principles of the works for creating and implementing this system are determined by the regulation to be issued jointly by the Ministry of National Education, General Directorate of Social Services and Protection of Children Agency and Administration on Disabled People under the coordination of the Turkish Language Institution. The required procedures in order to provide the production of relief, audio and electronic books, subtitled film and similar material to meet all kinds of educational and cultural needs of the disabled people are carried out jointly by the Ministry of National Education and the Ministry of Culture and Tourism.

Job and Profession Analysis

Article 12- Job and profession analyses taking the disability types into account are made by the Ministry of National Education and the Ministry of Labour and Social Security under the coordination of the Administration on Disabled People. Within the light of these analyses, the vocational rehabilitation and training programmes which appropriate for the conditions of the disabled people are developed by the foregoing organizations.

6. Gamification in the educational process of pupils with disabilities

Special education aims to help learners experiencing difficulties or disabilities in regular classrooms to promote their social participation and independence (Kavale, 1990). Professionals in this area have long faced the urgency to investigate what educational practices are effective and beneficial to learners with disabilities (Moeller et al., 2015). In recent years, in response to the need for special education, several educational techniques have been identified and validated for effectiveness, including game-based learning (Anwar et al., 2011; Görgen et al., 2020).

Game-Based Learning (GBL) originated from the game research in the middle of the 1950s, and from the 1980s scholars started the research and practice of integrating games into instruction. With the popularization of electronic games and the transformation of education concepts, users started gradually accepting games as learning tools (Seaborn and Fels, 2015). In GBL research, the following three terms are always used namely: serious games, educational games and digital educational games (Pan et al., 2021). These three terms have similarities and differences among their definitions. Therefore, clarifying their meanings and relationships can help to understand the scope of the current study. The term "serious game" was first used by Apt (1970) to describe games designed for learning. Apt stated that serious games must have an educational purpose and not be played primarily for entertainment (Apt, 1970). Educational games in a narrow sense are electronic games specially developed for educational purposes (Moreno-Ger et al., 2008). Educational games in a broad sense not only involve traditional games (Vos et al., 2011), but also include all educational software, teaching aids, toys with the characteristics of both education and fun. Educational games should be developed by considering the objectives and functions of education. Digital educational games are educational games which are supported by different information technology and digital platforms (Lin and Lin, 2014; Aslan and Balci, 2015) to promote learners' understanding of a given learning content. In this study, game-based learning is considered as any environment which uses various technology and platforms, as well as applies games or related elements, concepts, mechanisms or designs to teach a given concept or subject (Deterding et al., 2011).

Game-based learning can provide immersive learning experiences while mastering knowledge and skills. Specifically, it supports the development of analytical reasoning skills and self-directed learning, cooperative skills and group problem-solving, which are essential for learners with disabilities (Dziorny, 2007). For instance, Özen (2015) selected six iPad games as tools to promote interaction between regular developing and Autism spectrum disorder (ASD) siblings. This study was performed with peers of siblings: one with ASD and the other one without.

After the training period, all three ASD children were able to satisfactorily learn abilities, which were maintained, for at least 2 weeks. Hatzigiannakoglou and Okalidou (2019) used Virtual Reality (VR) to help children with cochlear implants to be familiar with the device and to develop auditory skills based on Erber's model. In this game, children learn to recognize animal sounds, discriminate sounds and understand simple orders. Particularly, eye tracking was the mechanism to interact with the game, in which the youngest children needed additional help. However, after the experiment, the authors concluded that neither eye tracking nor VR headset led to difficulties for individuals in the sample, which turned them into proper devices for this kind of training. Another proposal for hearing impairment was from Bouzid et al. (2016), who proposed the computer game MemoSign to teach sign language. This game is based on the Memory Match Game, which includes a 3D human character who reproduces signs to facilitate the learning process for users. In this experiment, nine deaf users reported good experiences towards the game and found it useful.

7. Good practices of using digital tools in the educational process of pupils with disabilities

Positive gamification practices for students with different types of disabilities (visual impaired, hearing impaired, dyslexia and intellectual disability)

https://www.telethon.it/cosa-facciamo/ricerca/malattie-studiate/sordita-ereditaria
https://www.leonardoausili.com/approfondimenti/a/ipoacusia-neurosensoriale-e-caa-nuovi-strumenti-e-strategie-189.html
http://www2.erickson.it/sostegnosuperiori/pdf/PDF_materiali/Il%20computer%20di%20sostegno.pdf
http://eprints.uklo.edu.mk/2337/1/AIIT2019_ProceedingsFinal_Web%20Content%20Accessibility%20for%20People%20with.pdf
https://www.kentalis.nl/wetenschappelijk-onderzoek/gamification-het-onderwijs-aan-dove-en-slechthorende-leerlingen
https://gamesolutionslab.com/2018/06/22/spelenderwijs-naar-next-level-in-de-zorg/
https://kenniseventegg.nl
https://www.sunrisemedical.nl/blog/barrieres-doorbreken-met-virtual-reality-voor-mensen-met-een-beperking

https://www.e-learningwijzer.nl/wat-is-gamification/
https://www.jamzone.nl/stressjam
https://www.emerald.com/insight/content/doi/10.1108/IJILT-06-2018-0061/full/html
http://specialedtech.net/2015/05/04/mathtech-gamification-for-special-education/

Generators for activities to be prepared for the disabled:

Triminos (http://bit.ly/2Q8tbCv), Popplet (https://apple.co/37iuhRJ), Timeline (http://bit.ly/2ZuEJ4w), Google Art&Culture (http://bit.ly/2Q5Qk8u),

Games promoting and practising knowledge about (mostly) Polish and (some) world history:

Dzieje.pl, "Historia Polski. Władcy i wydarzenia 960–1795„"Historia polska", „Zamki polskie", „Polska inspiruje", " Historia. Szkoła Podstawowa", „Quiz Historyczny", "Znani Ludzie – Quiz historyczny", "World History", „World History Atlas", „Hist.ly", „Today in history"

Applications for smartphone users with disabilities: ParrotOne, Seeing Assistant Home, HearUS, Aipoly Vision, Bee My Eyes, Things I Mean

8. DIRECT GAP ASSESSMENT RESEARCH (FIELD RESEARCH)

Methodology

A focus group is a research method that brings together a small group of people to answer questions in a moderated setting. The group is chosen due to predefined demographic traits, and the questions are designed to shed light on a topic of interest.[5]

Focus groups are a type of qualitative research. Observations of the group's dynamic, their answers to focus group questions, and even their body language can guide future research on consumer decisions, products and services, or controversial topics.[6]

5 https://www.scribbr.com/methodology/focus-group/
6 https://www.scribbr.com/methodology/focus-group/

Focus groups are primarily considered a confirmatory research technique. In other words, their discussion-heavy setting is most useful for confirming or refuting preexisting beliefs. For this reason, they are great for conducting explanatory research, where you explore why something occurs when limited information is available.

A focus group may be a good choice for you if:

- You're interested in real-time, unfiltered responses on a given topic or in the dynamics of a discussion between participants
- Your questions are rooted in feelings or perceptions, and cannot easily be answered with "yes" or "no"
- You're confident that a relatively small number of responses will answer your question
- You're seeking directional information that will help you uncover new questions or future research ideas.[7]

Focus groups made within the project result 1

With whom?

During this part od reserch 1 focus group with history teachers and special educators was made by each partner coutry. There was a document (protocol for focus groups) that each partners follow during the focus group. Focus groups were made online via platform zoom. Each host organization respected ethical standard (given in this document as an anex) during the focus groups: consent. Main finding for all focus groups were taken in general.

How many? At least 10 participants from each country were present to focus groups.

Where? In each partner country partner in the project.

Main findings from the focus groups

Do you think that gamification is effective in teaching history students with disabilities?

Most of the participants in the focus group think that gamification is a good and effective approach to teach history to students with disabilities. The history teachers also think that the same approach can be adopted effectively and successfully in an inclusive learning environment.

7 https://www.scribbr.com/methodology/focus-group/

How can gamification be used in history education of students with disabilities?

Most of the teachers participating in the focus groups in different partner countries think that gamification is a useful tool not only in cases of disability but also with able individuals. Of course, all activities must be planned and calibrated on the basis of the learners' cognitive abilities and the goals that they want to achieve with that activity. In their opinion all tools that are used in gamification need to be adapted on the needs and possibilities of the students with different kinds of disabilities.

The gamification activities can be used in teaching history to all students and not just to those with special needs. The method must imply systematic observation and consequently the personalization and individualization of the learning paths. Generally, it can be used in the activation phase, during the verification of prerequisites, in the enhancement and study phase.

Games, either digital or not, develop pupils' skills, stimulate didactic curiosity and history learning while playing, aim at involving and motivating students, integrate other approaches, help reworking topics and giving them new meaning. They are also useful to memorize the chronology and setting of historical events.

They can be used through interactive activities that attract and motivate pupils; to realize the historical scenario with the pupils themselves as protagonists; by creating maps to fill in and rewarding every single correct answer; to make the pupils known about great men, their lives and the most important events of the past (storytelling, role playing, game-based learning, examples suitable for these objectives).

Games allow children to represent and understand little accessible realities such as the one expressed by the story; thanks to the powerful ability imagination and acting the "as if" allowed by the game, children are able to interpret the surrounding world.

Board games on historical themes or role-playing games involve the class group. The practice of playing games and of storytelling can be an effective support to teaching, because they stimulate interest in history in such a way as to transform children from passive storers of notions into active protagonists of their own intellectual learning.

Gamification applied to teaching history to pupils with disabilities could be used, for example, by transforming the concepts to be analyzed in games with points to accumulate, levels to be achieved, rewards or gifts to be obtained in which pupils play but at the same time learn the subject

Using the practices of gamification and storytelling can be an effective support to teaching and a useful strategy to involve children in learning. two possible different experiences based on this type of approach: a gamification laboratory and an educational video game (serious game). In both cases, interest in history is stimulated through game and identification; in doing so, children are transformed from passive storers of notions into active protagonists of their learning.

List some examples of use of gamification in history classes for students with disabilities

Some teachers have not experimented gamification in their classes nor with disabled students. They are searching for any opportunity to try and experiment with gamification with their students. Some others have a certain experience in the use of gamification; here are their comments and suggestions:

- Involving the class group in a role play also through a performance (drama)
- Creating maps related to a battle.
- Combination game-study image-study allows the disabled student to better memorize concepts.
- Storytelling.
- Team games and group work.
- Dates to be guessed.
- Using flashcards to memorize dates and events.
- Role-playing: the disabled student plays the role of a historical character which allows him to relive their life and enterprises. With game-learning the pupil becomes the protagonist of the historical contents that he is studying. Making the pupil the historical character in question, creating the historical scenario of the period with other characters played by his classmates. In this way, the memory and understanding of the pupil with disabilities is strengthened. To make everything even more interesting, prizes or points should be introduced just like a game.
- The Cold War, a complicated set of interrelated events, in a complex mechanism aimed at contention, by two superpowers. By means of some game design techniques it is possible to transform this process into a system of rules and scores. Through a game between two players, you can simulate the war between the Soviet Union and the United States.
- The online platform called 'Wordwall' where you can find games on different subjects, levels and types, created by colleagues from all over the world. It is also possible, in the demo version, to create games (but in limited numbers) for free. Then, there is the classic but timeless kahoot.

On ‘kidpass’ you can find the description of history applications for children; in any case, the web is full of ideas and information to select.

List some difficulties in using gamification in history education for students with disabilities

Very few teachers said that they haven’t experienced any difficulties or almost none when using games. Among the difficulties experienced or the potential difficulties shared and discussed in the focus group during the meeting:

- Lack of interaction with the class group; disabled students tend to isolate themselves. Furthermore, emotions play an important role in pupils with disabilities.
- The difficulties can be different depending on the disability, for example remembering dates and space-time orientation.
- Memorizing dates, making connections between facts; sequencing the ‘before’ and ‘after’.
- Some historical events could not be analyzed.
- Keep concentration and attention alive from beginning to end of the activity.
- Difficulties in the creation of the texts.
- Associating years and centuries, using Roman numbers, placing events in time and space.
- When the disabled students have difficulty concentrating, the screen helps them to stay better focused on the task. He has fine motor difficulties and using the touch keyboard to write is easier than using the pen but this is absolutely subjective and not generalizable.
- The lack of integration between multimedia and school culture. For example, some disadvantages of introducing gamification into classrooms is that gamification occurs primarily in an online environment via electronic devices. Some teachers believe that encouraging the use of screens and e-devices can lead to addiction. Consequently, the lack of information in this regard, an attitude of mistrust, barriers of any kind that can hinder this strategy.
- Although gamification helps improve a whole range of skills very well, there are others such as oral expression which are very difficult to develop with this method. On the other hand, the possibility that students get distracted from the game and do not learn is very strong, with the consequent loss of time-productivity.

- The difficulties depend on the people and the tools. In the teaching laboratory we have obsolete computers and these cannot be transported from the laboratory to the classroom and vice versa, so it would be nice to have updated laptops or tables for our pupils.
- Another drawback is the high cost of the implementation of gamification with quality criteria. The production of audiovisual educational materials, although it is more and more common, is still relatively expensive. Furthermore, the centers need to renew and update the educational materials and tools they already possess.

What are the elements of a well-designed learning game in order to meet the needs of the disabled students?

Since using educational games in learning contexts should promote the motivation, participation and interaction of the students with disabilities and also help maintain their attention focused while promoting the development of self-esteem, well designed learning games should be:

- aligned with the pupils' needs and mental age, with their cognitive and physical needs;
- engaging, intuitive, reliable, quick, simple to play and rewarding;
- captivating;
- extremely light in the presentation and structured in a way that puts everyone on the same level so that to arouse the collective interest of the class group and of the student with disabilities and be inclusive;
- a fun game where you can make mistakes without having any repercussions on reality;
- a combination of fun and learning;
- a game with prizes or points;
- the didactic game must arouse curiosity, it must be interesting, it must keep the attention alive and it must be well studied in all its details;
- It must be a game that also acts on the player's motivation through the adoption of certain game mechanics such as: game levels, challenges, rewards and points.

Can you provide information regarding the impact and benefits of using gamification in history classes with students with disabilities?

The educational projects are based on the belief that some typical characteristics of gamification, such as the creation of a serene and stimulating environment, the motivation in facing the activity, the opportunity to re-elaborate meanings, the

freedom to make mistakes and try again and the possibility of active involvement, can be functional to the study of history, making it more captivating and intellectually stimulating. Certainly games make class activities attractive, facilitate the approach making simple what may seem otherwise difficult and make it easier to memorize information, especially in students whose visual memory is more developed. A playful context can allow even the most fragile children, who normally do not intervene in the classroom out of fear or because obscured by more exuberant subjects, to interact and actively participate. Using games as a resource to support the study of History will therefore transform the child from a passive receiver of information to an active producer of knowledge as the protagonist of the learning process.

Gamification is an inclusive activity, precisely because even if designed for students with disabilities, it can and should be offered without any difficulty and particular adaptation to the whole class. The impact is very positive and the benefits are appreciable. The principle behind gamification is very simple, kids have fun and learn easily. All pupils, disabled and not, are inclined to get involved in the same way; they improve their cognitive skills and creativity and develop problem-solving skills; they get involved with other peers and, driven by the motivation to succeed in the task, they are encouraged to participate and test their abilities.

Can you provide any information (examples) which content (lessons) from history subject should be gamified?

Of course, this question can be answered adequately only if we know what is the starting point, what is the goal of the activity, who the activity is for. Generally speaking, some examples may be:

- habits and customs of some peoples (prehistory, Romans, Greeks, etc.);
- social studies topics like coexistence and integration in modern societies;
- interactive stories on the Resistance and liberation from nazi-fascism, impersonating dialogues between important historical figures, for example the meeting between Garibaldi and King Vittorio Emanuele II in Teano;
- the most complex and difficult to understand contents should be gamified. Depending on the disability it could be extended to the whole discipline;
- Historical events in particular the contemporary ones, even though all periods of history deserve attention from students;
- Constitutions, sustainable development, active citizenship, digital citizenship (Agenda 2030). Games for social studies using the Game Based Learning (GBL) methodology, which involves learning through gamification can be used as an innovative tool to achieve educational goals.

The game applied to teaching allows students to learn topics in a more engaging way, promotes critical and computational thinking and promotes collaboration in the class group;

- the life of the great leaders and their enterprises. The most important wars of the past. Inventions and discoveries;
- wars with the various stages;
- dates-events; cause-effect relationships; orientation on the map.

How technology (gamification) helps in the education of students with disabilities?

Nowadays we are lucky enough we can combine gamification with the use of new technologies, which represents an important alternative but also an effective support to the traditional lesson.

Integrating playful elements into teaching is a good idea for several reasons: teachers are stimulated by a new way of teaching, students become more involved in their learning and content, skills and competences grow naturally. And then you know: if you have fun, you learn more. The integration of new technologies in teaching can facilitate a more creative and more personalized path of appropriation of knowledge by the pupil making it more stimulating and engaging in a playful way.

New technologies, if used well, can facilitate the teaching-learning process, whose basic principles are identical for the gifted and the disabled. New technologies are a useful support to teaching because through intelligent software the pupils are guided in the learning process. New technologies and gamification develop motivation and inclusion. They stimulate, increase curiosity, favor sociality, sharing and collaboration, both between pupils and teachers. They act as facilitators making simple what is complex. They can improve creativity and develop problem-solving skills; they can make a narrative experience live in a different way than what you can do with reading or watching a movie. Gamification can help disabled students improve concentration and memory. They can also be a good support for the students to overcome some difficulties.

Additional questions asked and discussed during the meeting
Can you suggest some examples of gamification you have adopted in your classes (Pls provide the name/title of activity/app or link)

- Kahoot
- Quizizz
- Socrative
- Wordwall
- Kidpass

https://www.agendadigitale.eu/scuola-digitale/gamification/
https://www.digitalteacher.it/gamification-a-scuola-i-migliori-software-per-una-didattica-game-based-learning/

- Call of Duty, a videogame set during WWII, suitable for high school students.
- Team games
- Role plays

Do you think that gamification can be the sufficient for the successful and effective teaching of a subject or of single topics of a subject?

Most of the teachers participating in the focus groups in diffrent partner coutries think that gamification can be successful and effective if integrated with other approaches and strategies.

9. Third Direct Gap Assessment research (curriculum analysis)

Protocol for curriculum analysis

Methodology

A research protocol is a document that outlines the planning of your study. The plan must be designed to answer the research question and it must also provide a detailed description.

The written protocol: • forces the investigators to clarify their thoughts and to think about all aspects of the study; • is a necessary guide if a team (not a single investigator) is working on the research; • is essential if the study involves research on human subjects or is on experimental animals, in order to get the institution's ethical approval; • is an essential component of a research proposal submitted for funding.

Main findings of field research in each country

9.1 Italy

1. In which grade in primary education the students in your country are learning history subject? In Italy, pupils start studying History subject since their first grade (primary school)
2. If there are special schools in your country, write for what kind of disabilities, and if they have history subject (in which grade)? In Italy there are special schools for the deaf and dumb and blind. They study History subject starting from their first grade, like all the other pupils attending regular schools, but with tools adapted to their disabilities and needs.
3. If there are special schools in your country, explain are they using different curriculums for different kind of disabilities for history subject? In the Italian special schools there are no different curricula for History subject, because these schools are not attended by pupils with severe cognitive disabilities.
4. Describe the main learning outcomes for the curriculums in each grade in mainstream and special schools, make comparations? Ex. Descrivi i principali risultati di apprendimento previsti nei curricoli di ogni ordine di scuola delle scuole normali e di quelle speciali.

Mainstream schools	Special school for visual impaired	Special school for hearing impairment	Special School for dyslexia students	Special school for students with intellectual disabilities
Grade 6	The same ministerial curricula are adopted as in regular state schools, but with the help of the Braille System	The same ministerial curricula are adopted as in regular state schools, but with the help of the LIS System	There are no special schools for dyslexia students. The same ministerial curricula are adopted but the students are requested to meet the minimum objectives. Compensatory and dispensation systems are adopted according to the students' real needs	Students with intellectual disabilities do not attend special schools. They are included in regular state schools, which adopt the ministerial and / or differentiated programs provided at national level. The students are requested to meet the minimum objectives and dispensation or compensatory systems are adopted according to the specific students' needs.

5. If there are not special schools in your country, describe if there are any notes which determinate the adaptations of the curricula content for different kind of disabilities students? For some pathologies such as dyslexics and dysgraphics and mild and medium cognitive disabilities there are no special schools; the students attend regular schools and the same ministerial curricula are adopted. When planning the school syllabus, the teachers plan a special syllabus for each student with minimum objectives to be met by each student and compensatory/dispensation actions based on the student's specific needs. Only for some disabilities (visual and hearing) there are special schools and suitable dispensation tools.
6. Are there any methods described in the curricula which allowed the use of gamification in teaching history (ex. test, quiz, exam, a project)? The strategies and teaching methods described in the curricula almost always provide for the use of tools like audio-visual aids such as computers, tablets, etc. for gamification activities; most of these activities are often suggested in the textbooks adopted and tools like the GSuite tools and virtual classrooms can be used to carry out them.

9.2 North Macedonia

1. In which grade in primary education the students in your country are learning history subject? In N. Macedonia, primari education starts from 6 years (I grade) and finising with 14 years (IX grade). Students start to learh history subjets in VI grade with age 12.
2. If there are special schools in your country, write for what kind of disabilities, and if they have history subject (in which grade)? In N. Macedonia there are 4 primary schools for inteletual disability and autism, 1 primary school for hearing inpaiment, 1 schools (primary and secondary) for visual impaired, 1 secondary school for hearing impairment and 2 secondary schools for intelectual disabilities.Students in special schools also learn history subject from VI grade.

3. If there are special schools in your country, explain are they using different curriculums for different kind of disabilities for history subject?

In special schools in N. Macedonia there are addapted curiculums for tudents with disabilities.
Ex. For students with intelectual disabilities content from the curicula used in the regular schools is abbreviated, this means that the content is simplified, abstract terms are left out of it, the content is based on simple content, easy to remember and understand.
Adapted curriculum is also used for students with visual impairments, but in this case the content of the curriculum is not shortened, but different methods of work are recommended (such as the use of Braille, audio and tactile materials).

4. Describe the main learning outcomes for the curriculums in each grade in mainstream and special schools, make comparations?
Ex.

Mainstream schools	Special school for visual impaired	Special school for hearing impairment	Special School for dyslexia students	Special school for students with intellectual disabilities
	The same maintream schools curricula are adopted as in regular state schools,but different methods of work are recommended (such as the use of Braille, audio and tactile materials).	The same mainstream schools curricula are adopted as in regular state schools, but with the help of the LIS System	The same mainstream schools curricula.	Adapted curicula, content from the curicula used in the regular schools is abbreviated, this means that the content is simplified, abstract terms are left out of it, the content is based on simple content, easy to remember and understand.

5. If there are not special schools in your country, describe if there are any notes which determinate the adaptations of the curricula content for different kind of disabilities students? No data
6. Are there any methods described in the curricula which allowed the use of gamification in teaching history (ex. test, quiz, exam, a project)? No data

9.3 Poland

1. In which grade in primary education the students in your country are learning history subject? IV- VIII
2. If there are special schools in your country, write for students with what kind of disabilities, and whether they provide history subject (if so, in which grade)? Yes - there are. They include people: • disabled (intellectually, deaf and hard of hearing, blind and visually impaired, with motor disabilities [including aphasia], autism [including Asperger's syndrome] with multiple disabilities) • socially maladjusted • at risk of social maladjustment. Yes - they have history lessons since 4th grade
3. If there are special schools in your country, explain if they have a different curriculum of history lessons for students with different disabilities? According to current legislation, there are special schools in Poland that follow the same curriculum as mainstream and integrated schools. The curriculum is the same, but the teacher has a choice which takes into account the student's condition.

4. Describe the main learning outcomes for each grade's curriculum in mainstream and special schools, and make comparison. According to the Regulation of the Ministry of Education of 24 February 2017 and the Regulation of 16 March 2022, the core curriculum and outcomes are the same for all types of schools. The teacher has the opportunity to make choices that take into account the student's condition. https://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU20220000609/O/D20220609.pdf https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20170000356
5. If there are not special schools in your country, describe if there are any notes which determine the adaptations of the curricula content for students with different kinds of disabilities? In Poland there are special schools. The teacher has options that take into account the student's condition.
6. Are there any methods described in the curricula which allow the use of gamification in teaching history (ex. test, quiz, exam, a project)? " The same methods of teaching and learning are used in special schools as in mainstream schools, but particular emphasis is placed on the individualisation of work with each student. The teacher has the right to choose specific methods, forms of work and didactic resources, but must take into account the specific functioning of the student resulting from his/her disability, social maladjustment or threat of social maladjustment. "*.

9.4 Romania

In which grade in primary education the students in your country are learning history subject? In Romania, according to the national curriculum, children begin to study History in primary school, in the 4th grade. Through History, it is intended to familiarize students with topics related to the recent or more distant past of their hometown, home country- Romania and Europe, using age-appropriate means. Even in Special Education dedicated to students with mild and moderate intellectual disabilities, History is studied starting with the 4th grade .

If there are special schools in your country, write for what kind of disabilities, and if they have history subject (in which grade)?

In Romania, at the same time, there are mainstream schools and special schools. Special and specially integrated education is an integral part of the Romanian national education system and offers to all children / pupils / young people educational programs adapted to the stage of disability and their developmental needs. The system is organized at all levels of pre-university education, depending on the type and level of disability, like: intellectual , hearing, visual, locomotor, associated. Inclusive education has been adopted in Romania since the 1990s by respecting diversity, initiating and practicing access to and participation in education and social life for all categories of children. Today, more than half of students with disabilities are enrolled in mainstream education. Special education legislation has been designed to address a wide and varied range of special situations.

Special education units for students with sensory impairments, follow the national school curriculum. These units include only the structure and form of organization according to the special education system, and in content, school preparation and specialization are similar to mainstream schooling. Special technological high schools, high school classes and special post-secondary classes are organized according to the model of mainstream school (content, profiles, specializations, purposes, objectives and / or competencies). Specific to these units remain the strategies, methods and types of teaching / learning.
Upon graduation, students in these special education units take national exams (tests, baccalaureate or graduation exam) in the same way as all graduates in mainstream education.

For them, are mentioned facilities and adaptations in the methodologies for organizing and conducting the exams. For each student with severe, profound or associated deficiencies, is developed a personalized educational plan with specific objectives for their needs and possibilities of psycho-individual development. Students with special educational needs also benefit from adaptationsof examination procedures in the case of current assessments. The Special Schools for the Visually and Hearing Impairment follows the national curriculum . Which means that students with sensory impairments start to learn History starting with the 4th grade, from primary school.

If there are special schools in your country, explain are they using different curriculums for different kind of disabilities for history subject?

The schools for the sensory impaired students (schools for the visually and hearing impaired) follow the mainstream curricula . This means that visually impaired students starts to learn history from the 4th grade / in primary school. And than, in the secondary school, the History classes are adapted according to the psycho-individual needs of the students.

In special schools for students with severe intellectual disabilities, history is not taught, they benefit from personalized intervention plans, created according to their psycho-affective profile.

In the special schools for students with mild and moderate intellectual disabilities there is a Curriculum dedicated to Hhistory, for the 4th grade, and another for the History Curriculum, for the Gymnasium classes. These documents were updated in 2021.

Describe the main learning outcomes for the curriculums in each grade in mainstream and special schools, make comparations?
Ex.

Mainstream schools	Special school for visual impaired	Special school for hearing impairment	Special School for dyslexia students	Special school for students with intellectual disabilities
Grade 4: At the end of the 4th grade the student will be able to: • sort objects by "older" / "newer" criteria. • to order personal events / historical events. • to tell aspects of the connections	Special schools for the visually impaired students have the same curriculum as the national education. The teaching/ learning . evaluation methods are adapted according to	Special schools for the visually impaired students have the same curriculum as the national education The teaching/ learning. evaluation methods are adapted according to	There are no special schools dedicated exclusively to these disabilities. Most of the students with speech disorders are integrated into mainstream education.	Children with severe disabilities do not study history. Students with mild and moderate disabilities benefit from the adapted program. For Grade IV, the specific results are: -Chronological order in time and space of some family events, of the facts presented

between the geographical environment and people's lives • to recognize and use information from a historical source. • to select sources necessary for the presentation of events / personalities, • use historical terms in various situations, • to appreciate the role of people in the unfolding of events. -to formulate points of view regarding events / facts / personalities, • to compare historical facts, highlighting the changes that have taken place, • to express personal opinions in appreciation of past and present facts	the specifics of the students.	the specifics of the students.		in a learning situation • Location of historical events in space • Recognizing people's concern by relating to time and space • Identifying historical sources • Analysis of sources to identify as diverse information about the past as possible • Recognition of similarities and differences between people / groups of people • Ask questions about our great heroes • Recognizing the similarities and differences between oneself and the other, between individuals and groups

				• Manifestation of an open attitude in the case of situations that involve communication
For secondary education, the aims of the History subject relate to the educational ideal, as it is defined in the Educational Law. In secondary school History assumes: • the development of elements related to the development of critical thinking; • developing skills for working with historical and information sources and placing them in different context; • the ability to analyze and evaluate the motivations of human action, to detect the				Curriculum for the subject in Special Education, in Gymnasium – for Mild and moderate intellectual disabilities. Emphasis is placed on familiarization with the description and interpretation of historical facts and processes starting from historical sources and less on working with abstract elements (historical facts become accessible through specific and concrete historical sources). The main results of the History are:

relationship between human action and the values of a democratic society; • the formation of intellectual mechanisms to prevent any form of nationalism, the formation of stereotypes and xenophobia; • to stimulate the assumption of multiculturalism and multiper-spectivity; • to be a real support for the other disciplines and to take over elements related to the analysis of the institutions, to the evolution of the political systems, to the wider issue of democratic citi-zenship.				• Ordering on chronological criteria the historical facts / processors. • Identifying the temporal differences between historical events and processes • Location in time and space of historical facts and / or processes • Use of specialized terms in describing a historical event / process •Relating an event, historical process, using information from historical sources. • Assumption of roles in working groups •Description of the role of some personalities in the unfolding of some historical events

Are there any methods described in the curricula which allowed the use of gamification in teaching history (ex. test, quiz, exam, a project)?

In Romanian national education, the teaching process focuses on the student, as a subject of teaching -educational activity, which involves training the steps that characterize lifelong learning, such as:

• the use of didactic strategies that emphasize the progressive construction of knowledge;

• flexibility of approaches and differentiated path; coherence , inter- and transdisciplinary;

• the use of active methods that can contribute to the development of students' communication skills, necessary in real situations, which stimulate their creative potential and ability to adapt and which develop positive attitudes towards themselves and others;

• practicing teamwork, cooperation and / or competition and developing the ability to investigate and enhance their own experience;

• carrying out activities that stimulate curiosity for the study of History.

Academic approaches based on learning through discovery, simulation, study of historical sources, debate, role play are recommended, which have the advantage of allowing the alternation of forms of activity and which support the correlation of previous learning experiences with new learnings.
Regarding the Evaluation, it is recommended to use mainly the continuous, formative evaluation. Along with the classic forms and tools of evaluation, it is necessary to use complementary forms and tools, such as: project, portfolio, self-evaluation, evaluation in pairs, systematic observation of student activity and behavior.

In the special education, for the Design of the pedagogical activity, emphasis is placed on the Personalized Reading of the school curriculum, which aims to identify the concrete ways of applying the school curriculum to a specific educational context. The developed design documents (calendar planning and learning unit projects) provide the teacher with answers to the following questions:.

"What am I going to do?" (Competences selected from the examples provided by the curriculum are identified in this way or can be proposed by each teacher).

• What content do we choose? (select, complete, and tailored content is organized).

• What am I going to do? (resources are analyzed, for example, material resources, including ICT /digital resources, time, forms of organizing the class of students).

• How much has been achieved? (Assessment tools are established to highlight the progress made by each student in relation to his / her own person during the acquisition of the competencies provided by the program in an academic year. The use of ICT assessment tools and assistive technologies is recommended and encouraged).

9.5 Turkey

1. In which grade in primary education the students in your country are learning history subject?

• History teaching gives students an understanding of the historical research process and the nature of historical knowledge. History teaching is expected to help students understand the present, to arouse an interest in the past in them, to contribute to the development of a sense of national identity and to prepare students for citizenship. The main goal of teaching history today is to teach historical thinking skills and concepts in a historical context, rather than memorizing facts, and students are informed of the main features of the discipline. The historical method applied in this process includes historical thinking and, in particular, reflects the analysis of sources that provide practice for a way of thinking similar to the one experienced by the historian. With the right history teaching, students can be enabled to question the source and reliability of their information. The aim of history teaching is not only to give what happened in the past in the form of repetition, but also to give young people the knowledge of history, as well as the ability to critically, analytically think and research, as well as the ability to consider and evaluate the past from different windows

The practice of history involves reworking, analyzing and interpreting traces and accounts of the past in order to create narratives that will have meaning in certain contemporary audiences. Since the 2012-2013 academic year in Turkey 4+4+4 a 12-year compulsory education system is being implemented. In accordance with this educational system, students take 4th in the life science course, which is prepared on the basis of a collective teaching approach in the first three years of primary school. in the classroom, they study history in the social studies course. Teaching history subjects within the scope of these courses allows students to satisfy their curiosity about the cultural trajectories that surround them, to gain a certain knowledge about the past and to play a responsible role in society by getting to know the world better. The fact that history teaching gives students an awareness of the difference of civilizations; It helps them to question the ideas learned, to understand the concept of relativism, to gain the ability to think historically and critically, and to reach the universal by recognizing different cultures.

2. If there are special schools in your country, write for what kind of disabilities, and if they have history subject (in which grade)?

For individuals who need special education in the drop-secondary institutions, hearing, vision, physical, mental and mild secondary education students with disabilities at the level of their education primarily to the inclusion/integration, although it is essential for you to continue through, hearing, and individuals with orthopedic disabilities by the ministry for the day and/or boarding schools, special education and vocational education and training services to these individuals also were opened. Who have completed their primary education, general, students with mild mental disabilities who could no longer continue vocational and Technical Secondary Education programs, students with mild autism, and students with vision disabilities by the ministry in order to gain knowledge and skills for the profession and business day and night, special education, vocational training centers (schools) education upper secondary level in these individuals by opening the four-year compulsory to continue their education is provided. Special education vocational schools provide vocational education in 18 professional fields and 27 branches to students with special education needs.

3. If there are special schools in your country, explain are they using different curriculums for different kind of disabilities for history subject?

The content of courses and courses varies according to the disabilities of our students studying in special education schools and the levels of their disabilities. The history courses given are also shaped accordingly.

Describe the main learning outcomes for the curriculums in each grade in mainstream and special schools, make comparations?
Ex.

Mainstream schools	Special school for visual impaired	Special school for hearing impairment	Special School for dyslexia students	Special school for students with intellectual disabilities
Grade 8	Comprehend the science of history	Comprehend the science of history	Comprehend the science of history	Comprehend the science of history
Grade 9	Comprehend the historical ages	Comprehend the historical ages	Comprehend the historical ages	Comprehend the historical ages
Grade 10	Know and distinguish the main Turkish states	Know and distinguish the main Turkish states	Know and distinguish the main Turkish states	Know and distinguish the main Turkish states
Grade 11	Knows the principles of the Turkish revolution and Atatürk	Knows the principles of the Turkish revolution and Atatürk	Knows the principles of the Turkish revolution and Atatürk	Knows the principles of the Turkish revolution and Atatürk

5. If there are not special schools in your country, describe if there are any notes which determinate the adaptations of the curricula content for different kind of disabilities students?

6. Are there any methods described in the curricula which allowed the use of gamification in teaching history (ex. test, quiz, exam, a project)?

Thanks to the smart board located in special education schools, students have access to internet-based education. Teachers can use smart boards to present materials for students' needs to them in the lessons. Exams, projects, readings, videos included in the curriculum are open for submission through gamification. Subjects that are processed according to the details of the subjects in the curriculum are also open to be given in different ways.

9.5 Netherlands

1. In which grade in primary education the students in your country are learning history subject?

Teachers can start with preliminary historical notions right from Group 1 (pupils of four years of age), but usually history as such is teached from Group 3 on (pupils of six years of age).

2. If there are special schools in your country, write for what kind of disabilities, and if they have history subject (in which grade)?

Yes, there are soecial schools in the Netherlands for children with impairments who cannot be incuded in regular primary education. These school are regarding disciplines teached not different from regular primary education schools.

3. If there are special schools in your country, explain are they using different curriculums for different kind of disabilities for history subject?

See under 2. – There are no different curricula for historical subjects in special schools for children with impairments compared to the regular schools for primary education.

4. Describe the main learning outcomes for the curriculums in each grade in mainstream and special schools, make comparations?

Ex.

Mainstream schools	Special school for visual impaired	Special school for hearing impairment	Special School for dyslexia students	Special school for students with intellectual disabilities
Group 8 See below	Same learning outcomes as mainstream schools	Same learning outcomes as mainstream schools	Same learning outcomes as mainstream schools	In principle the same learning outcomes as mainstream schools, but practically adapted to the intellectual abilities of the pupil concerned

Mainstream schools

Group 8

At present there are, since 2006, 58 core aims. Preparations have been made now to develop a renewal of the core aims. The core aims for History in Primary Education are:

Core aim nr. 51.

Students learn to use simple history sources as at present in the national heritage. They also learn to use time- and period indications.

Nr 52.

The students learn about the characteristics of the following periods: Hunters and Farmers; Greek and Romans; Monks and Knights; Cities and States; Discoverers and Reformers;
Regents and Kings; Wigs and Revolutions; Citizens and Steammachines; Worldwars and Holocaust; Television and Computer. References and examples are delivered by the Dutch Canon.

Nr 53.

The students learn about the persons and events of Dutch historical importance, and are able to connect them exemplatorically to the world history.

5. If there are not special schools in your country, describe if there are any notes which determinate the adaptations of the curricula content for different kind of disabilities students?

There are special schools in the Netherlands for children with impairments who cannot be included in regular primary education.

6. Are there any methods described in the curricula which allowed the use of gamification in teaching history (ex. test, quiz, exam, a project)?

There are not explicitly any methods as such described in the curricula that allow the use of gamification in teaching history. Gamification is neither forbidden in teaching history as long as the core aims are reached. Often teachers use already some gamification in teaching.

Final conclusions:

From the research it is evident that in all partner countries the process of inclusion is developed with a different approach and with different dynamics and speed. The countries in transition, Northern Macedonia and Romania, can be mentioned here, and Turkey still does not have a strictly defined inclusion system and is still trying to establish full inclusion. In contrast, Italy, the Netherlands and Poland are more advanced in this regard, both in terms of legislation and examples from practice. Regarding the study of the subject history, it can be concluded that in almost all partner countries the way and time of study of this subject is similar.

Regarding the application of gamification in the educational process of people with disabilities, it can be concluded that in certain countries there is more work on the application of this method in the work, there are more game developt, applications, software, games created, etc.

When it comes to the application of gamification in the subject of history then we can say that there are no concrete examples and that the teachers with whom the focus group was realized believe that the application of gamification for the subject of history is important and useful.

Using the practices of gamification and storytelling can be an effective support to teaching and a useful strategy to involve children in learning. two possible different experiences based on this type of approach: a gamification laboratory and an educational video game (serious game). In both cases, interest in history is stimulated through game and identification; in doing so, children are transformed from passive storers of notions into active protagonists of their learning.

Some others have a certain experience in the use of gamification; here are their comments and suggestions:

- Involving the class group in a role play also through a performance (drama).
- Creating maps related to a battle.
- Combination game-study image-study allows the disabled student to better memorize concepts.
- Storytelling.
- Team games and group work.
- Dates to be guessed.
- using flashcards to memorize dates and events.
- Role-playing: the disabled student plays the role of a historical character which allows him to relive his life and enterprises. With game-learning the pupil becomes the protagonist of the historical contents that he is studying.

Making the pupil the historical character in question, creating the historical scenario of the period with other characters played by his classmates. In this way, the memory and understanding of the pupil with disabilities is strengthened. To make everything even more interesting, prizes or points should be introduced just like a game.

- The Cold War, a complicated set of interrelated events, in a complex mechanism aimed at contention, by two superpowers. By means of some game design techniques it is possible to transform this process into a system of rules and scores. Through a game between two players, you can simulate the war between the Soviet Union and the United States.

The online platform called 'Wordwall' where you can find games on different subjects, levels and types, created by colleagues from all over the world. It is also possible, in the demo version, to create games (but in limited numbers) for free. Then, there is the classic but timeless kahoot. On 'kidpass' you can find the description of history applications for children; in any case, the web is full of ideas and information to select.

Recomendations:

Countries that are still working to achieve and build quality inclusive education should follow the example of countries that are already successful and through practical examples proven in this field.

Regarding the application of gamification and the subject of history in the education of persons with disabilities, new tools should be created that will suit the age and the type of disability and will be adapted to the needs and capabilities of this target group.

Some of the existing gamification tools can be adapted and accessible to people with disabilities.

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Education of people with disabilities in Poland:

https://rampa.net.pl/edukacja-osob-z-niepelnosprawnosciami/

http://abc.lzinr.lublin.pl/edukacja/ksztalcenie-przedszkolne-i-szkolne

IT Education Center: https://cie.gov.pl/

Education of people with disabilities (Serafin Teresa): http://orka.sejm.gov.pl/wydbas.nsf/0/33550F47E661F69CC1257E7300368C7A/%24File/Serafin.pdf

Statistics Poland: https://stat.gov.pl/

IT Education Center: https://cie.gov.pl/

www.sejm.gov.pl

www.senat.gov.pl

www.senat.edu.pl

www.gov.pl

www.prezydent.pl

https://bip.brpo.gov.pl/

https://brpd.gov.pl/

https://niepelnosprawni.gov.pl/

ANNEXES

ANEX 1

PROJECT RESULT 1
CREATION OF A METHODOLOGICAL FRAMEWORK

Research subject:

The research methodology will be developed with the purpose to gain relevant input by the respondents related to the gamification content with historical facts used in educational process for different categories of students with disabilities. This research will be oriented towards the gamification in history as a long-term activity process through which the capacity of the education as a whole, as well as the capacity of schools and specialized institutions is strengthened.

Research goal:

The research goal is focuses on gamification, considers the needs of all learners, including those who identify as disabled, and raises important inquiries about equity and access to technological instructional materials.
The research goal is oriented towards gaining knowledge whether staff (history teachers and special needs teachers) in mainstream schools and special schools, are prepared to efficiently to insert new approach in teaching history especially with students with disabilities. The goal is also to discover what kind of historical content should be used for gamification, as well as what re the specifics needs in educational process for different kind of disabilities.

Type of research

Qualitative methodology
1. Protocol for desk-top research
2. Focus groups with students with history teachers and special educational teachers
3. Check list for curriculum analysis

1. PROTOCOL FOR DESK-TOP RESEARCH

DESK RESEARCH TEMPLATE
CONTEX A
AN ANALYSIS OF THE TARGET AUDIENCE - STUDENTS WITH IMPAIRED VISION, IMPAIRED HEARING, DYSLEXIA AND INTELLECTUAL DISABILITIES.

1. Definition of visual impairment (blind and partially sighted)	
2. Characteristic of persons with visual problems	
3. Special tools used in the educational process for the target group	
4. Special approaches in work with target group	

***Maybe each partner can take one category of persons with disabilities.**

CONTEX B
An analysis of the national context

Country	
Primary education of persons with disabilities	How the educational process of students with disabilities is manage for the country of the partner, inclusion in mainstream schools, special schools
Relevant statistics	Statistical data for the country of the partner, regarding disability population in primary education.
Legislation	A list with laws/council decisions on national/regional/local level, concerning disabled and education, their rights, accessible infrastructure, services, etc.

Case study	Positive gamification practices for students with different types of disabilities (visual impaired, hearing impaired, dyslexia and intellectual disability)

FOCUS GROUPS

With whom?	1. Focus group with history teachers and special educators (students with disabilities, their parents)
How many?	2. At least 10 participants from each country
Where?	3. In each partner country

PROTOCOL FOR FOCUS GROUP

FOCUS GROUPS DOCUMENT

*ANEX DOCUMENT (WILL BE ADDITIONALLY SEND):

- FOCUS GROUPS - ETHICAL STANDARDS
- ORGANIZING THE FOCUS GROUP (GENERAL RECOMMENDATIONS)

Project Partner

Description

Participants Involved

Dates

Location

Duration

Photos

Please send photos attached along with other supporting documents

FOCUS GROUP QUESTIONS

Do you think that gamification is effective in teaching history students with disabilities?

How can gamification be used in history education of students with disabilities?

List some examples of use gamification in history classes for students with disabilities!

List some difficulties in using gamification in history education for students with disabilities!

What are the elements of a well-designed learning game in order to meet the needs of the disabled students?

Can you provide informations regarding the impact and benefits of using gamification in history classes with students with disabilities?

Can you provide any information (examples) which content (lessons) from history subject should be gamified?

How technology (gamification) helps in the education of students with disabilities?

Contact Detailc

PROTOCOL FOR CURRICULUM ANALYSIS

1. In which grade in primary education the students in your country are learning history subject?
2. If there are special schools in your country, write for what kind of disabilities, and if they have history subject (in which grade)?
3. If there are special schools in your country, explain are they using different curriculums for different kind of disabilities for history subject?
4. Describe the main learning outcomes for the curriculums in each grade in mainstream and special schools, make comparations? Ex.

Mainstream schools	Special school for visual impaired	Special school for hearing impairment	Special School for dyslexia students	Special school for students with intellectual disabilities
Grade 6				
5. If there are not special schools in your country, describe if there are any notes which determinate the adaptations of the curricula content for different kind of disabilities students?				
6. Are there any methods described in the curricula which allowed the use of gamification in teaching history (ex. test, quiz, exam, a project)?				

Final step

Preparing of the final report based on the finding from each partner organizations, preparing short abstract (15-20 pages) and translation of the abstract in six languages (English, Macedonian, Dutch, Romanian, Italian and Turkish).

Written study in a form of a publication and publishing in peer-reviewed journals that will be useful to all relevant stakeholders interested in transferring and implementing these positive practices connected to gamification and disabilities.

Content of the final report:

1. Introduction of the project (A short introduction to the project and the need for producing the report (objectives)
2. Partner organizations
3. Description of project result 1
4. Executive summery
5. Primary Direct Gap Assessment research (desk research)
    a. Methodology (followed in each country)
    b. General information on the participating organizations
    c. Main findings of field research
    d. Conclusions and recommendations

6. Secondary Direct Gap Assessment research (focus groups)
    a. Methodology (followed in each country)
    b. General information on the participating organizations
    c. Main findings of field research
    d. Conclusions and recommendations
7. Third Direct Gap Assessment research (curriculum analysis)
    a. Methodology (followed in each country)
    b. General information on the participating organizations
    c. Main findings of field research
    d. Conclusions and recommendations
8. Main documental findings review
9. Concluding remarks
10. Bibliography
11. Annexes
    Annex 1. Focus groups documents
    Annex 2. Protocols for desk research and curriculum analyzes

FOCUS GROUPS - Ethical Standards

Focus group methodology generates distinct ethical challenges that do not correspond fully to those raised by one-to-one interviews.
Each host organization should respect three key issues during the focus groups: consent; confidentiality and anonymity; and risk of harm.

a) The principal challenge in obtaining consent lies in giving a clear account of what will take place in the group, owing to unpredictability of the discussion and interaction that will occur. As consent can be seen in terms of creating appropriate expectations in the participant, this may therefore be hard to achieve. Moreover, it is less straightforward for the participant to revoke consent than in one-to-one interviews.

b) Confidentiality and anonymity are potentially problematic because of the researcher's limited control over what participants may subsequently communicate outside the group. If the group discussion encourages over-disclosure by some participants, this problem becomes more acute.

c) Harm in a focus group may arise from the discussion of sensitive topics, and this may be amplified by the public nature of the discussion. A balance should be struck between avoiding or closing down potentially distressing discussion and silencing the voices of certain participants to whom such discussion may be important or beneficial. As a means of addressing the above issues, we outline some strategies that can be adopted in the consent process, in a preliminary briefing session, during moderation of the focus group, and in a subsequent debriefing, and suggest that these strategies can be employed synergistically so as to reinforce each other.

Other basic rules of ethical behavior during focus groups

1. Be respectful when speaking about participants. It can be tempting for moderators and observers to sit in the back room and pass judgment or make jokes about participants. Sometimes participants say unexpected or funny things, and sometimes observers hearing negative feedback about their product or idea may have an emotional reaction. Regardless of the reason, be aware of the tone of your discussion in the back room and during analysis and reporting—it is disrespectful to laugh at or make fun of the very people who are allowing you to conduct this research.

2. Avoid showing them how they're wrong. A simple way to learn about participants' awareness and knowledge of an issue or product is by asking participants if they know something. If you are going to do this, try not to immediately follow up with, "Well, actually, the real answer is . . ." Your participants aren't there to be quizzed or tested, and shouldn't be made to feel ignorant.

3. Don't create unnecessary tension in groups. Ensuring participants are comfortable enough to share their thoughts and opinions are one of the key roles of the moderator. Avoid creating tension and setting up any potential hierarchies within the group, particularly in the icebreaker and warm-up exercises—for example, be wary of starting off by asking a socioeconomically diverse group about their occupations or teenagers about their favorite band.

4. Don't try to sell them things. It can be easy to see your participants as a perfect set of customers or an ideal end user group for your product or service after all, you probably put a lot of effort in recruiting a group that exactly represents

your customers or stakeholders. But the purpose of the focus group is to hear what they have to say, not to market to them or sell them on your idea. Don't hand out product information and don't ask people if they want to sign up for anything, even after the group is over.'

5. Don't try to teach them things. Again, the purpose of the group is to learn from your participants. You can offer participants contact information or resources to use if they have questions after the group—especially important if you're discussing a sensitive topic or working with an at-risk population—but make sure that this is only providing support, not trying to change their opinions or behavior.

6. Protect their privacy in the community. Typically, focus groups are recruited so that participants in a group don't know each other. But depending on the subject or the market size, you could end up with friends, acquaintances, or even relatives in the same group. Be careful when asking people to reveal things that could affect them later. If there is sensitive information you'd like to collect, consider asking these questions in homework or using in-group questionnaires, so participants don't have to say it in front of the group.

7. Protect their privacy in final reporting. Your participants should have completed a release form prior to the focus group or interview, but that doesn't mean that they consented to having video clips or quotes put on YouTube or on a billboard. Video should be kept within the research team or the intended audience of a final report, unless identities are disguised. Similarly, personally identifiable information should be removed from quotes if there's any possibility it will be distributed past the immediate research audience for the materials.

8. And finally, end your groups on time. Your participants have taken time out of their day to come to an event and were given a scheduled ending time. It doesn't matter if things got started late, or if you didn't cover all the material, or if the group is still saying interesting things. People have babysitters to get home to and buses to catch: end the group when you told them you would.

Essentially, all of these behaviors boil down to respecting your participants. Focus group members, they are still offering up their time, effort, and experience, and qualitative research would not be possible without them. Make sure that your behavior goes beyond just meeting the legal requirements, and expresses that respect for what they are offering.