INCLUSIVE DIGITAL ENVIRONMENTS TO ENABLE HIGH-QUALITY EDUCATION FOR DISADVANTAGED AND DISABLED LEARNERS

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Social inclusion and common values: the contribution in the field of education and training

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INCLUDEME Policy Recommendation

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EXECUTIVE SUMMARY

The project *Inclusive Digital Environments to Enable High-Quality Education for Disadvantaged and Disabled Learners (INCLUDEME)* addresses core challenges associated with inclusive and accessible education and envisions technology-enriched interventions that target the specifics of disadvantaged and disabled learners that are directly enabled by teacher and stakeholder training initiatives to equip them with knowledge and skills.

The objective of this document is to present the INCLUDEME policy recommendation constructed based on the findings and lessons learnt during the project implementations, especially through the piloting of the INCLUDEME solution (WP6- Evaluation and Piloting) that aimed to evaluate the INCLUDEME Platform and all pilot-related operations, and to organise teacher and stakeholder training to maximise the outputs of the project. The information is based on the collection of case studies piloting among the Consortium TGs by using an online questionnaire completed by each partner.

I. INTRODUCTION

According to article 24 of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD)[1], signed and adopted by the European Union and all its Member States, and of its General Comment No. 4, State parties must ensure the realisation of the right of persons with disabilities to education through an inclusive education system at all levels, including pre-schools, primary, secondary and tertiary education, vocational training and lifelong learning, extracurricular and social activities, and for all students, including persons with disabilities.

The inclusion of disadvantaged students and of students with disabilities is a common, critical issue valid in all Member States of the EU. Social inclusion is one of the 11 priorities of the cohesion policy in 2014-2020, the thematic objective no. 9, "Promoting social inclusion, combating poverty and any form of discrimination", finding also the continuation of the investment in the following programmatic framework 2021-2027 in the 4th priority: a "*more social Europe, for the realization of the European pillar of social rights and supporting the quality of jobs, education, skills, social inclusion and equal access to the health system*", thus recognizing the importance of human capital, in the context of lower birth rates and continuous innovative technological developments.

The United Nations 2030 Agenda for Sustainable Development[2], built upon the Sustainable Development Goals (SDGs), aimed to address the multiple risks faced by disadvantaged individuals, including those with disabilities, and those with socioeconomic difficulties, in an effort to ensure equal opportunities in and access to education, justice, culture, sport and tourism, but also equal access to all health services. This Agenda highlighted the major role and potential that the spread and advancement of information and communications technology have in supporting the development of a world with equitable and universal access to quality education at all levels.

The path towards digital accessibility was strengthened through the Directive (EU) 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies, and subsequent updates, through which all public sector bodies in the EU were required to make their online websites and mobile apps accessible.

The Strategy for the Rights of Persons with Disabilities 2021-2030 stressed the importance of accessibility as an enabler of rights, autonomy and equality, stating that accessibility encompasses access not only to the built environments, but also to the virtual ones.

Open Educational Resources (OER)[3] aimed to provide access to high-quality educational materials that are free to use, customize, and share.

In line with these initiatives, the INCLUDEME project aimed to create an accessible and inclusive online learning environment in which teachers and students of all backgrounds and abilities can co-create gamified learning paths incorporating digital game-based learning as well as providing the means to access mainstream learning content for those that would otherwise be excluded.

The INCLUDEME Project has generated a set of good practices as summarised below:

GOOD PRACTICE 1: Customizable and reusable Digital Educational Assets to facilitate the construction of inclusive learning environments

Objectives of the good practice

[1] https://ec.europa.eu/social/main.jsp?catId=1138&langId=en
[2] https://sdgs.un.org/2030agenda
[3] https://www.oercommons.org/oer-101

- Support the creation of DEAs that can be easily and efficiently customized and reused for inclusive education activities, to improve access to education for disadvantaged and disabled learners regardless of their age, disadvantage or disability.
- Increase the availability and readiness of DEAs that can be easily used to author games and gamified learning experiences.
- Capacitate design and development practices implemented with inclusiveness in mind.
- Empower educators and other stakeholders to create customizable and reusable DEAs.
- Facilitate the selection of suitable tools that enable the creation of highly customizable and reusable DEAs and extend the asset life cycle.
- Increase awareness and knowledge on the positive benefits of DEA customization and reuse practices.

GOOD PRACTICE 2: Reinforce teachers' readiness to adopt digital accessibility

The last decade has recorded consistent initiatives of the European Commission that support accessibility efforts:

- The Web Accessibility Directive (Directive (EU) 2016/2102), in force since 22 December
- 2016, that provides people with disabilities with better access to websites and mobile apps of public services.
- Two implementing decisions ensuring uniform conditions for the implementation of the Directive adopted in 2018 by the European Commission: (1) Commission Implementing
- Decision (EU) 2018/1523 establishing a model accessibility statement; (2) Commission Implementing Decision (EU) 2018/1524 establishing a monitoring methodology and the arrangements for reporting by Member States.
- A decision on the harmonised standard for websites and mobile applications that provides for the presumption of conformity with the Directive published by the Commission on 12 August 2021

Objectives of the good practice

- Increase awareness on digital accessibility guidelines that can be easily and directly considered, adopted and applied by teachers when creating digital learning content and GLPs.
- Enable teachers apply digital accessibility recommendations.
- Enable teachers use game accessibility options to better the experience of players with disabilities.
- Enable teachers test the accessibility of learning resources using accessibility checkers.

GOOD PRACTICE 3: Sustainable and resilient piloting strategies applicable during and beyond pandemic and quarantine times to nurture inclusive educational practices

Objectives of the good practice

- Support alternative piloting practices that adapt to diverse educational contexts and target
- group needs.
- Support the collection of qualitative and quantitative data to determine learner outcomes and satisfaction.
- Provide effective metrics for evaluating the performance of the piloting programme.

This document will explain how the expected results of the project have the potential to feed into relevant policy agendas and will focus on accessibility in inclusive digital education.

1.1 THE ROLE OF THIS DOCUMENT IN AND OUT OF THE PROJECT

This document will provide a general policy recommendation in an effort to support inclusive, open education, the provision of accessible digital learning resources, and the adoption of web accessibility standards and tools. This recommendation will focus on the inclusion of students with disabilities, but their principles can benefit all excluded disabled and disadvantaged groups. It is intended as a tool for EU institutions, national governments, social partners and civil society, teachers, parents and students to make inclusive education a reality in Europe and its Member States.

The document will give the main stakeholders a better insight of the INCLUDEME project and its different components related to the access and use of interactive, game-like activities within the educational process. It is directed to the INCLUDEME Stakeholders/ Policymakers and will inform the pedagogical approaches undertaken in the project, the features of the technologies that will be provided, the teachers' training needs, as well as the information, awareness, and dissemination actions.

Moreover, this document will help to improve not only the inclusive policies and strategies, but also practices of organisations directly or indirectly involved in inclusive educational. Thus, they will assist educational organizations in supporting disadvantaged and disabled learners and in training staff to improve and adapt learning and teaching practices to learners from disadvantaged groups and persons with disabilities to choose adequate learning paths.

This document aims to provide information and recommendations to the policymakers so as to look at the transformation of digital education and Inclusive education as interconnected.

1.2 APPROACH

The policy recommendation was built starting from the consortium experience and it was consolidated through the implementation and piloting of the INCLUDEME solution.

Involving teachers in the project activities and inviting teachers to participate in pilots and training sessions/workshops, contributed towards achieving the aim of WP6, that is to evaluate the Platform and Piloting Programme, while also contributing to the teachers' professional development.

All partners have gathered useful information from teachers either through questionnaires or by conducting semi-structured interviews and focus groups (face to face or online). Teachers who participated represent different levels of education (including Higher Education, Secondary Education, and Primary Education), and different specialisations (including specialisations such as special educators, educational psychologists, music therapist, occupational therapists (ergotherapists), and physiotherapists amongst other experts). In addition, both General Education Teachers and Principals and Special Education Teachers and Principals were involved in the project activities, in order to get a more holistic view and understand how different learning disabilities and individual cases are accommodated in different school environments.

1.2 STRUCTURE OF THE DOCUMENT

The deliverable is structured as follows:

Chapter 1 (this chapter) provides an introduction to the document.

Chapter 2 Discusses the results of the national Piloting implemented as well as lessons learned from the different case studies.

Chapter 3 Gives recommendations that present clear arguments as to why the research shows that the recommendation will benefit society, at individual, community and national levels. Practical examples which demonstrate effectiveness in the real world can help to achieve this.

II. LESSONS LEARNT

3.1 Perspectives on inclusive education

In most European education systems, the issue of access to education for disadvantaged learners, especially learners with disabilities is a constant concern for decision-makers and practitioners alike. Thus, a number of quantitative studies have identified the following educational practices as having positive effects for inclusive education:

1. Cultivating a sense of community, of the fact that all students belong to a common group;
2. Leadership: school administrators play a key role in implementing inclusive practices;
3. High standards: high expectations and suitable for their needs for all learners;
4. Collaboration and cooperation: support for learning cooperation;
5. Adapting roles and responsibilities for all staff;
6. Interconnection of services, such as health, mental health and social services;
7. Partnership with parents, considered by the school as equal partners in the education of children;
8. Flexible learning environments, with an emphasis on rhythm, timing and location;
9. Research-based strategies that identify best practices for teaching and learning;
10. New forms of accountability, using standardized tests and multiple sources;
11. Access: physical environment and appropriate technologies;
12. Continuous professional development.

Aiming at equal opportunities in education, educational platforms in general and INCLUDEME in particular, facilitate the access of people with special educational needs to an education that is in line with individual needs, to acquire certain knowledge, to form certain skills. to help them adapt to the demands of everyday life, to overcome the obstacles they face in the process of social adaptation.

INCLUDEME brings its contribution to remove or reduce some vulnerabilities of the education systems, such as:

- Insufficiency of specialized / qualified human resources, including support;
- Insufficient training of teachers for working with classes / groups with diverse composition and for working with children from various vulnerable categories;
- Insufficient investments in infrastructure, equipment, teaching materials, textbooks, supplies;
- Insufficiency and poor representation as diversity of material resources to facilitate individualized educational pathways, for each student;
- Inadequacy and / or inadequate and / or insufficient adaptation of educational resources, for people with disabilities or disadvantaged;
- Elimination of attitudinal barriers in the way of inclusive education;
- Respect for identity, culture and language, to increase the access and availability of inclusive education;

The education and training system is increasingly part of the digital transformation and can capitalize on its benefits and opportunities. However, in countries such as Romania, there are still no efficient systems and procedures for identification and intervention, based on a real inter-sectoral collaboration, which would ensure the right of every child to quality education.
The digital transformation in education is supported by advances in connectivity, the widespread use of digital devices and applications, the need for individual flexibility and the ever-increasing

demand for digital skills. The crisis caused by the COVID-19 pandemic, which severely affected education and training, accelerated change and provided a new learning experience. It can also take place beyond the walls of the classroom, classroom or workplace, providing more freedom in relation to physical and schedule constraints.
However, the type and design of technological tools and platforms, as well as the digital pedagogy used, can directly influence the inclusion or exclusion of people in relation to learning. Learners with disabilities, for example, need tools that need to be fully accessible in order to benefit from the digital transformation.
A reliable digital education ecosystem requires high quality content, easy-to-use tools, value-added services and secure platforms that maintain confidentiality and meet ethical standards. Accessibility, inclusion and student-centred design are vital. The development of European digital educational content should promote the highest pedagogical and educational quality and respect the diversity and cultural richness of the Member States.

From the individual perspective, there are still difficulties to overcome, such as: deficiencies, social context, mental peculiarities; from the curricular perspective: tasks and activities provided to students, conditions created in the classroom (at home), particularities of the online environment (extremely important especially in the context created by the COVID pandemic 19).

Through INCLUDEME, a digital educational platform, we use the opportunities created by this digital learning environment for schools, pupils, teachers and other stakeholders in educational processes and ensure the achievement of objectives, stipulated in European and national policies and strategies, or included in packages. of normative acts regarding inclusive and digital education, such as, by:
• confidentiality and data security, elements that are part of countries' digital strategies and often also part of digital education strategies;
• stored information is protected in such a way that only those who are allowed to see personal data have access;
• non-discriminatory access to resources adaptable to the individual study program;
• addressability also for people with SEN who are hospitalized or who cannot participate in a formalized education program or who study at home;
• cyber security, which is an important part of the digital agenda;
• technology-enabled learning experiences accessible to all students, including those with special needs - correct and appropriate and individualized;
• reducing the gap between education in rural and urban areas, by promoting and informing, disseminating and raising awareness of the importance of education for social integration;
• satisfying the need for interoperability, certification, verification and transferability of content following curricular areas and inclusive education programs, using modern teaching-learning-assessment tools;
• presentation of resources developed in several languages, in several fields of study, we support the implementation of the Curriculum Development Strategy that takes into account the diversity of students in terms of cultural, linguistic, gender differences, their achievements and shortcomings;
• ensuring teachers' access to the INCLUDEME platform, allows them continuous training and creation of new educational resources, according to an individualized program.

Inclusive education can only be achieved by intertwining three elements: culture, strategy and practice.

For the third element, INCLUDEME contributes to the development of inclusive practices, through the following:

- students take responsibility for their own learning;
- teachers help students to learn from the classroom (during the online course);
- students are encouraged to work together, to discuss how they learn;
- the activities within the lessons can be carried out individually or in groups, they can be customized;
- learning difficulties are considered opportunities to develop better practices;
- teachers participate together with the support staff in planning the training activities.

For the success of the practical activities, it is essential to improve the activities in the classroom or online, by:

• finding out the needs of students and teachers to meet them;
• ensuring the necessary and sufficient technical-material basis for the proper development of the educational approach, including the architectural accessibility;
• requesting and securing funds for the acquisition of IT equipment, computer programs, internet access, OER resources, etc .;
• ensuring the training of teachers necessary for special education;
• ensuring the need for teachers and support staff;
• involvement of civil society and the families of students with SEN or disadvantaged in the educational process.

By analysing both what teachers and students would like from online education, and the impact it has had on the educational process, we identify weaknesses and, by improving the product, we turn them into strengths or opportunities.

Following the experience gained in the implementation of INCLUDEME, we can formulate several objectives that could be part of an Education Strategy for people with disabilities or disadvantaged:

• Make special education programs mandatory to prevent discrimination against public education institutions against people with disabilities.
• Special education programs must work to help individuals develop not only their academic skills, but also their personal skills that help them not become self-sufficient members of the community.
• Special education programs to address all persons with disabilities or disadvantaged, any level of education, educational environment, differentiated for normal program and reduced curriculum.
• People with special needs to receive adequate free public education in the least restrictive environment necessary to meet individual needs.
• To receive the additional assistance they need, but to be allowed to participate in the same activities as children without special needs whenever possible.
• The introduction of additional curricular areas for teacher education so that they can cope with the educational process addressed to people with disabilities or disadvantaged.
• Preparing a sufficient number of people to support teachers in the educational process of people with SEN.
• Financial support from the Government for the employment of support staff, necessary and sufficient.
• Allow students to seek alternative options if schools do not meet their academic, social, or emotional needs.

- Ensuring the freedom of decision-making entities such as school inspectorates to establish fields of study according to the structure of the heterogeneous group of students with disabilities and the specifics and needs of the economy, differentiated for county, area, development region.
- Ensuring the freedom of decision-making entities such as school inspectorates to hold discussions with representatives of civil society and the business environment, willing to contribute to raising the quality of the educational process in the county and the social integration of young people with disabilities or disadvantaged and establishing and implementing, through cooperation and collaboration a plan of measures designed to contribute to the above objectives.
- Ensuring the freedom of decision-making entities such as school inspectorates to establish criteria for intermediate evaluation of students' academic skills, financially supported.
- To increase the involvement of families, organizing free training sessions for family members, with the support of NGOs with public and private financial support.
- Schools to provide adequate academic accommodations and affordable housing for students with disabilities, any level of education.
- Sustained and effective information on the education of people with disabilities or disadvantaged.
- Attracting volunteers - especially retired teachers - for additional educational support.
- Providing an accessible information technology system, ie one that can be operated in a variety of ways and is not based on a single sense or ability of the user. For example, a system that provides visual-only output may not be accessible to people with visual impairments, and a system that provides audio-only output may not be accessible to people who are deaf or hard of hearing. Some people with disabilities may need accessibility-related software or peripherals to use educational systems.
- Providing financial support for all people with disabilities for access to assistive technologies.
- Providing financial assistance to local communities to ensure access to education for people with disabilities or disadvantaged. Special purpose amounts.
- Improving the teaching-learning-assessment process through a more consistent involvement of teachers through decisions, tasks, resources provided by teachers adapted to the needs of the child with disabilities and by collaborating with factors that can become points of support (professionals in psychopedagogy, parents etc.).
- Creating a platform dedicated to the education of people with disabilities. Providing free resources for different educational environments, teachers and support staff, families and organizations involved in the educational process of people with disabilities.

3.2 Engaging with TGs – Preliminary findings and Pre-Piloting WP6 EVALUATION AND PILOTING

During piloting the partners have reached out to key target groups, both direct and indirect. In particular, participants in DTG1 (Socio-economically disadvantaged students (aged 14-24)) and DTG3 (School leaders and teaching staff in high-schools and universities) were directly involved in piloting. In turn, they also involved other key stakeholders in DTG2 (Students with disabilities (Health-related needs)), ITG1 (Primary and secondary education organizations), and ITG2 (Families). The age range of participants reached through piloting (directly or indirectly) spans a big age range between 3-53 years old. Figure 5 shows the educational levels covered across the consortium. For special teachers, technology is a vital tool for teaching and learning. Tablets and

switches/buttons are preferred input devices for their students. Having a rich repository of resources (games, learning material, H5P gamified activities and interactive content) which can be easily customised, personalised, and adjusted will greatly facilitate their teaching and have positive impact on their students' learning and development.
Commonly used learning activities or educational games used with students include: language games, activities with sounds, activities with images, memory games, puzzles, and math games. When asked to provide the first words that come to their mind when describing the INCLUDEME platform, the most common attributes provided are: useful, helpful, convenient, innovative and multifunctional easy, digital, learning and fun.
Some challenges were also identified such as time consuming, time for preparation, thinking about new games and new content every date, requires a lot of time investment especially at the beginning. For speech therapists, speech pathologists, music and occupational therapists and other specialist educational staff teaching students at the special education school, multimedia content is key. The use of rewarding sounds, animations, and audio feedback is crucial for high learning impact and increased engagement. In terms of usability, high contrast, simple or plain background for the H5P gamified activities, and audio feedback are essential aspects to consider. Immediate feedback for correct or wrong answers is preferred over accumulated mark/score at the end of an activity. Another important element is for the content, learning materials, H5P activities to be available offline and also available as printable activity pages. Commonly used learning activities or educational games used with students include: language games, activities with sounds, activities with images, memory games, and puzzles, amongst others. For teachers in secondary education (high school/lyceum) there is limited time, flexibility, and external incentive to use digital technologies as part of supportive teaching.
Teachers may share some resources (like online games approved by the Ministry of Education) with parents and students themselves so that students can practice specific learning units (e.g., mathematical calculations or solving mathematical problems, crosswords, puzzles, etc.). The INCLUDEME Platform can support these efforts as a supplementary source of learning. In order for the INCLUDEME Platform to be utilised as a core part of the teaching approach there are many challenges. First, time is limited with each student. Second, learning activities must be closely aligned with the learning materials/curriculum covered in each level/year, and the particular disability and severity/spectrum, amongst other aspects. Academics at private Higher Education Institutions (HEIs) do not typically have students from socio-economically disadvantaged communities. There are however students with learning disabilities which are entitled to provisions based on their medical record. The fact that undergraduate students have their own mobile devices makes the INCLUDEME Platform an efficient and appropriate learning space.
Key points: (1) The content units have to be well structured, simple, and contain as little text as possible because most children do not know how to read. (2) If is possible, the H5P activities should contain an audio version of the text. (3) To achieve consistent progress, some children needed one-on-one assistance. Lesson learned: Most of the H5P minigames were based on drag and drop and point and click actions, and the progress was evident after each session. For minigames that required written input from the children, the progress was limited, with a slight improvement towards the end of the summer school for a quarter of the participants. Since some of the children did not know the alphabet, they needed assistance during all the meetings. Their vocabulary was very limited. They were not able to name animals, fruits or vegetables. Learning through trial and error greatly improved their performance.

Key points: (1) The groups remained inhomogeneous, inconsistent and the level of English proficiency varied. (2) A critical challenge was the fact that some could not read and write using

the Latin alphabet, especially the children. Some of the lessons were translated in Ukrainian. (3) All resources for the English learning activities for children and adults were made available for all the accounts that were distributed. Most participants reused accounts, as they did not have their own laptops and children did not have their own phones. Some would play the H5P units in groups, especially the children. Lesson learned: Providing high granular content greatly improved learner motivation and learning outcomes. The activities proved that content is highly reusable, as the units could be easily translated into Ukrainian. Availability of printed materials was very helpful for this target group. Those that did not have access to the digital resources would use the printed versions.

Digital games and gamification have a place in education according to the almost all interviewed respondents. They see the future of digital classroom games “when new knowledge is presented as a game, learning becomes easier, when children participate in the teaching they learn faster” (teacher with 5 years of experience). When students participate in the teaching of new material through games, they learn more easily, when students with disabilities see a positive example from their classmates, they make more progress. Although the gamification is applicable and preferred by Bulgarian teachers, parents have a slightly different point of view. They think that their children sit in front of the screens a lot. It’s true, but at the moment most of their time is spent with Tik-Tok, Facebook and other social networks. “These students are sitting in front of the screen anyway” (teacher with 5 years of experience).

III. POLICY RECOMMENDATION

The INCLUDEME experience has highlighted the need to:

1. **Invest in sustainable, inclusive Open Educational Resources, which can enable richer learning experiences for disadvantaged and disabled learners, and can empower teachers to act as digital authors. Such efforts need be correlated with accessibility-aware and aging-software design practices that nurture cost-efficient actions. Digital asset customization and reuse must form core pillars of inclusive education, enabling not only the personalization of digital resources to meet specific needs of target groups, but also increasing teachers' readiness to act as digital authors.**
2. **Create a European hub where organisations can register as entities interesting to participate in piloting and exploitation activities, substantially improving project implementations and outcomes.**
3. **Reshape and update the curricula, the assessment methods, as well as the dissemination and exploitation strategies and interventions to activate, accommodate, and nurture enablers that directly foster, and sustainably cultivate *talent-oriented educational practices where disabilities are explored as talents and talents are not perceives as disabilities*.**

The concept of inclusive digital education needs to cover:

- all levels of the education system, from the individual (learners and teachers) through the organisational and management of schools to the regional or national level;
- inclusion, exclusion and the digital divide to be consider as interrelated, interdependent horizontal issues;
- based on a digital transformation that goes far beyond simply the application of digital technology in Education.
- The main recommendations with regard to the policy on inclusive and digital education address:
    - Educational standards that implement talent-oriented practices
    - Digital accessibility
    - Teachers' competences
    - Disadvantaged and disabled student's accessibility to technology and digital recourse
    - Digital Education Standards
    - Digital educational environment
    - Regional and national management of the Education system

3.1 Educational standards that implement talent-oriented practices.

The educational system, as well as the labour market remain largely unequipped to accommodate, nurture, and employ the talents of able and disabled individuals. People with talents, as well as people with disabilities have unique skills and perspectives that can benefit employers and society.

Talent as an ability

Talent is generally defined as a natural aptitude or skill for a particular activity. Ability is a learned skill that can be acquired through practice and hard work. Talent can be developed and enhanced through training and education.

It is important to consider the fact that talents are complex and multidimensional constructs that involves cognitive, affective, and behavioural components. They are

not a fixed or static trait, but rather a dynamic and malleable potential that can be influenced by various factors, such as motivation, interest, feedback, and opportunity. They are not a guarantee of success, but rather a resource that can be utilized and optimized through deliberate practice, goal setting, and self-regulation. Talents can be a solitary phenomenon, but it can also be a social and contextual one that depends on the interaction and collaboration of individuals and groups. Talents are not value-neutral concepts, but rather a normative and evaluative one that reflects the values and expectations of society and culture.

Disability as a talent

Disability as a talent is a perspective that builds upon the unique skills of disabled individuals and argue that they can be successfully employed to benefit employers and society. Disability as a talent recognizes the diversity and potential of the disability community, and challenges the stereotypes and barriers that often exclude them from the workforce. It also promotes the inclusion and accessibility of people with disabilities in all aspects of life, such as education, technology, culture, and entertainment.

Employing disability as a talent (i) can increase innovation and creativity, as people with disabilities can offer new solutions and approaches to problems; (ii) enhance customer satisfaction and loyalty, as people with disabilities can better understand and serve the needs and preferences of diverse customers; (iii) can improve employee engagement and retention, as people with disabilities can foster a culture of respect and collaboration among their colleagues.

To ensure that all individuals have access to inclusive education, including digital education, in all the stages of their education and training, it is necessary to develop dedicated educational standards that provide alternatives to current educational approaches, and guide the design, development, and implementation of **talent-oriented practices**.

The educational objectives, learning progressions, and overarching goals for each subject area and grade level should be extended and adapted to reflect the uniqueness and the diversity of each individual, as well as respect the creativity and talents each individual possesses. They should provide an alternative to standard educational teaching and evaluation methods, enabling each person to learn within environments that boost their real potential and that employ adequate assessment metrics, which do not hinder their true abilities in a life-long learning continuum.

Talent-oriented educational standards should provide alternatives to traditional approaches and should provide guidance for curriculum development, instruction, and assessment. They should ensure that all individuals have access to high-quality education and opportunities to succeed and be employed.

These standards should include:

- ✓ Content standards: These standards should specify the talent-oriented knowledge and skills that individuals should learn in each subject area and grade level to boost their real potential and true abilities.

- ✓ Performance standards: These standards should define the levels of achievement that individuals should demonstrate in relation to the content standards.

- ✓ Process standards: These standards should describe the methods and strategies that individuals should use to learn and apply the content standards as part of talent-oriented practices.

The adoption of these standards should occur in connection with actions that support the overcoming of common misconceptions about disability that can lead to discrimination, isolation, and exclusion of people with disabilities. Talent-oriented educational standards can promote a more inclusive and empathetic society where everyone is valued and respected

3.2 Accessibility

- Accessibility of digital educational materials and new technologies, easy-to-read, subtitling, technical aids and assistive technologies to facilitate communication. Accessible education materials must be provided taking into account the different needs of students with disabilities, including persons in the autism spectrum, with communication impairments and with sensorial disabilities.
- Investment in access to appropriate technology and alternative and augmentative communication systems to facilitate learning should be supported as well as of adaptions of methodologies and to classroom organisation to facilitate inclusion.
- Accessible education materials must be provided taking into account the different needs and digital competences and skills of teachers.
- Inclusive education requires educational transformation for the full and effective participation, accessibility, attendance and achievement of not only students but also teachers. A special mechanism is needed to support them in their teaching and classes related to digitalization.

3.3 Teachers' competences

- to improve digital competences of teachers with accessibility standards. All teachers working with students with disability or disadvantaged students need to cover minimum of accessibility standards.
- A mechanism to be developed to support educational process, classes related to digitalization.
- The digital competence of teachers is still not at a high enough level. This should be continuously taken into account in the initial preparation and continuing vocational development of teachers. The ability to use digital technologies, knowledge of the different media and assistive technologies are important, but equally important is the ability to choose digital learning content and to design an inclusive learning environment that responds to the preferences, competences or skills of individual learners.

3.4 Disadvantaged and disabled student's access to digital education, technology and digital recourses.

Specially trained teachers, educators, instructors, and trainers (both in Special Education and General Education), that will use the INCLUDEME platform and games will give a the specific support of students with special needs or disabilities.

- Accessibility of disadvantaged students:
  Unfortunately, schools and education still lag behind the promise of technology and the relationship between the use of digital technology and resources in schools and students' performance is not straightforward. For that reason, greater investments in

ICT is not always linked to greater student performance, educational systems have not yet incorporated the use of technology in classrooms, and large shares of teachers feel unprepared to cope with this task. In this regard, one of the challenges is how to improving equity between disadvantaged and disabled students. Helping teachers and schools incorporate technology in learning through clear goals and innovative practises is another step. Finally, learning from past experiences should help with decisions on future investments in technology, in accessible resourses and free access to these resources.

- With the inevitable introduction of distance learning, the COVID-19 pandemic has led to deepening educational inequalities, but it also provides a unique opportunity for education reform. This includes better linking schools, parents and communities and improving inclusive digital education for all students.
- Provide awareness raising accessible campaigns directed to students with and without disabilities on disability and the benefit of living together, and to parents on the benefits of inclusive education for all.
- Provide awareness raising and education initiatives to address National Governments to remove all barriers to inclusive education for pupils with disabilities. They should ensure the development and delivery of training using new technologies (INCLUDEME platform).

3.5 Digital Education Standards.

- These Standards will provide the competencies for learning, teaching and leading in the digital education providing a comprehensive roadmap for the effective use of technology in schools. Standards ensure that using technology for learning can create high-impact, sustainable, scalable and equitable learning experiences for all students. The Digital Education Standards will assist schools to understand, manage and implement their digital environment.
- These standards will improve digital competences and digital skills of teachers and this will cover the accessibility standards.

3.6 Digital Education Environment

- Teachers need support at organizational level (i.e. at school level) in order to obtain the necessary knowledge and guidance. Cooperation between stakeholders – teachers, school leaders, support staff, the wider community, councils in the field of education, policy-makers, families – is essential to assess what structures and digital solutions are needed to support each student.

3.7 Regional and national management of the Education system

- Cross-sectoral and multi-level partnerships building bridges between disability-specific, disadvantaged students, professionals and policy makers.
- Facilitate the transfer of knowledge and expertise from special education to mainstream providers and general exchange of good practices among teachers, educators and other training professionals.
- Ensure coordination between all relevant ministries, authorities and bodies as well as family organisations. (National governments must ensure that all teachers are trained on inclusive education. The Consortium should facilitate the exchange of policies and good practices among countries/partners and stakeholders.)

IV. CONCLUSIONS

INCLUDEME project focuses on increasing the accessibility of digital learning resources and applications. Inclusive education requires an educational transformation for the full and effective participation, accessibility, attendance and achievement of all students, especially those who are ostracised or at risk of being marginalised.

Inclusive education is a tool that allows communities, structures and systems to fight discrimination and harmful stereotypes, to recognize diversity, to encourage participation and to overcome barriers to learning for all.

This implies a cultural, political and practical transformation of the education system in all its environments in order to be consistent with the different requirements and standards for digital education and accessibility of digital resources. In this aspect, the commitment and political will to undertake a profound transformation of education systems and digital education is important.

From a practical point of view, INCLUDEME platform aims to cover the digital needs of disadvantage and disabled students ang give access to digital resources that will increase the inclusion of these vulnerable groups and accessibility practice in digital education.