Good practices in creating an inclusive environment in Education Institution

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Abstract / Povzetek

The shift toward digital education has created opportunities and challenges in ensuring inclusion for all students, especially for those with disabilities or special needs. To promote inclusivity in digital education within higher education institutions (HEIs), the ERASMUS+ project SET4Inclusion initiated a Call for Good Practices, inviting educators and institutions to share effective practices across various areas, such as leadership, infrastructure, and pedagogy. Out of 15 collected and evaluated good practices, five exemplary practices were selected for their impact on fostering inclusive learning environments. This paper presents these five practices, offering insights and recommendations for HEIs to enhance digital inclusivity in their educational offerings.

Keywords / Ključne besede

Inclusion, digital education, inclusive pedagogy

1 Introduction

The digitization of education offers transformative potential to enhance student learning outcomes by providing flexible, personalized learning opportunities. However, it also presents significant challenges, particularly for students with disabilities or special needs who may face barriers if their diverse learning requirements are not adequately addressed. As higher education institutions (HEIs) cater to an increasingly diverse student population, ensuring that digital education is inclusive and accessible to all students has become a critical priority.

To address this need, the ERASMUS+ project SET4Inclusion was established to enhance inclusive digital education in higher education. The project aims to foster environments where all learners feel valued, regardless of their abilities or needs. An important initiative of the project was the Call for Good Practices, which invited educators and educational institutions to share examples of their inclusive digital practices. The call focused on various areas, such as leadership, collaboration, infrastructure, professional development, pedagogy, and assessment, encouraging contributors to highlight how they prioritize inclusion and adapt to diverse student needs.

2 Good Practices

To collect good practices on inclusive digital education, several methodological steps were employed. A call for good practices was developed and widely disseminated by all project partners, who translated and promoted the call to maximize reach across different regions.

A standardized template was developed to guide submissions, ensuring consistency in how good practices were described, including details such as context, methodologies and lessons learned. A total of 15 submissions were received from four countries, providing a diverse array of practices related to inclusive digital education.

An online workshop was conducted with all project partners to present and discuss each submitted practice. This collaborative workshop served as a preliminary evaluation forum where participants could provide feedback and highlight key aspects of each practice.

Following the workshop, a detailed survey was created based on the project's established factors and indicators for inclusive digital education. This survey facilitated a systematic evaluation by all partners.

The received practices were also categorized according to the SET4Inclusion Digital Education Framework, aligning them with specific inclusion areas such as leadership, collaboration, technology, professional development, pedagogy, assessment, and student competence. Table 1 summarizes the distribution of practices across these categories.

The data in the table indicate a broad distribution of practices across various inclusion areas, with a notable emphasis on pedagogical supports and resources, infrastructure and technology, and student digital competence. This distribution suggests a balanced approach to inclusive digital education, addressing both the technical and pedagogical aspects needed to create equitable learning environments.

Table 1: Covered inclusion areas by received practices

Inclusion areas	No. of practices
Leadership/School's perspective	60,0%
Collaboration and Networking	33,3%
Infrastructure and Equipment/Tools and Technology	66,7%
Continuous Professional Development	60,0%
Pedagogy: Supports and Resources	86,7%
Pedagogy: Implementation in the classroom	53,3%
Assessment Practices/Inclusion Assessment	26,7%
Student Digital Competence/Student's Perspective	66,7%
Other areas	6,7%

This approach ensured a robust and systematic process for identifying, evaluating, and categorizing good practices in inclusive digital education, promoting the exchange of effective strategies across diverse educational contexts.

This paper presents the best five practices identified through this evaluation process, offering insights and practical guidance for other institutions seeking to enhance their inclusive digital education initiatives. Brief overview of these exemplary practices illustrates their potential to enhance an inclusive educational environment in higher education.

2.1 "Inclusive Glossary of Mathematical Terms: A Hybrid Pedagogical Tool for the Inclusive Education of Deaf and Hearing Children" by José Carlos Neves, and Carla Sousa (Portugal)

The Inclusive Glossary of Mathematical Terms (GIM) is an educational tool to support deaf children, particularly those using Portuguese Sign Language (LGP). GIM combines physical cards and digital videos to create a memory game that enhances mathematical learning through interactive play. It fosters inclusivity by allowing both deaf and hearing children to learn together. It is accessible online and includes an adaptation of Brazilian Sign Language (LIBRAS).

GIM is designed for primary and preschool teachers and is user-friendly, requiring no advanced technical skills. Developed through collaboration among experts in education, design, animation, and deaf culture, it ensures the content is relevant and accessible. Teachers specializing in deaf and hard-of-hearing (DHH) students contributed to the development and testing, involving 120 children across three schools. The game has shown positive impacts on student engagement and learning outcomes.

The game integrates physical cards with animated videos to illustrate mathematical concepts. These cards can be used with a mobile app that displays corresponding videos in LGP or LIBRAS, making it adaptable to different classroom settings. The game's components can be produced at low cost through laser cutting or 3D printing or printed on paper for traditional use.

Research supports GIM's effectiveness in teaching mathematics and sign language to young children, particularly DHH students. However, further studies are needed to explore its application in various educational contexts and assess its long-term impact on learning.

2.2 "The Inclusive working group at Faculty of Business UHU" by Alfonso Infante Moro (Spain)

Accessibility for individuals with specific needs in digital education is a fundamental obligation for universities. Alfonso Infante Moro, who leads the "special needs technical unit" at the University of Huelva's Faculty of Business and Tourism, has been instrumental in promoting this principle. Since its presentation at the 2021 International Congress of University and Disability, the model continues to play a crucial role in ensuring inclusive education at the university level. Under Infante's leadership, the faculty advocates for all students' right to access higher education and emphasizes the necessity of digital accessibility provisions.

Spanish regulations, such as the Ley General de Derechos de las Personas con Discapacidad (General Law on the Rights of Persons with Disabilities, 2013) and the Plan de Acción para las Personas con Discapacidad (Action Plan for Persons with Disabilities, 2014-2020), highlight the importance of inclusivity

in higher education. However, the digital aspects of accessibility still require significant attention to ensure that all students can fully participate. The University of Huelva's Faculty of Business has addressed these needs by organizing educational technology conferences focusing on inclusion and diversity. A dedicated working group led by Alfonso Infante promotes inclusive practices and classroom accessibility, supporting students across various degree levels through tailored adaptations and collaboration with clinical health specialists.

Innovative digital tools, such as synchronous subtitles, have been implemented to support students with hearing impairments, benefiting a broader student population. Approximately 0.3% of the faculty's students require specific educational support, and efforts continue to enhance their digital learning experiences. Beyond the University of Huelva, Infante advocates for a standardized system of inclusive practices across European universities. His work contributes to developing a Standards Guide for the Inclusion of University Students with Disabilities, aimed at improving access and support for students in the digital era.

2.3 "EcoDigi: A Practice for Sustainable Digital Transformation in Adult Education" by Silvia Doratiotto (Italy)

EcoDigi is an initiative to promote digital transformation in adult education while prioritizing environmental sustainability and inclusivity. The project supports the development of digital readiness in an eco-friendly and accessible way, addressing the needs of adult learners, including those with disabilities or special needs. EcoDigi emerged in response to the growing reliance on digital platforms during the COVID-19 pandemic, recognizing both the opportunities for inclusion and the need to minimize environmental impact. The project helps educators and institutions adopt more sustainable and inclusive practices by providing self-assessment tools, teaching materials, and guides.

The initiative targets a broad audience, including adult learners, educators, specialists, and NGOs involved in education and sustainability. Through specialized training, EcoDigi will create a pool of skilled trainers across partner countries, strengthening the capacity of adult education providers to act as leaders in their communities. The project will produce several vital resources, including a self-assessment tool, a report on best practices, an online platform, and guidelines for creating green and accessible education.

EcoDigi also plans to host webinars and organize an international conference to promote the exchange of good practices across partner countries. The initiative aims to ensure that digital transformation in adult education is sustainable and inclusive, contributing to a greener and more equitable digital society in Europe.

2.4 "Innovative XR Technologies Research and Development Center (YETAM-XR)" by Irfan Simsek (Turkey)

The Innovative XR Technologies Research and Development Center (Yetam XR) at Istanbul University-Cerrahpaşa, led by Associate Professor Irfan Simsek, focuses on advancing virtual reality (VR) and augmented reality (AR) technologies in education and industry. Supported by the Istanbul Development

Agency, Yetam XR develops 3D virtual technologies tailored for academic and industrial applications. The centre offers educational programs in 3D modelling, visual design, animation, and Unity programming, ranging from beginner to advanced levels, equipping participants with theoretical and practical skills for the professional use of VR and AR technologies.

Yetam XR integrates advanced technologies into educational environments, transforming traditional learning with immersive and interactive content. The centre prioritizes inclusivity, ensuring its educational tools are accessible and adaptable to diverse learning needs. Equipped with state-of-the-art VR headsets and 3D modelling tools, Yetam XR provides a high-quality digital learning experience.

The centre's projects include the Virtual Factory Simulation, hands-on experience with virtual industrial machines, and the Basic First Aid VR Project, which trains students in emergency response. Additionally, the Occupational Health and Safety Project educates workers and students on safety through VR simulations of hazardous situations, providing valuable real-world experience in a safe environment.

While Yetam XR has successfully enhanced education with immersive technologies, challenges remain, such as limited access to VR equipment for some students. There is also a need to develop more inclusive content for students with disabilities. Future plans include expanding educational content, increasing collaborations with schools and industry partners, and refining programs to meet evolving needs based on feedback from educators and students.

2.5 "INTUX - Introducing training on user Testing with people with disabilities into UX design and related higher education program" by Boštjan Šumak, Maja Pušnik and Katja Kous (Slovenia)

The INTUX project, "Introducing training on user Testing with people with disabilities into UX design and related higher education programs", focuses on making UX design education more inclusive by integrating accessibility into user testing. The project addresses a gap in UX design practices, where people with disabilities are often excluded from testing, leading to products that do not fully meet their needs.

A vital outcome of the project is a specialized training course for UX design students, teaching them how to conduct user testing with people with disabilities. This course is supported by a handbook for university staff, guiding the creation of more inclusive teaching environments. This ensures that students are prepared to design accessible products and meet the challenges they will face as professionals.

The project also develops a framework to integrate these training modules into UX design programs, embedding accessibility into the curriculum. Additionally, it empowers people with disabilities by educating them about their rights in user testing and encouraging their active participation in the design process.

For higher education institutions, INTUX enriches educational programs by incorporating inclusive practices. By adopting the training modules and recommendations, institutions ensure that their students graduate with the skills to design

accessible products and services, aligning with growing societal and professional expectations for inclusion and accessibility.

3 Conclusion

The ERASMUS+ project SET4Inclusion has emphasized the critical importance of fostering inclusive digital education environments within higher education institutions. By systematically collecting and evaluating a diverse range of good practices, the project has illuminated various strategies and tools that can effectively address the needs of all learners, particularly those with disabilities or special needs. The five exemplary good practices presented in this paper highlight innovative approaches to creating accessible learning environments, from hybrid pedagogical tools that integrate digital and physical elements to enhance mathematical understanding, to comprehensive frameworks that address multiple dimensions of inclusivity such as leadership, pedagogy, and technology infrastructure.

These findings suggest that successful inclusive digital education requires a holistic approach that combines

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technological solutions with pedagogical innovation and collaboration among educators. As digital education continues to evolve, the insights and recommendations drawn from these good practices provide a valuable roadmap for higher education institutions aiming to enhance their inclusivity efforts. Future research should continue to explore the scalability and adaptability of these practices across different educational contexts, ensuring that all students, regardless of their backgrounds or abilities, have equitable access to high-quality digital education.

Acknowledgments / Zahvala