



Co-funded by  
the European Union



## Self-Evaluation Tools for e-Inclusion in HEI

### **WP4 – Collection of good practices**

Delivery Day: **30.10.2024**

Authors: **University of Maribor (UM), Institute for Advanced Communication Management (INUK), Istanbul Universitesi – Cerrahpasa (IUC), Cofac Cooperativa De Formacao Eanimacao Cultural Crl (LUSOFONA), Fondazione Istituto dei Sordi di Torino ONLUS (IST), Inercia Digital SL (ID)**

Project name: **Self-Evaluation Tools for e-Inclusion in HEI**

Acronym: SET4Inclusion

The project number: **2022-1-SI01-KA220-HED-000**

The agreement number: **2022-1-SI01-HED-000088368**

Publication license: CC-BY-NC



## AUTHORS

Boštjan Šumak, Faculty of Electrical Engineering and Computer Science, University of Maribor

Maja Pušnik, Faculty of Electrical Engineering and Computer Science, University of Maribor

Katja Kous, Faculty of Electrical Engineering and Computer Science, University of Maribor

Darja Ivanuša Kline, Inštitut za napredno upravljanje komunikacij

Tuncer Can, Istanbul Universitesi - Cerrahpasa

Irfan Simsek, Istanbul Universitesi – Cerrahpasa

Cemre Mangır, Istanbul Universitesi – Cerrahpasa

Ana Cunha, Cofac Cooperativa De Formacao E Animacao Cultural Crl

Sérgio Duarte Correia, Cofac Cooperativa De Formacao E Animacao Cultural Crl

Duarte Tiago, Cofac Cooperativa De Formacao E Animacao Cultural Crl

Enrico Dolza, Fondazione Istituto dei Sordi di Torino ONLUS

Florian Gallo, Fondazione Istituto dei Sordi di Torino ONLUS

Isabel Leandro, Inercia Digital SL

Caridad Martínez Carrillo de Albornoz, Inercia Digital SL

Marta Mármol, Inercia Digital SL

## PROJECT PARTNERS



İSTANBUL  
ÜNİVERSİTESİ  
CERRAHPAŞA



*The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

# Contents

1	Introduction .....	4
2	Methodology.....	5
2.1	Call for good practices.....	5
2.2	Good practices evaluation .....	6
2.3	Good practices analysis.....	6
3	Good practices .....	9
3.1	Inclusive Learning Platforms: Enhancing Accessibility and Engagement through Digital Innovation .....	13
3.2	Learning Center: Embracing Innovative and Inclusive Technologies.....	16
3.3	Innovative XR Technologies Research and Development Center (YETAM-XR).....	19
3.4	“Bordalo and the Cat”: A Proposal to Improve Museum Accessibility through Game-Based Learning.....	22
3.5	"Inclusive Glossary of Mathematical Terms": A Hybrid Tool for Deaf and Hearing Children in Mathematics Education .....	25
3.6	Inclusive Education in the Digital Era in Citology and Histology at the Faculty of Veterinary Medicine, Lusófona University .....	28
3.7	NJOY: A Multimodal Assistive Technology for Supporting Students with Multiple Disabilities .....	32
3.8	The Inclusive Working Group at the Faculty of Business, University of Huelva .....	35
3.9	Inclusive Learning Platforms at the Faculty of Education, University of Huelva .....	39
3.10	Digital Inclusive Project of the University of Huelva.....	42
3.11	DigitALL: Inclusive Resources for Online Learning.....	45
3.12	EcoDigi: Promoting Eco-Friendly Digital Transformation in Adult Education.....	48
3.13	EU Digital Framework for Sign Language (EUDFSL): Advancing Digital Skills for the Deaf Community .....	51
3.14	Free Technology Signs (FTS): Empowering Deaf Job Seekers with Digital Skills.....	54
3.15	INTUX - Introducing training on user Testing with people with disabilities into UX design and related higher education program .....	57
4	Conclusion.....	60
5	Appendix .....	61
5.1	Call for good practices.....	61
5.2	Template for description of good practice .....	63

# 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 is the Collection of Good practices on inclusive digital education in higher education. For this intent the partnership developed a 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 Methodology

To collect good practices on inclusive digital education, several methodological steps were employed.

### 2.1 Call for good practices

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.

All applicants also provided a self-assessment of the inclusion areas addressed by their practice. Table 1 presents the distribution of practices across inclusion areas as self-assessed by their authors.

Table 1: Covered inclusion areas by received practices- self-assessment of the authors

Inclusion areas	% 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%

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. Later, the project partners conducted an additional evaluation of the practices, categorizing them according to specific inclusion areas and factors. This resulted in a slightly different, though not significantly different, categorization (Table 2).

## 2.2 Good practices evaluation

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 of received practices by all partners.

## 2.3 Good practices analysis

The received practices were also analysed and 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 and also according to specified individual factors. Table 2 present distribution of practices across inclusion areas as assessed by project evaluation team and Table 3 present distribution of practices across individual inclusion factors.

Table 2: Covered inclusion areas by received practices - assessment by the project team

Inclusion areas	% of practices
Leadership/School's perspective	60,0%
Collaboration and Networking	6,7%
Infrastructure and Equipment/Tools and Technology	60,0%
Continuous Professional Development	60,0%
Pedagogy: Supports and Resources	93,3%
Pedagogy: Implementation in the classroom	66,7%
Assessment Practices/Inclusion Assessment	20,0%
Student Digital Competence/Student's Perspective	80,0%
Other areas	13,3%

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

The table 3 presents also the distribution of practices according to individual factors.

Table 3: Covered inclusion factors by received practices - assessment by the project team

Factors	% of practices
Inclusive Digital Strategy	53,3
Inclusive Digital Pedagogy & Supportive Culture	20,0
Professional Development	6,7
Collaborative Evaluation	0,0
Shared Vision	6,7
Collaborative Engagement	0,0
Accessible Infrastructure	53,3
Accessible Devices	13,3
Digital Accessibility Support	26,7
Inclusion and Equity	0,0
Continuous Professional Development	60,0
Inclusive Digital Teaching Practices	86,7
Inclusive Digital Resources	46,7
Personalized and Engaging Digital Learning	66,7
Inclusive Classroom Collaboration	0,0
Enhanced Pedagogical Digital Inclusiveness	0,0
Inclusive Digital Assessment Practices	20,0
Digital Feedback and Self-Reflection	0,0
Data-Driven Improvement	0,0
Inclusive Digital Communication and Skills	80,0
Others	13,3

We would like to note that individual practices relate to and cover a variety of different factors; however, some address these factors directly, while others do so less directly or are less thoroughly described in the project

narrative. Therefore, in our categorization, we considered only the factors that each practice directly addresses and are explicitly described in the text.

The distribution of practices across inclusion factors reveals key areas of focus and gaps within the received practices. The most frequently covered factors include “Inclusive Digital Teaching Practices” (86.7%), “Inclusive Digital Communication and Skills” (80.0%), and “Personalized and Engaging Digital Learning” (66.7%), indicating a strong emphasis on teaching strategies and effective digital communication. In contrast, factors like “Collaborative Evaluation,” “Inclusion and Equity,” “Inclusive Classroom Collaboration,” “Enhanced Pedagogical Digital Inclusiveness,” and “Data-Driven Improvement” are not covered at all, suggesting potential areas for further development. Additionally, while “Continuous Professional Development” is addressed by 60.0% of practices, factors directly supporting collaboration and shared vision, such as “Collaborative Engagement” and “Shared Vision,” are covered minimally (6.7% or less). This distribution highlights areas where future initiatives might aim to balance inclusion efforts across a broader range of factors.

With our evaluation and analysis approach we 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.

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 were also presented at the final conference of the project.

In the next section of this document each received good practice is systematically described.



### 3 Good practices

15 practices covering various areas and factors of inclusion were received. All 15 practices were recognized as good practices according to the Framework developed within the project. The following table presents the distribution of practices according to inclusion factors, followed by a description of each practice.

Table 4: Covered inclusion factors by received practices

Factor	Practices														
	Inclusive Learning Platforms, Istanbul	Learning Center	Innovative XR Technologies R&D Center	Bordalo and the Cat	Inclusive Glossary of Mathematical Terms	Inclusive Education in the Digital Era in Citizenship and History	NJOY	The Inclusive Working Group	Inclusive Learning Platforms, Huelva	Digital Inclusive Project	Digit ALL	EcoDigi	EU Digital Framework for Sign Language	Free Technology Signs	INTUX
1. Leadership/ School's perspective															
Inclusive Digital Strategy	●	●	●			●		●	●	●					●
Inclusive Digital Pedagogy & Supportive Culture	●	●			●										
Professional Development	●														



2. Collaboration and Networking															
Collaborative Evaluation															
Shared Vision								●							
Collaborative Engagement															
3. Infrastructure and Equipment/ Tools and Technology															
Accessible Infrastructure	●	●					●		●	●		●		●	●
Accessible Devices							●							●	
Digital Accessibility Support	●	●			●									●	
Inclusion and Equity															
4. Continuous Professional Development															
Continuous Professional Development	●	●	●			●		●	●		●		●		●
5. Pedagogy: Supports and Resources															

Inclusive Digital Teaching Practices	●	●	●	●	●	●	●		●		●	●	●	●	●
Inclusive Digital Resources	●				●		●		●	●	●			●	
6. Pedagogy: Implementation in the classroom															
Personalized and Engaging Digital Learning	●		●	●	●	●	●				●	●	●		●
Inclusive Classroom Collaboration															
Enhanced Pedagogical Digital Inclusiveness															
7. Assessment Practices/ Inclusion Assessment															
Inclusive Digital Assessment Practices	●	●									●				
Digital Feedback and Self-Reflection															
Data-Driven Improvement															



8. Student Digital Competence/ Student's Perspective															
Inclusive Digital Communication and Skills	●	●		●	●		●	●	●	●		●	●	●	●
9. Other				Game-Based Learning and Cultural Accessibility	Game-Based Learning										

### 3.1 Inclusive Learning Platforms: Enhancing Accessibility and Engagement through Digital Innovation

Author: Tuncer CAN

Department Name: Hasan Ali Yücel Faculty of Education

Institution/University Name: Istanbul University - Cerrahpaşa

City and Country: Istanbul / Türkiye

Email: tcan@iuc.edu.tr

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	●
	Inclusive Digital Pedagogy & Supportive Culture	●
	Professional Development for Inclusive Digital Education	●
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	●
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	●
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	●
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	●
	Inclusive Digital Resources	●
	Personalized and Engaging Digital Learning	●

6. Pedagogy: Implementation in the classroom	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	●
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	●
9. Other		

### 3.1.1 Abstract

The **Inclusive Learning Platforms** initiative by AUZEM (Istanbul University-Cerrahpaşa) integrates cutting-edge digital tools to create an accessible and engaging educational environment for students from diverse backgrounds. This initiative leverages technologies such as Virtual Reality (VR), smart boards, mobile learning platforms, and eye-tracking devices to meet the varied learning needs of students. By incorporating adaptive and innovative digital tools, this initiative supports inclusivity, promoting a supportive, collaborative learning atmosphere that prepares students and educators alike for an increasingly digital educational landscape.

### 3.1.2 Context

Established within the Hasan Ali Yücel Faculty of Education, the Inclusive Learning Platforms project reflects the university's dedication to advancing inclusivity and accessibility in education. Turkey's strategic commitment to digital transformation in education underscores the importance of accessible technology in academic settings. This initiative builds on that commitment, addressing the needs of students with disabilities and those requiring additional learning supports. It also serves as a research and training hub, helping faculty and future educators integrate modern technology effectively into their teaching practices while ensuring accessibility for all students.

The Learning Platforms project emphasizes Istanbul University-Cerrahpaşa's goals of creating a technologically proficient teaching community. It provides a hands-on environment where future educators can develop the skills needed to incorporate digital tools into inclusive teaching practices.

### 3.1.3 Description of the practice

The Learning Platforms initiative equips students and faculty members with advanced educational technologies, fostering a collaborative and interactive learning space. Among the key technologies utilized in the project are VR

headsets, smart boards, and mobile devices, each serving a unique role in enhancing both accessibility and engagement in learning.

VR technology allows students to immerse themselves in simulated educational environments, providing realistic scenarios that make learning interactive and tangible. For example, VR applications enable students to engage in virtual lab exercises, allowing them to understand complex scientific concepts through an immersive experience. This approach not only aids comprehension but also makes learning more inclusive by providing an alternative method for students who struggle with traditional learning formats.

The project's smart board technology enables real-time interaction between instructors and students, allowing content to be presented dynamically. Interactive exercises on smart boards enhance student engagement, providing visual and kinesthetic learners with a more accessible way to interact with course materials. This technology, combined with mobile learning devices, ensures that educational content is accessible both in and out of the classroom, supporting flexible learning schedules and accommodating students with diverse needs.

Eye-tracking technology, used primarily for research within the project, provides insights into student engagement and learning behaviours. By analysing data from eye-tracking studies, faculty can adapt instructional materials to better meet student needs. This data-driven approach enhances the project's ability to refine and optimize digital tools, ensuring that they are tailored to support accessibility and student engagement effectively.

The Learning Platforms initiative also includes an ongoing professional development program for faculty and future educators, who receive training in integrating and using these digital tools effectively in their classrooms. By participating in workshops and seminars, educators develop confidence and competence in inclusive teaching practices, which they can apply in various educational settings.

### **3.1.4 Conclusion**

The Inclusive Learning Platforms initiative at Istanbul University-Cerrahpaşa exemplifies how digital tools can create a more inclusive and adaptable learning environment. By providing access to technologies such as VR, smart boards, and mobile platforms, the project empowers students and educators to leverage digital resources that meet diverse learning needs. Through its commitment to accessibility, interactivity, and continuous improvement, this initiative demonstrates how universities can enhance educational experiences in inclusive, innovative ways.

### 3.2 Learning Center: Embracing Innovative and Inclusive Technologies

Author: Tuncer CAN

Department Name: Hasan Ali Yücel Faculty of Education

Institution/University Name: Istanbul University - Cerrahpaşa

City and Country: Istanbul / Türkiye

Email: tcan@iuc.edu.tr

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	●
	Inclusive Digital Pedagogy & Supportive Culture	●
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	●
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	●
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	●
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	●
	Inclusive Digital Resources	



6. Pedagogy: Implementation in the classroom	Personalized and Engaging Digital Learning	
	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	●
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	●
9. Other		

### 3.2.1 Abstract

The **Learning Center** at Istanbul University-Cerrahpaşa is a pioneering facility that integrates advanced technology to create an inclusive educational environment. By providing access to virtual reality (VR), smart boards, tablets, and mobile learning platforms, the center empowers both students and researchers, preparing future educators to integrate technology into teaching while ensuring inclusivity. The center's emphasis on accessibility and adaptive learning tools allows it to serve as a model for creating dynamic and inclusive educational experiences.

### 3.2.2 Context

Established within the Hasan Ali Yücel Faculty of Education, the Learning Center was developed to advance inclusivity and technological innovation in education. With a commitment to supporting students from various backgrounds and learning needs, the center aims to ensure that all learners can access educational opportunities equitably. The Learning Center functions as both an academic support hub and a research facility, fostering an environment where inclusivity, diversity, and cutting-edge educational practices intersect. By equipping future educators with experience in these technologies, the center promotes an inclusive, adaptable approach to modern teaching.

### 3.2.3 Description of the Practice

The Learning Center offers students and researchers access to a wide array of advanced technological tools that enhance both teaching and learning experiences. VR headsets and immersive environments are central to the Learning Center's offerings, allowing future educators to explore realistic teaching scenarios in interactive ways. These tools are especially effective in demonstrating complex concepts that benefit from visual engagement, such as

spatial and experiential learning. By simulating classroom situations, VR helps students develop skills in lesson delivery and student engagement in a controlled, immersive setting.

The center's commitment to accessibility extends to mobile learning technology, including tablets and mobile devices that facilitate flexible learning. These devices allow students to access educational materials whenever and wherever needed, accommodating various schedules and learning preferences, making education more accessible for those with commitments or disabilities. This flexibility aligns with the center's mission to create a learning environment that is adaptable and inclusive.

Additionally, the Learning Center employs smart boards and interactive tablets to support lesson creation and interactive presentations. These tools prepare students for the technological demands of future classrooms, enabling them to design lessons that leverage digital interactivity. For instance, smart boards allow for dynamic content presentations where students can engage directly with learning materials, fostering a participative learning atmosphere.

Further supporting inclusivity, the center incorporates eye-tracking technology for educational and research purposes. This technology helps assess how students engage with digital content, providing insights into visual engagement patterns and learning behaviours. Such data enables the center to optimize educational materials, ensuring they cater to a broader range of learning styles and accessibility needs.

Beyond its resources for students, the Learning Center also plays a vital role in educational research, providing faculty and graduate students access to technology that supports studies on digital learning and inclusive practices. By offering VR, smart boards, and other digital tools, the center contributes significantly to research efforts aimed at understanding and enhancing digital education methodologies.

### **3.2.4 Conclusion**

The Learning Center at the Hasan Ali Yücel Faculty of Education exemplifies how universities can integrate advanced technology to foster an inclusive and dynamic learning environment. By providing future educators with hands-on experience in VR, mobile learning, and smart board technology, the center equips them with the skills to create interactive and accessible classrooms. This model of inclusive technological integration benefits the university's immediate academic community and serves as an example of best practices for educational institutions globally.

### 3.3 Innovative XR Technologies Research and Development Center (YETAM-XR)

Author: Irfan Simsek

Department Name: Hasan Ali Yücel Faculty of Education

Institution/University Name: Istanbul University - Cerrahpaşa

City and Country: Istanbul / Türkiye

Email: irfan@iuc.edu.tr

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	●
	Inclusive Digital Pedagogy & Supportive Culture	
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	●
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	●
	Inclusive Digital Resources	
	Personalized and Engaging Digital Learning	●

6. Pedagogy: Implementation in the classroom	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	
9. Other		

### 3.3.1 Abstract

The **Innovative XR Technologies Research and Development Center (YETAM-XR)** at Istanbul University-Cerrahpaşa leads advancements in virtual reality (VR) and augmented reality (AR) technologies for education and industry. Supported by the Istanbul Development Agency, this center introduces immersive technologies into academic and professional training, emphasizing inclusive and accessible digital experiences. Through specialized courses and simulations, YETAM-XR prepares students and professionals for careers in technology-driven sectors, fostering an educational environment where VR and AR enhance both technical skills and learning accessibility.

### 3.3.2 Context

YETAM-XR was established within the Hasan Ali Yücel Faculty of Education to address a growing need for VR and AR technologies in both educational and industrial settings. Its mission includes making immersive experiences accessible to all learners, particularly those with physical or cognitive disabilities. The center's development was supported by the Istanbul Development Agency, which aimed to expand Turkey's capabilities in XR technologies. The programs offered at YETAM-XR provide training in 3D modeling, animation, and Unity programming, which are essential skills for careers in industries increasingly reliant on advanced digital tools.

### 3.3.3 Description of the Practice

YETAM-XR integrates VR and AR into its educational offerings to bridge gaps in traditional learning methods, providing immersive, hands-on experiences that enhance comprehension and engagement. For instance, the center's **Virtual Factory Simulation** project allows students to interact with digital replicas of industrial equipment, familiarizing them with the complexities of manufacturing and engineering processes within a safe, controlled

environment. This type of simulation offers students and professionals a unique training ground for developing operational skills without the risks associated with actual machinery.

Another key initiative, the **Basic First Aid VR Training**, immerses participants in virtual emergency scenarios, allowing them to practice critical first-aid procedures in a realistic yet risk-free setting. This project aims to increase learners' confidence and practical abilities in responding to emergencies. Additionally, the **Occupational Health and Safety Project** uses VR to simulate hazardous environments, educating students and workers on identifying and mitigating workplace dangers effectively. These projects underscore YETAM-XR's commitment to creating safe, accessible learning spaces that prepare participants for real-world challenges.

YETAM-XR also offers structured courses in 3D Modelling, Visual Design, Animation, and Unity Development, suitable for all skill levels. Through these programs, students learn to create their own VR and AR projects, enhancing their digital content creation skills and encouraging innovation. The center's facilities are equipped with the latest VR headsets, advanced 3D modelling tools, and dedicated software, providing an immersive experience that bridges theoretical learning with hands-on practice.

While YETAM-XR strives for inclusivity, challenges remain in ensuring all students can access VR equipment. To address this, the center continuously works to develop accessible content and aims to expand its inventory of VR hardware, especially to accommodate students with disabilities. Future goals include widening collaboration with other educational institutions and industries, thus broadening the reach and impact of its training programs.

### 3.3.4 Conclusion

The **Innovative XR Technologies Research and Development Center (YETAM-XR)** stands as a pioneering example of how VR and AR can transform education and professional training, especially when accessibility and inclusivity are central to its mission. By integrating immersive technologies into learning, YETAM-XR provides students with practical skills in a digitally advanced environment, preparing them for careers in sectors where technological proficiency is increasingly essential. Through its innovative approach, YETAM-XR showcases the potential of VR and AR to make learning more interactive, accessible, and aligned with the evolving needs of the modern workforce.

### 3.4 “Bordalo and the Cat”: A Proposal to Improve Museum Accessibility through Game-Based Learning

Coordinators: Carla Sousa, Hernani Pawlick and José Carlos Neves

Department Name: CICANT

Institution/University Name: Lusófona University

City and Country: Lisbon, Portugal

Email: [carla.patricia.sousa@ulusofona.pt](mailto:carla.patricia.sousa@ulusofona.pt), [josecsn@ulusofona.pt](mailto:josecsn@ulusofona.pt)

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	
	Inclusive Digital Pedagogy & Supportive Culture	
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	●
	Inclusive Digital Resources	

6. Pedagogy: Implementation in the classroom	Personalized and Engaging Digital Learning	●
	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	●
9. Other		Game-Based Learning and Cultural Accessibility

### 3.4.1 Abstract

“**Bordalo and the Cat**” is an interactive puzzle game developed to make cultural education accessible and engaging, particularly for individuals with intellectual disabilities (PwID). Created by students in Lusófona University’s Video Games degree program in collaboration with the Bordalo Pinheiro Museum and a Lisbon-based NGO, this game introduces players to the art of Rafael Bordalo Pinheiro. The goal is to provide a culturally enriching, cognitively accessible experience that brings museum education into an interactive, digital format. The game is freely available as an Open Education Resource (OER) on multiple platforms, supporting inclusive cultural engagement.

### 3.4.2 Context

“Bordalo and the Cat” was born from a desire to make museum spaces more inclusive, particularly for individuals with intellectual disabilities, who may face accessibility barriers in traditional cultural settings. The game reflects the collaborative efforts between Lusófona University, the Bordalo Pinheiro Museum, and APPACDM Lisboa, a local NGO dedicated to supporting individuals with intellectual disabilities. Developed as part of the Tangible Interfaces courses within Lusófona’s Video Games degree, this project aims to deepen students’ understanding of accessibility in game design while promoting cultural appreciation for Portuguese art. Using game-based learning principles, Bordalo and the Cat aligns with the university’s mission to foster inclusive, socially responsive educational practices.

### 3.4.3 Description of the Practice

The game invites players to guide Pires, a cat inspired by Bordalo Pinheiro’s famous ceramics, through a series of puzzle levels to reach his food. This path-building process not only serves as a playful objective but also encourages players to engage with Portuguese cultural heritage. Each level completion unlocks ceramic pieces reminiscent of Bordalo Pinheiro’s artwork, which players can use to customize their creations within the game. This design introduces an artistic component, enabling users to interact with and reinterpret historical art in a format accessible to people with intellectual disabilities.

Designed as a top-down puzzle, *Bordalo and the Cat* incorporates a range of cognitive accessibility features. The game’s intuitive, simplified controls, guided instructions, and progressive difficulty levels are designed to accommodate players with varying cognitive abilities. Systematic playtesting, based on the Gaming Observation Grid (GOG), was conducted to ensure that each aspect of the game aligns with PwID’s specific needs. By applying these modifications, the development team successfully created an inclusive, accessible learning tool that makes cultural content approachable.

Beyond its educational and entertainment functions, the project provided Lusófona students with hands-on experience in accessibility-centered game development. Working with representatives from the PwID community allowed students to gain firsthand insights into designing for accessibility, resulting in a meaningful, community-informed game. The game’s availability on PC, Mac, and Android devices as an OER reinforces its accessibility, inviting broader use across educational and community settings.

### 3.4.4 Conclusion

“*Bordalo and the Cat*” is a model for accessible, game-based cultural learning. By transforming museum experiences into an interactive digital format, the game fosters cultural appreciation among PwID and expands access to Portuguese art. Its collaborative, inclusive development process highlights the educational potential of game design in making cultural institutions more accessible. The project stands as a valuable resource for educators and cultural organizations seeking innovative ways to bridge gaps in cultural accessibility through digital means.



### 3.5 "Inclusive Glossary of Mathematical Terms": A Hybrid Tool for Deaf and Hearing Children in Mathematics Education

Coordinators: José Carlos Neves and Carla Sousa

Department Name: CICANT

Institution/University Name: Lusófona University

City and Country: Lisbon, Portugal

Email: [josecsn@ulusofona.pt](mailto:josecsn@ulusofona.pt), [carla.patricia.sousa@ulusofona.pt](mailto:carla.patricia.sousa@ulusofona.pt)

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	
	Inclusive Digital Pedagogy & Supportive Culture	●
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	●
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	
	Inclusive Digital Teaching Practices	●

5. Pedagogy: Supports and Resources	Inclusive Digital Resources	●
6. Pedagogy: Implementation in the classroom	Personalized and Engaging Digital Learning	●
	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	●
9. Other		Game-Based Learning

### 3.5.1 Abstract

The **Inclusive Glossary of Mathematical Terms (GIM)** is an innovative educational tool created to bridge the learning gap in mathematics for deaf children, utilizing Portuguese Sign Language (LGP). This hybrid tool combines physical memory cards with digital video elements to create an interactive learning experience, encouraging both deaf and hearing students to learn together. Adaptable for various classroom environments, GIM promotes accessible, inclusive learning by integrating digital videos in both LGP and Brazilian Sign Language (LIBRAS) for a wider Portuguese-speaking audience.

### 3.5.2 Context

The GIM tool was developed as a response to the lack of resources available in Portuguese Sign Language for teaching mathematics to deaf students. At Lusófona University, GIM emerged from the need to provide an inclusive environment where deaf and hearing children can learn mathematics together. By integrating LGP and LIBRAS, this tool ensures accessibility for deaf learners across diverse Portuguese-speaking contexts. Available online via the OPERAT website, GIM is a versatile educational resource suitable for both traditional and digital learning settings, aligning with the school's inclusive educational goals.

### 3.5.3 Description of the Practice

The **Inclusive Glossary of Mathematical Terms (GIM)** was developed as a hybrid tool to engage young deaf and hearing students in a shared, inclusive learning environment. Designed as an interactive memory game, GIM combines physical cards with digital videos in Portuguese Sign Language (LGP) and Brazilian Sign Language (LIBRAS), bridging linguistic and conceptual gaps that deaf children often face in mathematics. The creation process was guided by a multidisciplinary team of experts, including mathematicians, interaction designers, educators specializing in deaf education, and psychologists. Their combined expertise ensured that the tool would not only address mathematical understanding but also support the unique learning needs of Deaf and Hard of Hearing (DHH) students.

In practical application, GIM engages children by having them match pairs of physical cards, each displaying a mathematical term or concept represented through engaging visuals. Upon successfully matching the cards, students activate a corresponding video in either LGP or LIBRAS, where animated storytelling illustrates the mathematical concept. This video component provides a dynamic layer of comprehension, making abstract mathematical ideas more accessible and visually engaging, particularly for DHH students. This multimodal approach enriches the learning experience for both deaf and hearing students, supporting collaborative play and reinforcing inclusivity in the classroom.

GIM's physical cards are intentionally designed for flexibility and ease of access, allowing schools to produce them in various formats. Whether created through low-cost laser cutting, 3D printing, or simple paper printouts, the cards are adaptable to different classroom environments and budgets. This accessibility ensures that GIM can be implemented in diverse educational settings, from high-tech urban schools to resource-limited rural areas. The game fosters cognitive development through visual storytelling, allowing children to form associations, enhance their memory skills, and grasp complex ideas in a playful, interactive format. The digital application of GIM, which provides the animated videos, can be adapted for classrooms with varying levels of technological resources. This adaptability supports the use of GIM in both traditional and digital learning spaces, making it a versatile tool for inclusive education.

Extensive playtesting in three partner schools with approximately 120 children contributed to the refinement of GIM. Feedback from deaf educators and sign language specialists helped ensure that the videos, physical cards, and overall gameplay were fully accessible and pedagogically sound. This iterative approach to development has made GIM a valuable resource for teachers looking to integrate inclusive and accessible practices into mathematics education.

### 3.5.4 Conclusion

The Inclusive Glossary of Mathematical Terms (GIM) represents a significant advancement in accessible education, enabling both deaf and hearing students to engage with mathematical concepts together. By combining physical and digital resources in LGP and LIBRAS, GIM exemplifies how hybrid tools can enhance learning and inclusivity. This project not only supports mathematical understanding but also fosters social inclusion, establishing a model for accessible educational tools in multilingual and multicultural classrooms.

### 3.6 Inclusive Education in the Digital Era in Citology and Histology at the Faculty of Veterinary Medicine, Lusófona University

Author: Marina Badenes

Department Name: Citology and Histology

Institution/University Name: Faculty of Veterinary Medicine of Lusófona University - Lisbon University Center

City and Country: Lisbon, Portugal

Email: marina.badenes@ulusofona.pt

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	●
	Inclusive Digital Pedagogy & Supportive Culture	
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	●
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	●
	Inclusive Digital Resources	

6. Pedagogy: Implementation in the classroom	Personalized and Engaging Digital Learning	●
	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	
9. Other		

### 3.6.1 Abstract

The **Inclusive Education in the Digital Era** initiative aims to provide equitable and accessible digital learning experiences in the fields of cytology and histology. Implemented at the Faculty of Veterinary Medicine, this approach leverages digital resources, adaptable assessment methods, and personalized support systems to ensure all students, particularly those with disabilities, can engage with the curriculum effectively. The initiative promotes inclusivity by offering flexible learning schedules and utilizing multimedia resources that align with the unique needs of a diverse student body.

### 3.6.2 Context

Lusófona University, through its dedicated support system, emphasizes inclusive education to foster equitable learning environments. The university has established a “Gabinete de Apoio aos Estudantes com Necessidades Educativas Especiais” (Support Office for Students with Special Educational Needs), which collaborates with faculty to provide personalized support plans for students requiring additional accommodations. Faculty members receive continuous training, including participation in workshops such as the SET4Inclusion Workshop, which equips them with the skills to integrate inclusive practices and digital tools effectively into their teaching.

The initiative, which originated in response to the university’s broader commitment to inclusivity, specifically targets the needs of master’s students in cytology and histology. The program is designed to ensure that all students, regardless of their individual needs, have access to high-quality educational content and support.

### 3.6.3 Description of the Practice

In the cytology and histology courses, the inclusive approach relies on digital tools that facilitate in-depth understanding and accessibility. Professors utilize digital slides accessible via the NDP.view2 software, allowing students to explore complex biological structures such as cells, tissues, and organs in high detail. The software is introduced in initial sessions, where students receive guidance on installation and usage. Faculty members ensure that students can fully access and navigate the digital resources, addressing technical challenges upfront to establish a solid foundation for learning.

The faculty's inclusive methods extend to the use of multimedia resources, enabling students to learn at their own pace. For instance, professors provide class summaries, structured outlines, and comprehensive digital guides, which include course content, learning objectives, and methods for evaluation. This structured approach benefits students by allowing them to revisit material at their own convenience, supporting diverse learning styles and making complex information more accessible. In addition, the university arranges online sessions upon request for students who face geographical or scheduling constraints, ensuring that everyone has an equal opportunity to engage with the curriculum.

Faculty members employ accessible language, simplified terminology, and visual aids in their lectures. Presentations incorporate carefully chosen colours and diagrams to accommodate students with color vision deficiencies, while imagery reinforces essential concepts. The open atmosphere in the classroom encourages questions, promoting a supportive learning environment where individual needs are recognized and addressed.

The university's personalized support plans also guide faculty in adapting assessments to accommodate students with specific needs. Adaptations may include extended exam time, simplified question formats, or access to supplementary materials. For international students, who may encounter language barriers, faculty members adjust grading practices to ensure a fair evaluation of their understanding.

Continuous professional development is a core component of this practice, with faculty participating in pedagogical workshops to stay updated on inclusive methodologies. These sessions cover the latest digital tools and strategies to enhance accessibility, allowing professors to implement innovative techniques that address potential learning barriers.

### 3.6.4 Conclusion

The **Inclusive Education in the Digital Era** initiative at Lusófona University exemplifies the integration of digital resources, adaptive assessments, and personalized support to create an accessible and inclusive learning environment. By tailoring educational practices to accommodate diverse learning needs, the faculty ensures that all students, particularly those with disabilities, have the support necessary to succeed in their studies. This



---

commitment to inclusivity sets a standard for accessible education in higher education, emphasizing the university's dedication to equitable learning opportunities for all.

### 3.7 NJOY: A Multimodal Assistive Technology for Supporting Students with Multiple Disabilities

Authors: Valentim Realinho, Luís Baptista, Rafael Dias, Daniel Marmelo, Paulo Páscoa and João Mourato

Department Name: VALORIZA Research Center for Endogenous Resources Valorization

Institution/University Name: Polytechnic Institute of Portalegre and Escola Secundária Mouzinho da Silveira

City and Country: Portalegre, Portugal

Email: vrealinho@ipportalegre.pt

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	
	Inclusive Digital Pedagogy & Supportive Culture	
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	●
	Accessible Devices for Inclusive Teaching and Learning	●
	Digital Accessibility Support for Inclusive Learning	
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	●
	Inclusive Digital Resources	●



6. Pedagogy: Implementation in the classroom	Personalized and Engaging Digital Learning	●
	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	●
9. Other		

### 3.7.1 Abstract

The **NJOY** project presents a multimodal assistive technology system designed to enhance learning, communication, and daily tasks for students with multiple disabilities. Focused on creating an accessible and adaptable learning environment, NJOY incorporates an Android-based app paired with a specialized joystick, providing an interface that integrates visual, audio, and haptic feedback. The project's core innovation lies in its augmentative and alternative communication (AAC) system, which offers customizable support for users, helping them engage with educational content and daily activities. Initial tests with students facing severe cognitive and motor impairments have demonstrated NJOY's potential as a powerful tool in promoting both engagement and independence.

### 3.7.2 Context

NJOY was developed to address the specific educational challenges faced by students with complex disabilities, providing support for mobility, communication, and adaptive learning. Originating from the adaptive learning principles at the Polytechnic Institute of Portalegre, NJOY was co-developed with Escola Secundária Mouzinho da Silveira, funded by the Fundação Ilídio Pinho. The system's design reflects an understanding of how assistive technology can create an accessible learning environment, with features tailored for students with limited motor and cognitive abilities. NJOY also incorporates the ARASAAC symbol set for AAC, enhancing communication options for students, which supports them in both educational and social contexts.

### 3.7.3 Description of the Practice

The NJOY system consists of a seamlessly integrated setup that includes a tablet-based application controlled through a specially designed joystick. This joystick allows students to navigate a grid-based interface on the NJOY

app, where each cell contains visual symbols or ARASAAC pictograms that provide audio feedback via text-to-speech technology. As students maneuver through the grid, they receive auditory cues that assist them in making choices, promoting a structured, accessible interaction with digital content. The app also features adaptive controls—such as customizable timeouts and predictive movement settings—that accommodate the specific physical needs of each user.

Further enhancing its flexibility, NJOY includes a **Collaborative Assistive Platform** that enables educators, caregivers, and family members to customize the app for each user. This platform allows users to create and share tailored learning activities, including home automation functions, promoting autonomy in both learning and daily life. Stored on a Firebase database, applications are easily accessible and shared as JSON files, ensuring that users can modify and expand upon existing content.

An essential component of NJOY is its integration with a **home automation system**, which empowers students to interact with and control their environment. Using a Raspberry Pi and 433 MHz RF transceiver, students can operate household devices compatible with the X10 RF protocol. This setup allows control over everyday devices such as lights, televisions, and radios, fostering independence in home settings. By connecting learning with real-world applications, NJOY extends beyond academic contexts, supporting practical life skills.

NJOY's adaptability was particularly showcased during testing with a 16-year-old student with Pelizaeus-Merzbacher disease, a condition that significantly impairs motor, cognitive, and visual functions. During testing, the joystick was optimized with an "always-next" navigation function to support the student's motor limitations, allowing them to interact meaningfully with the system. Continuous observation enabled the researchers to tailor the interface further, adapting settings to maximize ease of use and increase the student's engagement with educational activities.

Through these iterative design and testing processes, NJOY has demonstrated its ability to enhance learning and engagement for students with severe disabilities. The platform's multimodal feedback—combining visual, auditory, and haptic cues—ensures that it meets the diverse needs of its users, making NJOY a comprehensive educational tool that adapts to each user's unique requirements.

#### 3.7.4 Conclusion

NJOY represents the transformative potential of assistive technology in education by creating a multimodal, adaptable platform that empowers students with severe disabilities to engage meaningfully with educational and daily activities. Its collaborative customization features and integration with home automation extend NJOY's usability beyond the classroom, positioning it as a versatile tool that fosters both independence and learning. NJOY continues to refine its approach based on feedback from testing, aiming to support an even broader range of disabilities and user needs.

### 3.8 The Inclusive Working Group at the Faculty of Business, University of Huelva

Author: Alfonso Infante Moro

Department Name: Faculty of Economics and Tourism

Institution/University Name: University of Huelva

City and Country: Huelva, Spain

Email: [alfonso.infante@uhu.es](mailto:alfonso.infante@uhu.es)

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	●
	Inclusive Digital Pedagogy & Supportive Culture	
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	●
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	●
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	
	Inclusive Digital Resources	
	Personalized and Engaging Digital Learning	

6. Pedagogy: Implementation in the classroom	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	●
9. Other		

### 3.8.1 Abstract

The Faculty of Business at the University of Huelva has established a comprehensive approach to digital accessibility through the creation of an Inclusive Working Group. Led by Professor Alfonso Infante, this group emphasizes the necessity of inclusive digital resources to support students with specific educational needs. The initiative highlights the university's commitment to accessible education and compliance with Spanish regulations on disability inclusion. By incorporating accessible digital tools, mental health support, and ongoing professional training, the working group is developing an inclusive educational environment to meet the needs of all students in the digital age.

### 3.8.2 Context

The **Inclusive Working Group** was founded to uphold Spain's legal framework on inclusive education, especially as outlined in the *Real Decreto Legislativo 1/2013, de 29 de noviembre, por el que se aprueba el Texto Refundido de la Ley General de derechos de las personas con discapacidad y de su inclusión social*. This legislation requires universities to remove barriers that restrict access for students with disabilities. In alignment with this mandate, the Faculty of Business established the Inclusive Working Group to coordinate inclusive practices and maintain a supportive learning environment. The group includes a diverse mix of faculty members, administrative staff, and mental health and educational psychology specialists, collaborating to foster best practices in inclusive digital education.

This working group's purpose extends beyond mere compliance; it embodies the faculty's dedication to proactively addressing students' unique needs. The university's inclusive approach is designed to provide all students, including those with disabilities, the necessary resources for digital accessibility and personalized support.

### 3.8.3 Description of the Practice

The **Inclusive Working Group** serves as a comprehensive support unit for inclusive digital education within the Faculty of Business, working to ensure that accessibility standards are met at every level of study. Among the group's most impactful implementations is the use of synchronous subtitles in online classes, which provides real-time captioning. This feature significantly aids students with hearing impairments, while also supporting other students who benefit from visual reinforcements. By integrating such digital tools, the faculty creates a more inclusive and interactive learning experience for all participants.

To maintain and refine digital inclusivity practices, the Inclusive Working Group has developed internal protocols covering various aspects of accessibility. Group members engage in continuous professional development, including training on the latest digital accessibility technologies and inclusive education practices. This commitment to training ensures the group's initiatives remain in step with national standards and enables the team to actively contribute to research projects, conferences, and other collaborative efforts focused on diversity and inclusion.

The group's support extends beyond classrooms to include personalized access to digital materials available through the Faculty Library. For students requiring specific adjustments, this personalized access to adapted resources allows for a flexible pace of study. Additionally, administrative staff are available to provide direct assistance with accessing specialized equipment or learning materials, further enhancing the support available to each student.

The Inclusive Working Group also collaborates closely with mental health professionals, recognizing that mental well-being is crucial for academic success. Through these partnerships, the group has established a mental health protocol that offers tailored guidance to students facing additional challenges. This protocol includes personalized assistance during exams and other assessments, ensuring that students receive the accommodations they need to demonstrate their knowledge fairly.

In advocating for an inclusive academic culture, the group regularly organizes and participates in conferences and training sessions to spread awareness of digital accessibility best practices. Faculty members are encouraged to attend these sessions to stay informed on evolving practices and technologies. This holistic approach strengthens the group's ability to create an inclusive academic environment that not only meets the needs of students with disabilities but fosters a culture of collaboration and accessibility.

### 3.8.4 Conclusion

The **Inclusive Working Group at the Faculty of Business, University of Huelva** exemplifies how digital accessibility and student support can be harmoniously integrated to create an inclusive and welcoming educational environment. By focusing on accessible digital tools, mental health support, and continuous professional development, the faculty ensures that each student is equipped with the resources they need to succeed. This model aligns with Spain's



inclusivity regulations and sets a benchmark for accessible education in higher education, reflecting the university's commitment to fostering an equitable academic community.

### 3.9 Inclusive Learning Platforms at the Faculty of Education, University of Huelva

Author: Fernando David Rubio Alcalá

Department Name: Faculty of Education

Institution/University Name: University Of Huelva

City and Country: Huelva, Spain

Email: fernando.rubio@dfing.uhu.es

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	●
	Inclusive Digital Pedagogy & Supportive Culture	
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	●
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	●
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	●
	Inclusive Digital Resources	●
	Personalized and Engaging Digital Learning	

6. Pedagogy: Implementation in the classroom	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	●
9. Other		

### 3.9.1 Abstract

The **Inclusive Learning Platforms** initiative by the New Education Group at the University of Huelva's Faculty of Education champions blended learning to make education accessible and inclusive for students with varied needs, including those with disabilities. Leveraging the Moodle platform, this project integrates face-to-face and online teaching methods to create an adaptable environment that supports diverse learning needs. The project aims to foster equitable educational access, ultimately reaching over 360 students and several faculty members across multiple disciplines.

### 3.9.2 Context

Located in the Faculty of Education at the University of Huelva, the Inclusive Learning Platforms initiative supports the institution's commitment to accessible education, stemming from its roots as a teacher training facility. Embracing Moodle, an open-source learning management system, this project customizes features to meet accessibility standards, thereby accommodating students from diverse linguistic and cultural backgrounds. Moodle's flexibility allows for the integration of various digital tools and resources that provide international students with adaptable content, fostering a supportive environment for global learning.

### 3.9.3 Description of the Practice

The project utilizes a **blended learning model** where face-to-face instruction complements online interaction via Moodle, ensuring that students with different abilities and learning preferences can fully participate in academic life. This platform has been adapted to follow Web Content Accessibility Guidelines (WCAG), with specific features like screen readers, speech-to-text tools, and alternative input methods to aid students with visual and auditory



challenges. By offering content in multiple formats—text, audio, video, and interactive media—the platform empowers students to choose how they interact with material based on individual needs.

Additionally, Moodle’s design supports both synchronous and asynchronous learning. Real-time sessions enable immediate interaction, while recorded lectures and other materials provide students the flexibility to study independently. Interactive features such as quizzes, forums, and collaborative projects further encourage student engagement and facilitate an active learning environment.

The project incorporates **adaptive learning technologies** driven by artificial intelligence to tailor content and assessments, adjusting based on each student’s progress and capabilities. This personalization ensures that students receive support aligned with their unique educational journeys. Moodle’s user interface is also customizable, allowing students to adjust text size, colour contrast, and layout for improved usability and comfort.

The Faculty of Education prioritizes **multilingual support** to accommodate its diverse student body, particularly the numerous international students. Course materials and communication tools are available in multiple languages, with culturally relevant content incorporated to reflect the diversity of perspectives within the curriculum. This language support creates a welcoming and inclusive academic environment.

The initiative also emphasizes **social and emotional support** through accessible counselling services, peer support groups, and mindfulness sessions. These resources are integral to students’ holistic well-being, and they enhance academic success by reducing stress and promoting a balanced lifestyle. Faculty members regularly participate in training on inclusive practices and digital tool integration, equipping them to address the varying needs of their students effectively.

#### 3.9.4 Conclusion

The New Education Group at the Faculty of Education, University of Huelva, demonstrates a successful integration of blended learning and inclusive digital practices, creating a flexible, accessible, and supportive learning environment. Through adaptive technology, multilingual content, and a commitment to social and emotional support, the initiative ensures that all students have the resources needed to succeed. By combining digital accessibility with inclusive pedagogy, this practice serves as a benchmark for equitable education in higher education.

### 3.10 Digital Inclusive Project of the University of Huelva

Author: Jose Luis Leandro Rodriguez

Department Name: ETS. Engineering. Mining Department

Institution/University Name: University of Huelva

City and Country: Huelva, Spain

Email: joseluisleandro@epsi.uhu.es

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	●
	Inclusive Digital Pedagogy & Supportive Culture	
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	●
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	
	Inclusive Digital Resources	●
	Personalized and Engaging Digital Learning	

6. Pedagogy: Implementation in the classroom	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	●
9. Other		

### 3.10.1 Abstract

The **Digital Inclusive Project of the University of Huelva** aims to enhance accessibility and streamline support for students, particularly those from vulnerable groups, by implementing a centralized digital tool, CLICA UHU. This initiative provides students with easy access to university resources, reducing in-person interactions and ensuring inclusivity through two main portals for handling administrative processes and personalized support requests. CLICA UHU aligns with the university's long-standing commitment to inclusive digital practices and supports Spain's regulations on accessibility in higher education.

### 3.10.2 Context

The University of Huelva has progressively integrated digital accessibility to accommodate students with specific needs, especially within its Engineering Department, where early initiatives included accessible resources in Braille, audiobooks, and subtitled videos for visually and hearing-impaired students. Developed in response to these evolving needs, CLICA UHU provides an efficient, transparent support system that allows students to access resources online, reducing the need for in-person visits. This development reflects the broader inclusive strategy of the university, which is committed to ensuring that digital resources support all learners equitably.

The project builds on Spain's *Ley General de Derechos de las Personas con Discapacidad y de su Inclusión Social*, a legal mandate for removing access barriers for students with disabilities. By providing compatibility with assistive technologies, including screen readers and screen magnifiers, CLICA UHU aligns with this mandate, ensuring that digital tools are accessible and cater to diverse learning needs.

### 3.10.3 Description of the Practice

**CLICA UHU** functions through two primary components: the Procedures Portal and the Requests Portal. **The Procedures Portal** consolidates administrative tasks into a single online space, making it easy for students to access academic records, enrol in courses, and manage their university-related requests. This portal provides students with a seamless and accessible means of managing various tasks without needing to be on campus, fostering independence and reducing reliance on physical campus offices.

**The Requests Portal** enables students to submit personalized requests for support, with each submission assigned to a dedicated staff member for follow-up. This system includes real-time email updates, keeping students informed about the progress of their requests and providing a clear line of communication with university personnel. By offering tailored assistance, the portal ensures that each student's needs are met promptly and transparently, reflecting the university's commitment to individual support.

In addition to CLICA UHU, the Digital Inclusive Project has expanded its scope to incorporate El Atal, a digital literacy initiative developed in collaboration with the Red Cross. This extension provides digital skills training for older adults, demonstrating the university's commitment to community outreach and lifelong learning. By addressing digital literacy gaps across age groups, this initiative represents the institution's dedication to broader inclusivity and digital engagement in the region.

CLICA UHU's accessibility extends to students with disabilities by offering content in multiple formats such as Braille, audio, and subtitled videos. The platform's compatibility with assistive technology ensures that visually and hearing-impaired students can easily navigate university resources. Through these inclusive features, CLICA UHU fosters an academic environment where all students can access resources equitably, enhancing their educational experience and supporting academic success.

The Digital Inclusive Project of the University of Huelva demonstrates the impact of accessible digital solutions in higher education by providing students with an efficient and inclusive support system. With CLICA UHU, the university has set a benchmark for digital inclusivity, aligning with national accessibility standards and fostering a learning environment where each student's needs are met. This initiative serves as a model for how digital tools can enhance access to education, streamline university procedures, and promote **inclusivity in academic institutions**.

### 3.10.4 Conclusion

The **Digital Inclusive Project of the University of Huelva** demonstrates the impact of accessible digital solutions in higher education by providing students with an efficient and inclusive support system. With CLICA UHU, the university has set a benchmark for digital inclusivity, aligning with national accessibility standards and fostering a learning environment where each student's needs are met. This initiative serves as a model for how digital tools can enhance access to education, streamline university procedures, and promote **inclusivity in academic institutions**.

### 3.11 DigitALL: Inclusive Resources for Online Learning

Author: Maria Jose Paolini and Dr. Patricia Covarrubia

Department Name: English Teacher and IELTS Trainer and Law lecturer

Institution/University Name: T.E.S.T. The English School of Turin and Buckingham University

City and Country: Turin, Italy and Buckingham, United Kingdom

Email: maria.pc\_95@hotmail.com

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	
	Inclusive Digital Pedagogy & Supportive Culture	
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	●
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	●
	Inclusive Digital Resources	●
	Personalized and Engaging Digital Learning	●

6. Pedagogy: Implementation in the classroom	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	●
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	
9. Other		

### 3.11.1 Abstract

The **DigitALL** project equips teachers with inclusive digital resources tailored for online learning, providing tools and training to address the diverse needs of students, particularly those with specific learning requirements. Developed as a response to the challenges posed by online education during the COVID-19 pandemic, the project is centred on creating accessible, adaptable digital content that supports students with disabilities and other unique needs. DigitALL offers a range of resources, from adaptation guides and multimedia tutorials to checklists for creating inclusive content, ensuring that online learning environments cater to a wide array of educational demands.

### 3.11.2 Context

The **English School of Turin (T.E.S.T.)** has long prioritized digital accessibility, incorporating adaptable teaching materials into its curriculum. When the pandemic underscored the necessity for inclusive online education, DigitALL emerged to meet this need, partnering with Buckingham University to strengthen its reach. Teachers at both institutions participate in annual training programs focused on the latest inclusive practices, allowing them to continually integrate new methodologies and tools that enhance digital accessibility and inclusivity for all students.

With an emphasis on providing inclusive support in online environments, the project serves a broad audience, ensuring that students with learning differences, disabilities, or limited digital literacy receive the assistance needed to thrive academically.

### 3.11.3 Description of the Practice

The **DigitALL** project comprises a suite of digital resources designed to guide teachers in creating an inclusive online classroom. Central to this initiative is a **Digital Adaptation Guide**, which outlines strategies to accommodate

students with diverse learning needs. This guide provides educators with actionable advice on modifying digital content to address common learning barriers faced by students with disabilities, such as visual, auditory, and cognitive impairments.

Alongside the guide, DigitALL includes **Practical Adaptation Sheets** tailored for various types of content, including written, multimedia, and instructional materials. These sheets offer step-by-step guidance for adapting educational resources, making them more accessible to all learners. Each sheet tackles specific challenges, providing solutions that educators can apply to their lessons to foster a supportive and engaging digital learning environment.

A **Toolbox** of 50 presentation cards supplements the project's resources, detailing different digital tools and applications suitable for inclusive learning. Each card provides an overview of a tool's educational applications, accessibility features, and practical tips, empowering teachers to select tools that best meet the needs of their students. DigitALL also offers a series of **Video Tutorials**, demonstrating the use of these tools in creating accessible content. These short, instructional videos provide visual guidance, making it easier for teachers to apply inclusive practices in their classrooms.

The project's **Adaptation Checklists** address specific educational needs such as dyslexia, dysgraphia, ADHD, and visual and hearing impairments. These checklists provide a structured approach to creating accessible content, ensuring teachers consider essential adaptations for each unique need. To enhance the effectiveness of these resources, DigitALL includes **Training Worksheets** that enable educators to practice these inclusive methodologies, reinforcing best practices in accessible online education.

All resources developed through DigitALL are available in six languages, making them accessible to educators across Europe. By empowering teachers to create inclusive content, the project aligns with the European Commission's Digital Education Action Plan, promoting high-quality digital education that caters to the diverse needs of students.

#### 3.11.4 Conclusion

The DigitALL project has provided teachers with valuable tools for fostering inclusivity in digital education, offering practical guidance for adapting online materials to meet students' diverse needs. With resources like checklists and video tutorials, DigitALL promotes digital competence among educators, ensuring that online education is accessible to all students. This initiative aligns with European guidelines on digital competence, setting a standard for inclusive digital education practices.

### 3.12 EcoDigi: Promoting Eco-Friendly Digital Transformation in Adult Education

Author: Giorgia Suriano

Department Name: Educator and Communication Assistant

Institution/University Name: I.T.C. Sommelier

City and Country: Turin, Italy

Email: giorgiasuriano3@gmail.com

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	
	Inclusive Digital Pedagogy & Supportive Culture	
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	●
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	●
	Inclusive Digital Resources	
	Personalized and Engaging Digital Learning	●



6. Pedagogy: Implementation in the classroom	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	●
9. Other		

### 3.12.1 Abstract

The **EcoDigi** initiative advances the digital transformation of adult education through sustainable and inclusive practices. Developed by I.T.C. Sommeiller, one of Italy's oldest educational institutions, EcoDigi empowers educators to adopt eco-friendly digital tools that ensure accessibility for learners with diverse needs, including disabilities. This initiative provides resources like self-assessment tools, teaching guidelines, and training webinars, enabling educators to create inclusive learning environments that align with both environmental and social sustainability.

### 3.12.2 Context

The project at I.T.C. Sommeiller began in response to the digital acceleration brought on by the COVID-19 pandemic, where the need for remote learning intersected with increased digital readiness demands for adult learners. Starting in the 2018/2019 academic year, the institution integrated Google Workspace for Education to support a secure, collaborative, and inclusive digital learning environment. Building on this foundation, EcoDigi emerged as an initiative focused on the intersection of digital inclusion and sustainability, addressing the specific needs of adult learners who may face barriers in digital environments, including individuals with disabilities or special needs.

### 3.12.3 Description of the Practice

EcoDigi provides adult educators with a toolkit of resources that supports a shift towards sustainable and inclusive digital practices. Central to this approach is a **Self-Assessment Tool** that allows educators to evaluate the accessibility and ecological impact of their digital teaching practices. The self-assessment process identifies areas where practices can be improved, offering insights and recommendations for implementing greener and more inclusive methods. This tool has proven instrumental in helping educators align their teaching with both sustainability goals and inclusivity standards.

Supporting this assessment, EcoDigi offers comprehensive **Guidelines and Training Materials**. These guides include multilingual resources accessible via an online platform, making them available across cultural and linguistic contexts. By providing information on eco-friendly digital approaches, EcoDigi assists educators in integrating sustainable practices into everyday teaching. The materials outline methods for reducing environmental impact while simultaneously ensuring that digital tools are accessible to all students, regardless of physical or cognitive limitations.

The project also focuses on **Building Capacity Among Educators** through specialized training. EcoDigi established a network of “master trainers” across partner countries, who lead workshops and webinars for educators and educational stakeholders. This training approach encourages cross-border knowledge-sharing, allowing educators to exchange best practices for sustainable and accessible digital learning. EcoDigi’s six webinars, attended by over 120 educators and stakeholders, have become a critical platform for fostering knowledge on digital resilience and sustainability.

To support ongoing collaboration, EcoDigi launched a **Collaborative Online Platform**, where educators access a repository of case studies, best practices, and additional resources that reinforce both environmental and accessibility goals. This platform facilitates networking and collaboration across EU countries, enabling educators to adopt and adapt eco-conscious practices in their classrooms. The platform also involves various stakeholders—such as occupational therapists, social workers, and NGOs—creating a holistic, community-centred approach to inclusive and sustainable digital education.

#### 3.12.4 Conclusion

EcoDigi is a model for sustainable digital transformation in adult education, offering tools, training, and collaborative resources to support environmentally conscious and inclusive practices. The project exemplifies how digital education in adult learning can address sustainability and inclusivity simultaneously, paving the way for a resilient and accessible educational ecosystem across Europe. EcoDigi’s commitment to a green digital future sets a benchmark for other institutions aiming to balance environmental responsibility with inclusive digital accessibility.

### 3.13 EU Digital Framework for Sign Language (EUDFSL): Advancing Digital Skills for the Deaf Community

Authors: Silvia Doratiotto and Simona Biani

Department Name: Communication Assistant at Unito and Interpreter and Assistant at Unito

Institution/University Name: University of Turin

City and Country: Turin, Italy

Email: cooperation@istitutosorditorino.org

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	
	Inclusive Digital Pedagogy & Supportive Culture	
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	●
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	●
	Inclusive Digital Resources	
	Personalized and Engaging Digital Learning	●

6. Pedagogy: Implementation in the classroom	Inclusive Classroom Collaboration and Respectful Environment  Enhanced Pedagogical Digital Inclusiveness
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices  Digital Feedback and Self-Reflection  Data-Driven Improvement for Inclusive Digital Learning
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development
9. Other	

### 3.13.1 Abstract

The **EU Digital Framework for Sign Language (EUDFSL)** project addresses a critical gap in digital literacy for deaf and hard-of-hearing individuals by developing a comprehensive, multilingual sign language glossary tailored to ICT and digital fields. This project, initiated by the University of Turin, seeks to bridge the communication gap in the digital job market by providing an e-learning platform with over 500 specialized signs in international sign language. EUDFSL's objective is to enhance the employability and digital competencies of deaf individuals, thus fostering inclusion and equity within professional settings that increasingly rely on digital expertise.

### 3.13.2 Context

The University of Turin, with its long-standing commitment to inclusivity and social responsibility, recognized the significant barriers deaf individuals face in accessing digital resources and ICT-related educational content. To address these obstacles, the university launched EUDFSL, a project designed to align with its vision of promoting accessibility and fostering digital skills among deaf and hard-of-hearing students and professionals. This initiative also reflects a broader European commitment to social inclusion and sustainability, aiming to empower deaf individuals with the competencies necessary to thrive in the digital economy.

### 3.13.3 Description of the Practice

The EUDFSL project is structured around three core components, each addressing a different facet of digital accessibility for the deaf community. At its core is a **Comprehensive Language Framework** specifically developed for ICT terminology. This framework includes over 500 essential terms in international sign language, covering vital digital domains such as computer science, artificial intelligence, and audiovisual production. Through this structured

terminology, EUDFSL enables deaf learners and professionals to access and understand specialized vocabulary that is fundamental to ICT fields, making educational and occupational content more approachable.

Another key element of EUDFSL is its **E-Learning Platform with E-Glossary**, which provides an interactive learning space for deaf users. Organized into five subdomains—Computer Science, Cloud Networking, Internet of Things (IoT), Artificial Intelligence (AI), and Audiovisual Production—the platform allows students and educators alike to access sign language explanations for complex digital concepts. This platform serves as an inclusive educational tool, removing barriers for those who might otherwise struggle with traditional text-based explanations.

The project also includes a **Guidelines for Inclusive Employment Practices** document. This white paper provides employers with recommendations on creating accessible work environments, specifically addressing the needs of deaf employees within ICT sectors. By promoting inclusive language use and tailored digital skills training, these guidelines support companies in accommodating deaf workers and highlight the importance of accessibility within the workforce.

Additionally, EUDFSL incorporates a **Microlearning Approach** to facilitate gradual learning, where content is divided into manageable units, making it easier for users to build vocabulary over time. This approach is particularly effective for technical vocabulary acquisition, allowing learners to strengthen their digital skills without feeling overwhelmed by extensive information at once.

Designed for flexibility, the EUDFSL platform also serves as a valuable tool for interpreters, educators, and communication assistants who work directly with deaf individuals in ICT fields. These professionals can use the glossary to prepare for classes, ensuring that terminology is consistently communicated to students. By doing so, EUDFSL not only improves educational accessibility but also enhances the quality and inclusivity of classroom interactions.

#### 3.13.4 Conclusion

The EU Digital Framework for Sign Language is a vital resource for promoting digital literacy and job readiness within the deaf community. By offering an e-glossary of ICT terms and providing a framework for inclusive employment, EUDFSL empowers deaf individuals to participate more fully in the digital economy. This initiative highlights the University of Turin's dedication to inclusivity and innovation, setting a benchmark for accessible digital education across Europe.

### 3.14 Free Technology Signs (FTS): Empowering Deaf Job Seekers with Digital Skills

Author: Joanna Kinberger

Department Name: /

Institution/University Name: equalizent Schulungs- und Beratungs GmbH

City and Country: Vienna, Austria

Email: joanna.kinberger@equalizent.wien

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	
	Inclusive Digital Pedagogy & Supportive Culture	
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	●
	Accessible Devices for Inclusive Teaching and Learning	●
	Digital Accessibility Support for Inclusive Learning	●
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	
	Inclusive Digital Teaching Practices	●

5. Pedagogy: Supports and Resources	Inclusive Digital Resources	●
6. Pedagogy: Implementation in the classroom	Personalized and Engaging Digital Learning	
	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	●
9. Other		

### 3.14.1 Abstract

The **Free Technology Signs (FTS)** project provides bilingual digital resources aimed at equipping deaf job seekers with essential digital skills. Addressing barriers in education and employment, FTS offers resources in both sign and written languages. The program covers practical digital topics, including online research, video production, social media, and internet security, enhancing deaf learners' employability and digital literacy. FTS promotes lifelong learning and resilience, helping job seekers become competitive and inclusive in the digital economy.

### 3.14.2 Context

Since its establishment in 2004, equalizent Schulungs- und Beratungs GmbH has focused on supporting deaf, hard-of-hearing, and other learners facing educational barriers, especially in Austria's digital-first education landscape. Recognizing the unique digital literacy challenges deaf individuals face, FTS aims to close the digital skills gap by providing bilingual learning materials tailored to the deaf community's specific needs. The program reflects a commitment to inclusivity by offering accessible resources that help deaf learners navigate the job market more effectively.

### 3.14.3 Description of the Practice

FTS is a comprehensive program tailored to deaf job seekers, providing a range of resources that cover critical digital skills. Its development involved extensive consultation with the deaf community to ensure the materials were accessible, relevant, and easy to use. The program's core resources include video tutorials, independent learning

modules, and lifelong learning support, all available in both sign and written languages to bridge communication gaps.

**Video Tutorials and Training Materials** form the backbone of the FTS program, offering step-by-step guidance across various digital skills. These tutorials, provided in sign language with accompanying text, cover topics from creating presentations to effective social media use. By ensuring content is bilingual, FTS enables learners to gain confidence and master digital competencies at their own pace, fostering a sense of independence in their learning journey.

In addition to tutorials, **Independent Learning Modules** encourage autonomous skill-building, supporting learners in acquiring competencies that match job market requirements. Topics range from understanding internet security basics to producing engaging online content, skills that are critical in today's digital workspaces. These modules are designed to be self-paced, allowing deaf job seekers to develop their skills flexibly.

Furthermore, FTS promotes **Lifelong Learning** by equipping deaf learners with tools that encourage continuous education and skill enhancement. This approach helps reduce risks of social exclusion, promoting mental well-being and community engagement. By fostering an accessible and inclusive learning environment, FTS provides deaf individuals with ongoing educational support that extends beyond initial job preparation.

One significant aspect of FTS is its response to the unique challenges deaf individuals encounter with written language. By providing bilingual resources, the program helps learners build the digital literacy they need to engage confidently with digital content, while also creating an environment where they can master written communication skills at their own pace.

#### 3.14.4 Conclusion

The Free Technology Signs (FTS) project significantly enhances the employability of deaf individuals by offering accessible digital resources that address key areas of digital literacy. FTS demonstrates how targeted, community-informed resources can break down educational and employment barriers, setting a new standard for inclusivity in digital education. By empowering deaf job seekers with the skills necessary to thrive in the digital economy, FTS contributes meaningfully to an inclusive workforce and exemplifies best practices in accessible digital education.



### 3.15 INTUX - Introducing training on user Testing with people with disabilities into UX design and related higher education program

Authors: Boštjan Šumak, Maja Pušnik and Katja Kous

Department Name: Faculty of Electrical Engineering and Computer Science

Institution/University Name: University of Maribor

City and Country: Maribor, Slovenia

Email: [bostjan.sumak@uni-mb.si](mailto:bostjan.sumak@uni-mb.si), [maja.pusnik@uni-mb.si](mailto:maja.pusnik@uni-mb.si), [katja.kous@uni-mb.si](mailto:katja.kous@uni-mb.si)

Inclusion factors addressed:

Category	Factors	Factors addressed
1. Leadership/ School's perspective	Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education	●
	Inclusive Digital Pedagogy & Supportive Culture	
	Professional Development for Inclusive Digital Education	
2. Collaboration and Networking	Collaborative Evaluation and Planning for Inclusive Digital Teaching	
	Shared Vision and Collaborative Culture for Inclusive Digital Education	
	Collaborative Engagement for Inclusive Digital Partnerships	
3. Infrastructure and Equipment/ Tools and Technology	Accessible Infrastructure for Inclusive Learning	●
	Accessible Devices for Inclusive Teaching and Learning	
	Digital Accessibility Support for Inclusive Learning	
	Inclusion and Equity in Digital Learning	
4. Continuous Professional Development	Continuous Professional Development for Inclusive Digital Teaching	●
5. Pedagogy: Supports and Resources	Inclusive Digital Teaching Practices	●
	Inclusive Digital Resources	

6. Pedagogy: Implementation in the classroom	Personalized and Engaging Digital Learning	●
	Inclusive Classroom Collaboration and Respectful Environment	
	Enhanced Pedagogical Digital Inclusiveness	
7. Assessment Practices/ Inclusion Assessment	Inclusive Digital Assessment Practices	
	Digital Feedback and Self-Reflection	
	Data-Driven Improvement for Inclusive Digital Learning	
8. Student Digital Competence/ Student's Perspective	Inclusive Digital Communication and Skills Development	●
9. Other		

### 3.15.1 Abstract

The **INTUX** project introduces a structured framework for inclusive UX design in higher education, emphasizing accessible user testing with participants who have disabilities. Developed collaboratively across multiple European institutions, INTUX combines workshops, training, and user-testing methodologies to create digital tools and platforms that are accessible for all. This initiative directly involves individuals with disabilities in testing processes, ensuring digital products cater to diverse user needs and setting a new standard for accessible design education.

### 3.15.2 Context

As digital platforms become essential in educational settings, the INTUX project addresses a growing need for accessible user-centered design in higher education. Recognizing that people with disabilities often encounter barriers in digital environments, INTUX brings together educators, usability experts, and students to embed inclusive user experience (UX) principles in digital design programs. Workshops were conducted in Spain, Latvia, and Slovenia with over 50 participants, including academic staff, students, and users with disabilities, to refine inclusive UX testing practices. This collaborative setup promotes awareness and skill-building in inclusive design across institutions.

### 3.15.3 Description of the Practice

The INTUX framework for UX testing is structured to ensure accessibility at every stage of the user-testing process. Before testing begins, participants receive comprehensive training to familiarize them with the testing protocols and assistive tools, like screen readers and alternative input devices, to reduce stress and enhance accessibility. By actively involving individuals with disabilities in the co-creation of testing protocols, INTUX fosters an inclusive environment where users can confidently participate and contribute.

During the testing process, INTUX prioritizes flexibility and comfort for participants. Options are provided for home-based testing, allowing users to engage in a familiar setting, and participants may choose to use personal assistive devices or equipment provided by the testing team. Professional support is readily available, ensuring that participants can engage fully without concern for technical challenges. Additionally, the project incorporates flexible timing and break options to reduce fatigue, allowing participants to complete tasks at their own pace.

Post-testing, the project recognizes participant contributions through certificates or compensation, highlighting a respectful and inclusive approach. INTUX also provides transportation and additional support for participants who need assistance returning home, underscoring the project's commitment to their well-being. This participant-centered approach not only enhances the quality of UX design but also validates the experiences and needs of people with disabilities in the digital realm.

Through rigorous testing phases across varied contexts and a structured yet adaptable framework, INTUX demonstrates how higher education institutions can incorporate accessible UX testing into digital design curricula. This model of co-created, flexible, and supportive testing ensures that future digital tools are both accessible and user-friendly, setting a benchmark for inclusive digital education practices.

#### **3.15.4 Conclusion**

The INTUX project exemplifies a comprehensive approach to accessible UX design in higher education, advancing inclusivity through structured, participant-centered testing methodologies. By directly engaging people with disabilities in the design and testing processes, INTUX not only promotes accessibility in digital education but also enriches the learning experience for design students. This inclusive framework serves as a model for higher education institutions committed to developing digital tools that meet diverse user needs.

## 4 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 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 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.

## 5 Appendix

### 5.1 Call for good practices

ERASMUS+ SET4Inclusion: Self-Evaluation Tools for e-Inclusion in HEI

# Call for good practices in Inclusive Digital Education (HEI focused)

The digitization of education holds immense potential to enhance student learning outcomes. However, it also brings forth significant challenges, particularly for students with disabilities or special needs. These students face the risk of falling behind if their diverse learning requirements are not adequately addressed in digital education. As our student population becomes increasingly diverse, it is crucial to ensure that digital education remains inclusive.

The SET4Inclusion project recognizes this importance and aims to enhance the inclusive digital capabilities within higher education. By doing so, it strives to create an environment where every learner feels valued and included, regardless of their abilities or special needs. The project activities include developing self-evaluation tools for higher education management and teachers, creating microlearning units on inclusive digital education, compiling a collection of best practices, and developing an e-learning platform dedicated to inclusive digital education.

An important part of the project is a collection of good practices in inclusive digital education, which will serve as inspiration for HE institutions and teachers on how to implement inclusion in their organisations or in their work as teachers.

For this purpose, we invite everyone with good practices in inclusive digital education to share their insights with us and other interested parties. Good practice can relate to different areas of inclusion in digital education. For example they can relate to:

- Leadership/ School's perspective
- Collaboration and Networking
- Infrastructure and Equipment/ Tools and Technology
- Continuous Professional Development

- Pedagogy: Supports and Resources
- Pedagogy: Implementation in the classroom
- Assessment Practices/ Inclusion Assessment
- Student Digital Competence/ Student's Perspective
- Other areas

The following questions should be addressed:

- Do you prioritize inclusion in digital learning at your school or in your classroom?
- Do you anticipate students' differences in your digital teaching strategy?
- Do you consider your practice to be a good practice and are you willing to share your practice with a SET4Inclusion team?

Please apply to our call, the selected good practices will be published in our Collection of good practices and will be promoted at the [DIGIN 2024, Digital Inclusion In Information Society conference](#), which will take place on 9th of October 2024 in Ljubljana, Slovenia. The authors of the best practices will be invited to co-author a joint-paper on best practices and will have the opportunity to present their practice on the conference (in person or online).

Good practice need to be described on a provided [template](#) and need to be sent to the email [set4inclusion@gmail.com](mailto:set4inclusion@gmail.com) until 30th of June 2024. Each entry will be carefully reviewed and evaluated by the SET4Inclusion team and the authors of the selected good practices to be published in Collection of the good practices will be notified by 15th of July 2024. Authors of the selected best practices will also be invited to co-author a joint-paper for the DIGIN conference. In short:

Good Practice submission: 30th/June/2024

Author notification: 15th/July/2024

For more information about the project, please visit our website: <https://set4inclusion.eu/>.

SET4Inclusion team

## 5.2 Template for description of good practice

# Template for description of the good practice

### BASIC INFO

Author:

Department Name:

Institution/University Name:

City and Country:

Email:

### SHORT ABSTRACT OF THE PRACTICE

### CONTEXT

Describe the context related to school (digital school vision/strategy, school inclusion vision/strategy, technology availability, digital education experience...):

Describe the context related to teacher (experience, education, subject, digital education experience...):

### DESCRIPTION OF THE PRACTICE

Name of the practice:

Inclusion areas (tick all the boxes that apply):

- Leadership/ School's perspective
- Collaboration and Networking
- Infrastructure and Equipment/ Tools and Technology
- Continuous Professional Development
- Pedagogy: Supports and Resources
- Pedagogy: Implementation in the classroom

- Assessment Practices/ Inclusion Assessment
- Student Digital Competence/ Student's Perspective
- Other areas:

General information (subject, students characteristics, people involved etc.) :

Detailed description of the practice (narrative, max. 5000 characters ):

Reflection (what was good and not so good, what could be improved etc.):

### SUPPORTING MATERIALS

Add photos or links to photos, videos and other used materials: