Definition of a Framework for Self-Evaluation Tool: Optimizing Evaluation Practices for Enhanced Performance in HEI

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Abstract

This paper proposes a framework for a self-evaluation tool to support the evaluation of inclusive digital education in Higher Education Institutions (HEIs). The idea was motivated by the COVID-19 pandemic, which emphasised inequalities in digital learning, particularly for students with Special Educational Needs and Disabilities (SEND). The enhanced digitalisation of education showed that many students and professionals struggled to engage with online content due to rigid teaching methods and inaccessible resources. By focusing on inclusivity, the proposed framework aims to address these challenges by tackling digital technologies to create adaptive, equitable learning environments for diverse student needs. The framework will support HEIs in evaluating and enhancing their digital education practices, ensuring all students can fully participate and succeed in education.

Keywords

Inclusive Digital Education, Self-Evaluation Tool, Higher Education Institutions, Special Educational Needs and Disabilities

1. Introduction

In the rapidly evolving higher education, integrating Information and Communication Technology (ICT) has become essential for enhancing teaching and learning processes. However, ensuring that digital education is inclusive—particularly for SEND students—remains a significant challenge [4]. This paper addresses the challenges exposed by the COVID-19 pandemic, particularly the accelerated digitalization of teaching and learning in higher education, which has disproportionately disadvantaged SEND students. Recognizing that several students struggle with online education, it is fundamental to promote inclusiveness as a key solution. HEIs aim to create an inclusive digital environment that supports students from the earliest stages of education (from primary school to higher education), helping them reach their full potential. We believe this endeavor would be supported by a self-evaluation tool, providing specific feedback to HEIs and helping increase inclusive digital education capabilities in formal and non-formal settings [1].

Within the scope of Erasmus+ SET4Inclusion project (2023-1-SI01-KA220-HED-000160853) the partners developed a theoretical framework for inclusive digital education to address the HEIs challenges and prepare for a self-evaluation tool. This framework was built upon the well-established TPACK model (Technological Pedagogical Content Knowledge), which guides the integration of ICT in education. TPACK outlines the essential knowledge areas for effectively integrating technology into teaching, such as technological knowledge (focusing on accessibility), pedagogical knowledge (emphasizing Universal Design for Learning - UDL), and content knowledge (innovative applications of new technologies to overcome barriers for SEND students). The TPACK framework also incorporates the latest standards, such as the Web Content Accessibility Guidelines (WCAG 2.2), and insights from contemporary research. Additionally, we aimed to include the SELFIE tool for self-reflection on schools' digital capabilities [2], an evaluation survey promoted by the European Commission, by integrating a stronger focus on inclusivity. Our framework and developed self-evaluation tool aim to identify and describe the key factors and indicators that define inclusive digital education, providing HEIs with an inclusive tool to evaluate and enhance their digital education practices. The development of the framework involved several key tasks:

- A literature review, which included 131 papers and explored existing research, best practices, and the challenges of implementing inclusive digital education (due to the length it is not included in this

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paper, however, it is available as one of the deliverables of SET4Inclusion project.

- Development of two surveys — one targeting HEI staff and another focused on SEND students— to gather insights on their experiences and needs. The surveys were performed with the help of Google Forms and the reports will be available as one of the deliverables of the SET4Inclusion project.
- The co-development workshops involving collaboration with HEIs partners, researchers, and experts. The report is available as one of the deliverables of the SET4Inclusion project.

The results from the listed activities present a foundation for the final framework that will enable HEIs to create and maintain inclusive digital learning environments, ensuring access to education for all students. It is also the foundation for developing self-evaluation tools and other project results, providing a structured basis for institutions to assess and enhance their practices. The main results, for which described framework is necessary, are the following:

- Two Self-evaluation tools for HE institutions and HE teachers to determine the inclusiveness of their digital education,
- A set of micro-learning units on Inclusive digital education for HE leaders and HE teachers,
- Collection of several good practices on Inclusive digital education,
- E-learning platform as a central knowledge point for Inclusive digital education.

2. Definition of the framework

To make digital education and communication in HEIs more accessible and inclusive for all other students, a theoretical framework of inclusive digital education was defined, considering different possible e-learning settings and modes (ICT-supported classroom learning, distance e-learning, hybrid, blended learning, self-paced, guided etc.). A theoretical framework for inclusive digital education was created based on a literature review, survey and workshops, presented in the following sections.

2.1. The literature review

First, a literature review was conducted to (1) identify good practices for inclusive digital education, (2) identify the challenges of inclusive digital education, and (3) identify the factors that affect inclusive digital education. The aim was to identify the relevant literature in journal papers, articles published in conferences, reports, and other relevant sources. The search was conducted in different databases and search engines, such as Scientific databases: WoS, ScienceDirect, IEEExplore, ACM, Google Scholar, Search engines: Google. The included literature was in English, dated from 2017 or newer. One hundred thirty-one literature units were identified and recorded. Based on the results from the literature review, factors that impact inclusive digital education were defined and later validated with the help of a survey.

The literature review provided an idea of levels of inclusiveness within digital education, which are divided into eight categories, further defined by factors and evaluated with indicators on a Likert scale from strongly agree to strongly disagree, presented in the following paragraphs **Error! Reference source not found.**. The categories are the following: (1) Leadership/ School's perspective, (2) Collaboration and Networking, (3) Infrastructure and Equipment/ Tools and Technology, (4) Continuous Professional Development, (5) Pedagogy: Supports and Resources, (6) Pedagogy: Implementation in the classroom, (7) Assessment Practices/ Inclusion Assessment and (8) Student Digital Competence/ Student's Perspective.

Category Leadership/ School's perspective includes the following factors:

- (1.1.) Inclusive digital strategy education strategy
- (1.2.) Collaborative digital strategy development
- (1.3.) Contemporary pedagogical approaches
- (1.4.) Scheduled time to explore digital teaching
- (1.5.) Efforts to minimize discrimination,
- (1.6.) Collaboration and communication encouragement between school and teacher,
- (1.7.) Inclusion policies,
- (1.8.) Digital literacy.

The examples of indicators for each factor are transformed into statements in the self-evaluation tool, connected to the leadership/school's perspective, and are shown in Figure 1. For example, "Inclusive digital strategy would" is evaluated based on an indicator: "At our HEI we have an inclusive digital education strategy". The same principle is applied to all other factors in other categories.

Figure 1: Category Leadership/ School's perspective

Category Collaboration and Networking includes the following factors:
- (2.1.) Progress review,
- (2.2.) Discussion on the use of technology,
- (2.3.) Collaboration of HEI, local communities, caregivers and parents,
- (2.4.) Synergies for Blended Learning,
- (2.5.) Staff, governors, students and parents/careers share a philosophy of inclusion,
- (2.6.) Teachers plan, teach and review in partnership and
- (2.7.) Encouraged collaboration and communication between students and teachers.

Category Infrastructure and Equipment/ Tools and Technology includes the following factors:
- (3.1.) Accessible infrastructure and tools,
- (3.2.) Digital devices and assistive products for teaching,
- (3.3.) Internet Access,
- (3.4.) Technical Support,
- (3.5.) Available digital devices and assistive products for learning,
- (3.6.) Devices and assistive products for students,
- (3.7.) Measures to identify the digital divide,
- (3.8.) Support to address the digital divide,
- (3.9.) Bring your device and assistive products,
- (3.10.) Reduced physical barriers,
- (3.11.) Assistive products,
- (3.12.) Online libraries,
- (3.13) Fairly distributed resources.

Category Continuous Professional Development includes the following factors:
- (4.1.) Discussion of CPD needs,
- (4.2.) Participation in CPD activities,
- (4.3.) Face-to-face or online sharing experiences between staff.

Category Pedagogy: Supports and Resources includes the following factors:
- (5.1.) Online educational resources,
- (5.2.) Creating digital resources,
- (5.3.) Using virtual learning environments,
- (5.4.) Communicating with the school community,
- (5.5.) Open educational resources,
- (5.6.) Staff development activities help staff to respond to student diversity,
- (5.7.) Student difference is used as a resource for teaching and learning and
- (5.8.) Staff develop resources to support learning and participation.

Category Pedagogy: Implementation in the classroom includes the following factors:
- (6.1.) Personalization according to students' needs,
- (6.2.) Fostering students' creativity,
- (6.3.) Engaging and motivating students,
- (6.4.) Student collaboration,

- (6.5.) Everyone is made to feel welcome and treated with respect,
- (6.6.) The partnership between staff and parents/careers,
- (6.7.) Students are equally valued,
- (6.8.) Staff and students treat one another as human beings, and discipline is based on mutual respect,
- (6.9.) The school arranges teaching groups so that all students are valued, and differences are understood,
- (6.10.) Training and education on inclusiveness.

Category Assessment Practices/ Inclusion Assessment includes the following factors:
- (7.1.) Assessing skills,
- (7.2.) Digital assessment,
- (7.3.) Timely feedback,
- (7.4.) Self-reflection on learning,
- (7.5.) Feedback to other students,
- (7.6.) Using data to improve learning,
- (7.7.) Evaluation metrics.

Category Student Digital Competence/ Student's Perspective includes the following factors:
- (8.1.) Learning to communicate and
- (8.2.) Digital skills across subjects.

2.2.   The survey

Two surveys were conducted. The first survey was conducted to acquire empirical evidence about teachers' perceptions of inclusive digital education in their classrooms. The survey was constructed based on the existing literature, where we identified the most significant factors that can affect inclusive digital education (such as Inclusive Digital Strategy and Policy for Empowering Inclusive Digital Education, Inclusive Digital Pedagogy & Supportive Culture and similar). Over 100 survey responses positively rated the proposed framework, with moderate variability. The responses suggest that while many respondents rated the indicators highly, there were diverse opinions among the participants, particularly in areas such as Infrastructure and Technology (IET) and Pedagogy: Implementation in the Classroom (PIC), where variability was slightly higher. These findings highlight areas of strength as perceived by respondents and potential areas for further improvement and targeted interventions. The positive feedback on professional development, collaboration, and digital competence underscores the importance of continuing, supporting and enhancing these aspects within educational institutions. The second survey was conducted to acquire empirical evidence about students' perceptions of inclusive digital education.

Overall, the survey results highlight strong satisfaction with various dimensions of educational practice, particularly in leadership, collaboration, infrastructure, pedagogy, assessment practices, and digital competence. The consistently high median scores and excellent internal consistency across indicators suggest that respondents

perceive these areas positively, reflecting well-implemented practices and supportive educational environments.

2.3. The co-creation workshops

The framework co-creation workshops were designed to refine and validate the framework for inclusive digital education, focusing on finalizing the key factors and indicators. During the ten conducted workshops in various European countries, participants engaged in collaborative discussions to shape the framework's layout, ensuring it accurately reflects the needs and challenges of inclusive digital education. The workshop's outcomes included the creation of validated self-evaluation questionnaires and refining indicators that would later be used for the development of the SET and micro-learning units. These online workshops played a critical role in fine-tuning the variables and indicators that form the foundation of the self-evaluation tool, ensuring they are both relevant and effective for HEIs.

3. Self-evaluation tool based on the framework

A self-evaluation tool [5] was created based on the developed framework, which encompasses key factors and indicators of inclusive digital education. This tool is designed to serve as a practical guide for management and educators within HEIs, enabling them to assess and identify strengths and areas for improvement in their digital education and communication practices related to inclusion. In addition to its evaluative function, integrated with an E-platform, the self-evaluation tool aims to raise awareness about the importance of inclusive digital education among stakeholders. The implementation of these practical tools, along with the provision of free learning opportunities through the E-platform, is expected to contribute significantly to fostering more inclusive digital education environments within HEIs.

The results of the self-evaluation tool are presented in (Figure 2). For each category, suggestions on how to improve inclusion in HEI are provided, which are connected to micro-learning units, one of the additional outputs of the project.
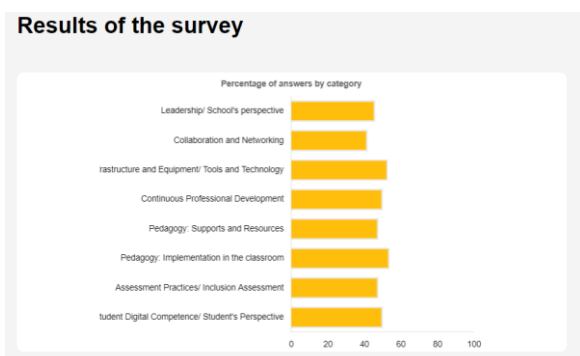

Figure 2. Final results of the self-evaluation tool, based on the framework

4. Conclusion

This paper has established a comprehensive framework for a self-evaluation tool to optimize evaluation practices within HEIs, mainly promoting inclusive digital education. The framework is designed to address the disparities that became evident during the rapid digitalization of education, especially those affecting students with Special Educational Needs and Disabilities. By equipping HEIs with this evaluative tool, the framework seeks to create more equitable and adaptive learning environments that can better accommodate the diverse needs of all students.

The future stages of this work will involve the systematic collection and classification of at least 15 exemplary practices from five partner countries of the project in the domain of inclusive digital education. These practices will be categorized according to the framework's components—self-evaluation tools and e-learning materials—and will be methodically documented using textual and multimedia formats. This iterative process will refine the framework and extend its relevance and effectiveness across various educational settings. Applying this framework is expected to lead to improved learning outcomes, promoting greater inclusivity and equity in higher education.

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