



## Equality of Access to High Quality Digital Resources

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### Abstract

*The United Nations sustainability goals (SDGs) have fostered a growing awareness of what a high-quality digital learning experience should look like [1]. In late 2022 The EU Commission published the final report by the expert group on quality investment in education and training. One of the findings in this report highlights that there is a lack of evidence on the impact of the use of digital tools within schools [2]. Research is badly needed on how digital tools can be used outside of the formal school day to support students to achieve their potential. The requirements of the digital experience have never been higher as students' needs have become more complex [3, 4]. Likewise, students' expectations of any digital experience have been increased because of initiatives such as the Web Accessibility Directive. This Directive requires all public sector websites to strive to create and maintain a more equitable online experience for all users [3]. As the e-publishing model becomes more prevalent in the provision of resources for schools we may expect to see the Web Accessibility Directive influencing the design and development of digital teaching and learning materials [4,5,6]. This article looks at existing international cost-effective strategies, for the inclusion of high-quality digital resources at second-level.*

**Keywords:** Digital Technology, Digital Resources, UN Sustainability Goals

### 1. Introduction

According to the United Nations Sustainable Development Goals (SDGs), a high-quality digital learning experience should encompass the several elements. These goals set out to support all stakeholders involved in education in achieving an experience that is accessible and inclusive to all. The digital learning experience should be accessible to all learners, regardless of their background, abilities, or geographical location and efforts should be made to bridge the digital divide and ensure equal opportunities for education. The content and curriculum of digital learning should be relevant to the learners' needs and reflect the local context, culture, and challenges. Digital learning should also provide some flexibility for learners. The digital learning experience should offer high-quality content and pedagogy.

### 2. What should a high quality digital learning experience look like?

The digital learning experience should support continuous professional development for educators. Teachers should have opportunities to enhance their skills, stay informed in terms of practices, and be able to effectively integrate technology into their teaching. The digital learning experience should be designed with a focus on sustainability, minimizing the environmental impact and should encourage responsible use of resources; this includes the consideration of the lifecycle of devices and infrastructure [2]. If we are to be able to assess the effectiveness and impact of digital learning initiatives we also need adequate monitoring and evaluation mechanisms to help to identify areas of improvement and ensure accountability in achieving desired learning outcomes. By integrating these principles, a high-quality digital learning experience can contribute to achieving the SDGs by promoting inclusive and equitable education, fostering lifelong learning opportunities, and empowering individuals to acquire the knowledge and skills needed for sustainable development.

#### 2.1 Requirements and Student Expectation of the Digital Experience

As students' needs have become more complex, the requirements of the digital learning experience have evolved to meet these challenges. Students have diverse abilities and preferences. The digital learning experience needs to provide customization and personalization options to accommodate these individual needs [7]. This includes adaptive learning platforms that adjust content and pace based on the student's progress, as well as options for choosing different learning pathways or accessing additional support materials.



Students with disabilities or specific learning needs require inclusive digital learning environments. The digital learning experience must meet accessibility standards, such as providing alternative formats for content (e.g., captions, transcripts), compatibility with assistive technologies, and accommodating different sensory and motor abilities. Students from diverse cultural and linguistic backgrounds should also be considered adequately.

It must be noted that a high quality digital learning experience is not based solely on the digital resources. In the last few years we have seen a growing awareness of students' social and emotional well-being and how this is crucial for their overall development and learning [8]. The digital learning experience should provide opportunities for social interaction, collaboration, and peer support and incorporate elements that promote emotional well-being, such as mindfulness exercises, mental health resources, and channels for communication with teachers.

## 2.2 Learning Analytics

Stakeholders across all sectors of education are looking to learning analytics and how digital learning platforms can collect data on students' progress, engagement, and learning patterns. This data can be utilized to provide personalized support and interventions. The digital learning experience for many now includes data analytics tools that help educators identify which digital resources and experiences increase student engagement and help faculty and teachers to identify struggling students, provide timely feedback, and offer targeted interventions to address individual learning gaps. Ongoing feedback from students on which digital resources work best for them can be extremely useful and can inform faculty decisions as to where limited resources (time and money) are spent in the design/redesign and development of high-quality digital resources [9].

## 2.3 Impact of the Web Accessibility Directive

The Web Accessibility Directive, introduced by the European Union, aims to ensure that public sector websites and mobile applications are accessible to people with disabilities. Although the directive specifically targets public sector websites, its impact extends beyond that scope, including the education sector [10]. The implementation of the directive has increased student expectations for their digital experience in education. The Web Accessibility Directive emphasizes the importance of creating inclusive digital environments that cater to students with disabilities. This has led students to expect that educational websites, platforms, and digital resources are accessible and usable for everyone, regardless of their disabilities. Students with disabilities now anticipate equal access to educational content, interactive features, and online learning materials. The directive also encourages the adoption of accessible design principles and practices, such as providing alternative text for images, proper heading structures, clear navigation, and keyboard accessibility. As a result, students now expect digital learning platforms and educational websites to offer a seamless and intuitive user experience that is easy to navigate and interact with, regardless of their abilities or assistive technologies they may use. Students expect educational materials, such as video lectures, tutorials, and interactive simulations, to include captions, transcripts, audio descriptions, and keyboard-based controls. This allows students with hearing or visual impairments to fully engage with the content. The directive promotes the compatibility of educational websites and platforms with assistive technologies used by students with disabilities. As a result, students now expect educational institutions to ensure that their digital learning resources are compatible with assistive technologies, such as screen readers, screen magnifiers, braille displays, and alternative input devices. This enables students with disabilities to access and interact with educational content effectively. The Web Accessibility Directive also goes beyond the digital resources themselves as students expect digital communication and collaboration tools, such as learning management systems, online discussion boards, and video conferencing platforms, to be accessible. They anticipate features that enable them to communicate effectively, participate in group activities, and engage in collaborative learning experiences, regardless of their disabilities. The implementation of the directive has raised awareness about web accessibility standards and legal requirements. Students now have an increased expectation that educational institutions and providers will adhere to these standards and ensure compliance with accessibility guidelines. They expect institutions to take proactive measures to address accessibility barriers and provide an inclusive digital learning experience.

## 3. Strategies for the Inclusion of High-quality Digital Resources

There are several existing international cost-effective strategies for the inclusion of high-quality digital resources at the second-level education (secondary education) level.



Open Educational Resources (OER) are freely accessible educational materials that can be used, adapted, and shared by teachers and students. OER include textbooks, videos, interactive modules, and other digital resources. Many organizations and platforms provide OER repositories where educators can find and access high-quality resources without cost. Integrating OER into the curriculum can significantly reduce the financial burden of acquiring traditional textbooks and resources. During the pandemic we witnessed partnerships between public education authorities and private sector organizations [11]. Such partnerships can help provide cost-effective access to digital resources. Private companies have offered discounts, licenses, or free access to their educational platforms, tools, and content for public schools. Such partnerships can help schools access high-quality digital resources at reduced or subsidized costs. We are also seeing more schools and educational institutions collaborating and sharing digital resources within their local or regional networks. Pooling resources enables schools to collectively invest in high-quality digital resources and share them across multiple institutions. Governments can play a significant role in promoting the inclusion of high-quality digital resources by providing funding and support. Governments can allocate budgets specifically for the procurement and development of digital resources for second-level education. They can also establish grant programs or funds to support schools in acquiring or creating digital content and resources. In Ireland, many teachers use Scoilnet which gives them access to a wide range of resources [12].

Online learning platforms and Massive Open Online Courses MOOCs provide access to a wide range of high-quality digital courses and resources. Integrating online learning platforms and MOOCs into the curriculum can provide cost-effective access to diverse digital resources [13]. As schools across the EU also have such a high level of autonomy they can also optimize their device and infrastructure setup to make the most cost-effective use of digital resources [14]. This may involve leveraging existing technology infrastructure, repurposing older devices, or adopting low-cost devices such as tablets or Chromebooks that are compatible with digital resources. These strategies can help ensure the inclusion of high-quality digital resources at the second-level education level while minimizing costs. It is important for education stakeholders, including governments, educational institutions, and the private sector, to collaborate and explore innovative approaches to maximize the benefits of digital resources while keeping them affordable and accessible for all students.

#### 4. Conclusion

The requirements for digital learning have evolved in response to the complexity of students' needs, and the Web Accessibility Directive has further emphasized the need for inclusive digital environments. Realizing a high-quality digital learning experience requires collaboration and innovative approaches from all education stakeholders. By meeting the evolving requirements of digital learning, educators, policymakers, and technology providers can contribute to the achievement of the SDGs, promoting inclusive and equitable education, lifelong learning opportunities, and empowering individuals to acquire the knowledge and skills necessary for sustainable development. The Web Accessibility Directive has heightened student expectations for a digital experience in education that is accessible, inclusive, and usable for all. Students now anticipate that educational websites, platforms, and resources will be designed and developed with accessibility in mind, allowing them to fully participate in digital learning activities, access educational content, and engage with their peers and instructors on equal terms.

#### References

- [1] UN Sustainability Goals <https://www.un.org/development/desa/disabilities/envision2030-goal4.html>"><https://www.un.org/development/desa/disabilities/envision2030-goal4.html>
- [2] European Commission, Directorate-General for Education, Youth, Sport and Culture, Investing in our future : quality investment in education and training, Publications Office of the European Union, 2022, <https://data.europa.eu/doi/10.2766/45896>
- [3] Marcus-Quinn, A., & Hourigan, T. (2022). Digital inclusion and accessibility considerations in digital teaching and learning materials for the second-level classroom. *Irish Educational Studies*, 41(1), 161-169.
- [4] Parkinson, C. M., & Olphert, C. W. (2010). Website Accessibility and the Role of Accessibility Statements. In *Integrating Usability Engineering for Designing the Web Experience: Methodologies and Principles* (pp. 166-190). IGI Global.



- [5] Marcus-Quinn A. The EU Accessibility Act and Web Accessibility Directive and the implications for Digital Teaching and Learning Materials. Routledge Open Available at: <https://doi.org/10.12688/routledgeopenres.17581.1>
- [6] Zuniga, H. (2022). Accessibility and E-Resources: Why It Matters and What You Can Do. *The Serials Librarian*, 1-6.
- [7] Shearer, R. L., Aldemir, T., Hitchcock, J., Resig, J., Driver, J., & Kohler, M. (2020). What students want: A vision of a future online learning experience grounded in distance education theory. *American Journal of Distance Education*, 34(1), 36-5
- [8] Marler, E. K., Bruce, M. J., Abaoud, A., Henrichsen, C., Suksatan, W., Homvisetvongsa, S., & Matsuo, H. (2021). The impact of COVID-19 on university students' academic motivation, social connection, and psychological well-being. *Scholarship of Teaching and Learning in Psychology*.
- [9] Wynter, L., Burgess, A., Kalman, E., Heron, J. E., & Bleasel, J. (2019). Medical students: what educational resources are they using?. *BMC medical education*, 19, 1-8.
- [10] Marcus-Quinn A. The EU Accessibility Act and Web Accessibility Directive and the implications for Digital Teaching and Learning Materials [version 1; peer review: 1 approved]. *Routledge Open Res* 2022, 1:30 (<https://doi.org/10.12688/routledgeopenres.17581.1>)
- [11] Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of educational technology systems*, 49(1), 5-22.
- [12] Marcus-Quinn, A., & Clancy, I. (2022). Accessibility and inclusion in digital resources for third level students. In *INTED2022 Proceedings* (pp. 2399-2404). IATED.
- [13] Pulist, S. K. (2020). Open educational resources (including MOOCs). *Quality Education*, 591-599.
- [14] Marcus-Quinn, A., Hourigan, T., & McCoy, S. (2019). The digital learning movement: How should Irish schools respond?. *The Economic and Social Review*, 50(4), 767-783.