# Accessibility Standards and Laws: Implementation for Successful Digital Education within the Eurozone

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**Abstract.** The United Nations Convention on the Rights of Persons with Disabilities defines the right to equal opportunities for all citizens. Article 21 of the convention details how the accessibility of information and communications should be ensured in practice. As a result of the convention, international, European and national policies, standards and law have been established, creating a legal and binding framework for compliance. This paper considers the current standardisation for digital accessibility and laws of the European Union member states, in particular Ireland, France and Spain in relation to compliance for digital educational practices. In view of the IMPACT (Inclusive Method based on the Perception of Accessibility and Compliance Testing) project, the paper will assess the level of compliance with digital accessibility standards at regional level within the aforementioned Eurozone Member States. The authors will address the current accessibility requirements and outline support and training strategies to support professional digital content creators and educators in conformance with existing guidelines and requirements.

**Keywords:** Accessibility, Legislation, Standards, eLearning, HCI.

## 1 Accessibility in the Eurozone for Digital Education

In March 2021 the European Commission (EC) presented a ten-year strategy for the rights of people with disabilities. Commission President Von der Leyen (European Commission, 2020) stated that "Persons with disabilities have the right to have good conditions in the workplace, to live independently to equal opportunities, to participate fully in the life of their community. All have a right to a life without barriers. And it is

our obligation, as a community, to ensure their full participation in society, on an equal basis with others."

Approximately 80 million people or 1-in-6 people living and working in the European Union have some form of disability. In 2019 the EU Commission estimated that approximately 120 million persons in the EU would have multiple or minor disabilities by 2020. While there has been no further statistical information regarding disabled citizens from EU sources, in recent times (2021) the World Health Organization estimated that 135 million people in the region live with a disability.

The EU aims to make products and services more accessible while respecting the principle of equal treatment. The strategy sets out three key initiatives around three main themes: EU rights, independent living with autonomy and non-discrimination and equal opportunities, moving toward a solid legal framework comprising the European Accessibility Act and the Web Accessibility Directive. The aim is to ensure that EU citizens can participate in society on an equal basis in both physical and virtual environments. This need has become even more highlighted during the recent Covid-19 pandemic and has become particularly apparent in the digital education space as students and educators were forced into online learning environments. While this was in some respects beneficial to some in terms of accessibility, it also highlighted areas of weakness within web-based educational accessibility (El-Ahwal, 2022).

## 1.1    Accessibility for Digital Education

While the EU's aim for improved the rights for disabled citizens is a positive move, compliance disparity between regions in relation to enforcement and monitoring of EU standards must be removed.

The key to the successful implementation of the strategy lies an acceptance of the strategy framework across the European zone. Training and dissemination of information to stakeholders, in particular system developers, educators and service providers, is essential for a coherent strategy, especially in terms of learning content and universal design implementation in digital educational settings. Standards set out at European level act as an umbrella over all European regions, however, different regions, for example Ireland, France and Spain have different national legislative processes, regulations and laws in place to address accessibility issues. On this basis, the authors consider the regional  implementation strategies of eurozone members and highlight the goals of the IMPACT (Inclusive Method based on the Perception of Accessibility and Compliance Testing) project which aims to define the skills and competencies that ICT accessibility educators and mediators should hold for compliance.

## 2    The European Standard for Digital Accessibility and Regional Strategies

Article 9 of the United Nations Convention on the Rights of Persons with Disabilities defines the right to equal opportunities for all citizens. Furthermore, Article 21 of that same convention details how the accessibility of information and communications should be ensured in practice. In consideration of compliance the European Union

member states ratified this convention in 2010, building a solid legislative framework for improving accessibility for people with disabilities and creating a barrier-free Europe. Different initiatives were brought together to guarantee the full participation and improvement of the rights of people with disabilities. The Digital Agenda for Europe (2010-2014)[1] and the European Disability Strategy (2010-2020)[2] formed the basis for introducing general political strategies, incorporating specific actions to guarantee access to ICT for people with disabilities and implementing policies for disabled access.

The Web Accessibility Directive (2016)[3], the updated Audio-visual Communication Services Directive (2018) and the European Accessibility Act (2019) are the main directives that were developed at legislative level to regulate accessibility in the European Union.

The enforcement of global and European standard implementation can be lacking by regional Governments can be inadequate through the issue of unmonitored compliance guidelines (Lazar et al., 2015). Member State must adapt their laws and standards to meet this legislative framework to ensure barrier-free access to media and digital content for all European citizens.

## 2.1 Accessibility Legislation in The Republic of Ireland

In 1996, a milestone Irish report entitled "A Strategy for Equality"[4] was issued by the Commission on the Status of People with Disabilities[5]. The landmark document outlined three key principles that were to be adopted by the Commission including; Equality, Maximising Participation and Enabling Independence and Choice. The report led to the establishment of legislation in the guise of the 2005 Disability Act[6] which aimed to obligate government departments to facilitate the inclusion of people with disabilities. The Act was given legal effect through in 2000 by the Government of Ireland policy on disabilities. Further legislation enacted to protect equal rights focuses on employment through the Employment Equality Acts [7]1998–2015 and the provision of goods and services through the Equal Status Acts of 2000 – 2018 consolidated[8] as

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[1] European Commission (EC): *Digital Single Market*: updated audiovisual rules. (2018). Retrieved from: http://europa.eu/rapid/press-release_MEMO-18-4093_en.htm)

[2] European Disability Strategy 2010-2020: A Renewed Commitment to a Barrier-Free Europe. Retrieved from: https://eur-lex.europa.eu/LexUriServ/LexUri-erv.do?uri=COM%3A2010%3A0636%3AFIN%3Aen%3APDF

[3] Web Accessibility Directive, https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32016L2102

[4] Strategy for Equality, National Disability Authority of Ireland, https://nda.ie/nda-files/a-strategy-for-equality.pdf

[5] Strategy for Equality, Commission report, Ireland https://nda.ie/nda-files/strategy-for-equality-overview-and-commissions-recommendations11.pdf

[6] Disability Act 2005, Ireland, https://www.irishstatutebook.ie/eli/2005/act/14/enacted/en/html

7 Employment Equality Act, Ireland, https://www.irishstatutebook.ie/eli/1998/act/21/enacted/en/html?q=Employment+Equality+Act

8 Equal Status Act, Ireland, https://www.irishstatutebook.ie/eli/2000/act/8/enacted/en/html

supported by the Irish Human Rights and Equality Commission which provides guidance on compliance. The National Disability Strategy[9] (2004) aims to secure the inclusion of all people in society through the support of current policy and legislation. The aim is to enforce the promotion of equality and inclusion of people with disabilities. The focus of the strategy surrounds the areas of disability legislation, Statutory Sectoral Plans on disability for a number of Government departments, and a multi-annual investment programme to focus on disability services in the areas of employment, environment and disability services, social welfare, transport and communications.

Giving effect to the Web Accessibility Directive (EU "Directive (EU) 2016/2102 of the European Parliament and of the Council of 26 October 2016), the European Union (Accessibility of Websites and Mobile Applications of Public Sector Bodies) Regulations 2020 came into force in Ireland in September 2020. The Statutory Instrument obligates all Irish public bodies to ensure that their websites and mobile applications are equally accessible to all people, including persons with disabilities. The 2020 Regulations build on existing obligations to make websites and services offered to the public under the Disability Act 2005 and the Code of Practice on Accessibility of Public Services and Information provided by Public Bodies[10].

Consequently, and as part of the National Disability Strategy, the Centre for Excellence in Universal Design (CEUD)[11] was established by the National Disability Authority (NDA)[12] in January 2007 under the Disability Act 2005. CEUD is dedicated to enabling the design of environments that can be accessed, understood and used regardless of a person's age, size, ability or disability. The contribution to the development and promotion of standards in Universal Design, the Centre Participate in and contribute to relevant standardisation work, with national, European and international standards bodies and Encourage compliance with national and international standards in Universal Design being the main agenda. CEUD has a responsibility within the educational spectrum to support and promote the introduction and integration of the principles of Universal Design in educational courses and examinations.

## 2.2    Accessibility Legislation in France

In France the Disability Act, "law for equal rights and opportunities, participation and citizenship of disabled people" is in place since 2005. Article 47[13] of the Act targeted the public sector and imposed a reference-based system in line with the international WCAG 2 standards. Article 47 of the 2005 Disability Act has been updated to uphold the enforcement of the European Web Accessibility Directive and, to consider European requirements.

The French legislator went beyond the European obligation to extend the scope of application to private companies with a turnover of more than 250 million euros.

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9National Disability Strategy of Ireland, https://www.justice.ie/en/JELR/NDA%20-%20POLICY%20-%202.Pdf/Files/NDA%20-%20POLICY%20-%202.Pdf

10 https://nda.ie/Good-practice/Codes-of-Practice/Code-of-Practice-on-Accessibility-of-Public-Services-and-Information-Provided-by-Public-Bodies-/

11 The Centre for Excellence in Universal Design, Ireland, https://universaldesign.ie/About-Us/

12 The National Disability Authority Ireland, https://www.nda.ie

13 Article 47 2005 Disability Act, France, https://www.legifrance.gouv.fr/loda/article_lc/LEGIARTI000037388867/2020-09-15

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The French RGAA (Référentiel général d'amélioration de l'accessibilité) has also evolved from version 3 to version 4. However, this change was made in the direction of a minimal transposition of European requirements, which meant a regression in the level of requirements, with the removal of criteria that were legally exempted based on Article 3 of Decree 2019-768 of July 24, 2019[14]. It should be noted that this implementing decree does not allow for the full entry into force of the provisions of the law, which in theory provides for administrative sanctions to be set by decree. Article 6 III of the decree provides "The declaration is communicated to the administration through a teleservice in accordance with the terms and conditions determined jointly by the minister responsible for persons with disabilities and the minister responsible for digital." However, the decree setting the terms of the teleservice has never been issued.

Furthermore, the European Commission indicates on one of its websites the list of Member States' bodies in charge of monitoring the Web Accessibility Directive15. For France, the 2 bodies mentioned are: 1. The Directorate General for Social Cohesion (DGCS) for monitoring and reporting, 2. The Defender of Rights for the enforcement.

However, each Member State had to submit a report to the European Commission on the implementation of the Web Accessibility Directive by December 23, 202116. All Member States have done so, except for 3 countries, including France, which had not yet published its report by April 20, 2022. The reason for this is the lack of resources in the administrations in charge of monitoring the subject, as reported by the press (Yanous, 01/10/2021- Article in French 17).

Finally, in addition to the law and the decree, let us note a French particularity in the transposition of the European Directive, with the decree of September 20, 2019 on the general referential of accessibility improvement (RGAA) and which constitutes an adaptation of the European standard EN301549 on the Web part. This RGAA was published in its version 4.1 on February 18, 2021 and benefits from a long tradition of transposition of international WCAG rules since 2003 in France, with at the time an associative reference framework carried by the BrailleNet association and which was called AccessiWeb, with a community of auditors trained in this reference framework, and which became since 2015 the RGAA from its version 3.

## 2.3    Accessibility Legislation in Spain

In Spain, the first national legislation related to ICT accessibility were Law 34/2002[18] on Information Society Services and Electronic Commerce, and Law 51/2003[19] on Equality of Opportunities, Non-Discrimination and Universal Accessibility for Persons with Disabilities. Both laws transposed several European directives and made the

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14        Article    3    of    Decree    2019-768 https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000038811937/

15    Web    Accessibility    Directive    Monitoring        https://digital-strategy.ec.europa.eu/en/policies/web-accessibility-monitoring

16        Web    Accessibility    Directive    Monitoring    Reports    https://digital-strategy.ec.europa.eu/en/library/web-accessibility-directive-monitoring-reports

17    À la recherche de l'accessibilité perdue
    https://www.yanous.com/pratique/informatique/pointsdevue211001.html

[18] Law 34/2002 (https://www.boe.es/buscar/act.php?id=BOE-A-2002-13758)

[19] Law 51/2003 (https://www.boe.es/buscar/act.php?id=BOE-A-2003-22066)

accessibility of public administration websites mandatory at the three levels: state, regional, and local. None of the laws, contained any specific details about web-accessibility requirements. To this aim the Spanish standards organization, AENOR, developed the Spanish web accessibility standard UNE 139803:2004[20], which defined the level of accessibility that public sector organizations must conform. This standard was substituted for UNE 139803:2012[21], which updated the requirements of the previous standard from WCAG1.0 to WCAG2.0. UNE 139803 was also referenced in the new Royal Decree 1494/2007[22], which established the basic accessibility requirements for ICT accessibility.

A major milestone in accessibility-related legislation in Spain was the adoption of the United Nations Convention on the Rights of Persons with Disabilities in 2008. This fact conformed an extensive set of responsibilities that the Spanish public administration had to implement in the coming years. The current accessibility-related legislation in Spain is the Royal Decree 1112/201823, which encompassed the previous legislation, and is the transposition of the Directive (EU) 2016/2102 at a national level. It covers the accessibility of all websites and applications for mobile devices. In terms of compliance, it is recommended to follow the latest version of standard UNE-EN 301549: 202224, which establishes the functional requirements to ensure that ICT products and services are accessible to all people. This standard includes the latest version of the harmonized European standard EN301 549, which incorporates WCAG 2.1.

The goal is to provide a single shared standard for the accessibility of web content that ensures access to content for all citizens. Still, the real implementation of these policies has been quite limited. As highlighted by the Spanish Accessibility observatory report (2021)[25], awareness has grown substantially, and all stakeholders are now familiar with accessibility. Even so, more training for the proper implementation of accessible ICT products and services is still much needed.

## 3      Educating for Compliance and Sustainability

As highlighted in the previous section, most countries have already transposed the accessibility-related European legislation. Yet, even if legislation makes accessibility mandatory, it is not enough. Accessibility policies should make sure all professionals are trained in why accessibility is important, and how to provide solutions. This is the

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[20]      UNE       139803:2004       (https://www.une.org/encuentra-tu-norma/busca-tu-norma/norma?c=N0032576)

[21]      UNE       139803:2012       (https://www.une.org/encuentra-tu-norma/busca-tu-norma/norma/?c=norma-une-139803-2012-n0049614)

[22] Royal Decree 1494/2007 (https://www.boe.es/buscar/doc.php?id=BOE-A-2007-19968)

[23] Royal Decree 1112/2018 (https://www.boe.es/diario_boe/txt.php?id=BOE-A-2018-12699)

[24]      UNE-EN      301549:      2022      (https://www.une.org/encuentra-tu-norma/busca-tu-norma/norma/?c=N0068037)

[25]  Observatorio de Accesibilidad (2021) Informe sobre el resultado del seguimiento (https://www.tuwebaccesible.es/wp-content/uploads/2021/12/informe-resultado-segui-miento.pdf)

only way of ensuring that accessibility caters for the needs of all people not just because it is mandatory but because it is a human right. In this regard, on many occasions, a web developer enables a web page to make it compatible with screen readers, without having received training on how users who use this service navigate the Internet. On the other hand, the growing convergence towards the web of the audiovisual content of the media, results in a growing demand for professionals with training in digital accessibility. In this sense, the IMPACT project aims to train the figure of the educator/mediator in digital accessibility to be able to advise and guide the different agents involved in the development, design, content creation, and procurement of online digital systems, services and products.

## 3.1 The IMPACT Project

The European IMPACT project aims to define the skills and competencies that an educator or mediator in ICT accessibility should acquire and master for the correct implementation of the harmonised European accessibility standard digital EN 301 549. The recent adoption and entry into force of the Directive on Web Accessibility have highlighted the scarce training in digital accessibility outside of the technological field (Oncins et al. 2020), resulting in the development of this initiative for the training of new professionals. As the requirement of digital accessibility increases, the importance of quality and the need for training professionals in this field should be highlighted.

In the field of accessibility there is currently a lack of professional training from a universal design and user-centric perspective. On many occasions, the emphasis in digital and media digital accessibility training is placed on technical aspects essential to reach the end-user (Matamala and Orero, 2019; Oncins, 2021) without considering fundamental competencies, such as: understanding accessibility, needs and preferences of the different users, service competence to be able to mediate and deliver accessibility properly, or promoting promotion to be able to raise awareness and involve stakeholders. As highlighted by Oncins et al. (2020) most digital accessibility training is included in academic IT studies related to the development of technological systems, services and products. Aiming to comply with standards without providing a deep understanding of the users' needs (Oncins et al., 2020).  In this sense, the IMPACT project (2019 - 2022) aims to train the educator/mediator in digital accessibility to facilitate the provision of advice and guidance to the different agents involved in the design of digital systems, services and products.

## 3.2      ECQA Certification

European Certification and Qualification Association (ECQA), an IMPACT project partner, provides a solution to the need for new and emerging professions and job roles, where no or only very heterogeneous training is available. Accessibility professionals, for example, usually do not have a diploma or any official recognition, however, through the ECQA, these professionals can obtain international, European certificates confirming their expertise in universal design.  The ECQA currently facilitate accessibility certifications within international and EU funded projects. Certificates for professionals, jointly developed by industry, academia and the ECQA, are issued by

ECQA GmbH. Currently, the ECQA Certificates, certified training programs highlight three main topics including accessibility, innovation and sustainability.

## 4    Conclusions

The right to equal opportunities for all citizens in terms of Article 21 of United Nations Convention of Human Rights details how the accessibility of information and communications should be ensured in practice. The concept of accessibility has seen a shift towards a universal concept instead of the exclusive one, which is user-centred and proactive (Greco, 2018: 211). This shift is supported through International, European and national policies, standards and law established to create a legal and binding framework for compliance. This paper has considered the current standardisation for digital accessibility and laws of different European Union member states, in particular Ireland, France and Spain in relation to EU standard compliance for digital educational practices. In view of the IMPACT (Inclusive Method based on the Perception of Accessibility and Compliance Testing) project, the paper outlines compliance strategies with digital accessibility standards at both regional level within the Eurozone. The authors outline support and training strategies to support digital content creators and educators in conformance with existing guidelines and requirements.

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