




Universal Digital Accessibility and Its Teaching in Spanish Bachelor's Degrees in Journalism

*La accesibilidad digital universal y su enseñanza
en los grados universitarios de Periodismo en España*

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Abstract

The main aim of this research is focused on analysing the presence of universal accessibility and design in the curriculum of the official Journalism degrees of Spanish universities. From 25 undergraduate degrees, the research analyses the content of the teaching guides and the teaching practices of 196 concrete subjects. These subjects are linked with the concepts and with the application of the criteria of universal accessibility, especially with technology teaching to produce accessible digital journalistic content. The study carried out confirms that there is a limited number of good practices in teaching universal accessibility criteria in these degrees. Along with the already established need to strengthen accessible learning in higher education, the authors add and underline the importance of enhancing certain technological skills in relation to accessibility to improve the training of future Journalism professionals.

Keywords: accessibility, disability, university, journalism, technology

Resumen

El objetivo general de este estudio se centra en analizar la presencia de la accesibilidad universal y del diseño para todas las personas en el currículum de los grados oficiales de Periodismo de las universidades españolas. A partir de 25 titulaciones de grado, la investigación analiza el contenido de las guías docentes y las prácticas del profesorado de 196 asignaturas. Estas materias están vinculadas con los conceptos y con la aplicación de los criterios de la accesibilidad universal, especialmente con la enseñanza a través de la tecnología de la producción de contenidos periodísticos digitales accesibles. El estudio realizado constata que existe un número limitado de buenas prácticas en la docencia de criterios de accesibilidad universal en estos grados. Junto a la necesidad ya constatada del fortalecimiento del aprendizaje accesible en la educación superior, los autores añaden y subrayan la importancia de potenciar determinadas competencias tecnológicas en relación con la accesibilidad para mejorar la formación de los futuros profesionales del Periodismo.

Palabras clave: accesibilidad, discapacidad, universidad, periodismo, tecnología



1. INTRODUCTION

Recent research on digital accessibility and university education in Spain has highlighted two facts. On the one hand, the legislative initiatives to foster the implementation of accessibility standards have not managed to extend it generally to the websites of Spanish universities. On the other hand, this lack of attention to accessibility and universal design also extends to virtual learning environments and spaces in higher education (Pastor and Antón, 2009; Casasola et al, 2017; Jaume et al., 2019).

The development of digital technology has prompted an intensive interdisciplinary approach to the issue of accessibility and its relation with the education and communication sectors since the end of the last century. This approach has highlighted not only how technology can make learning environments more accessible for university education, but also how the assertion of the right to communication for all should promote technological teaching and learning linked to universal technological design (Ellis et al., 2019).

In the case of university teaching of degrees in the field of Communication and, particularly, in the case of Journalism degrees, the relevance of how future professionals are trained to address disability is twofold: on the one hand, and with regards to journalistic content, to understand how to produce inclusive messages. However, skills linked to accessibility from a technological point of view are no less important; that is, for the training of students as future professionals responsible for the design of a communication in different formats that guarantees access for all. As stated by Youngblood, Tirumala and Gálvez (2018) or Royá (2004), both aspects must be naturally integrated in the university teaching of Journalism and, particularly, in the “syllabus” of the subjects related to digital journalistic production.

Adaptation to the European Higher Education Area (EHEA) and the transformation of the journalistic profession as a result of technology evolution (Sánchez-García and Marinho, 2016) has meant that the profile with the greatest projection of graduates in Journalism has the role of a digital journalist with knowledge of technology and a specialisation in social networks, data journalism and new narratives for different multimedia supports (Gómez-Calderón, Roses y García-Borrego, 2017).

Journalists responsible for producing content in digital media must now have characteristics to distinguish them, in turn, from other professionals such as designers or computer programmers. “Cyberjournalists” must have the skills of writers, documentalists or content managers, to which knowledge from various fields must be added, such as multimedia, documentation, layout, web design, photography or technology (Tejedor, 2010).

In addition to the foregoing, and within the quality parameters that “cyberjournalists” must apply when producing digital content, there is also universal accessibility or design for all, a right included in current legislation. Universal accessibility is defined as “the condition that environments, processes, goods, products and services, as well as objects, instruments and devices, must fulfil in order to be understandable, usable and practicable for everyone in safety and comfort and in the most autonomous and natural way possible” (Spanish Official State Gazette, 2013). On the other hand, design “for all” refers to “intervention on environments,



products and services so that everyone, including future generations, regardless of age, sex, gender, abilities or cultural background, can enjoy participating in building our society” (García de Sola, 2006: 30).

According to the extensive Spanish legislation on universal accessibility, specifically Spanish Royal Legislative Decree 1/2013, digital media that depend on public administrations or companies with great economic importance that have a web interface must be accessible to all, something which is not usually fulfilled, as evidenced by different research (Discapnet, 2007, 2016; Cabañero and Luján, 2012). This lack of accessibility mainly occurs for two reasons: the websites have significant deficiencies in their design and programming (aspects that depend on profiles related to computing and design). However, moreover, digital content generated by journalists add additional barriers; for example, images without alternative text, inadequate use of colour, texts with complex terms or links whose labels do not provide guidance on the content accessed if they are activated (González-Perea, 2018).

In order for future journalists to create accessible digital content, as well as strengthening the development of the skills related to information and computer technology (ICT) in Universities, it is essential that they are aware of the rights and needs of people with disabilities, the elderly and other vulnerable groups with regards to access to information, as well as the standard they must apply to content in order to incorporate universal accessibility requirements. Apart from the aforementioned Spanish Royal Legislative Decree 1/2013, the need for universities to consider design for everyone in the configuration of their degrees is guaranteed by the legislation applicable to the university environment: from Spanish organic law *Ley Orgánica 4/2007*, which modified the Spanish organic law on Universities (Spanish Official State Gazette, 2007), to the regulation of official university education itself (Spanish Official State Gazette, 2007b).

With regards to Journalism degrees, over time both the Spanish National Quality Assessment and Accreditation Agency (ANECA as per its Spanish acronym) and the Spanish University Rectors’ Conference (CRUE as per its Spanish acronym) (ANECA, 2005; *Crue Universidades Españolas*, 2016) have also insisted that training proposals for future professionals must include skills and subjects related to accessibility, especially in profiles linked to digital media, such as that of portal “manager” and “content editor”. Moreover, these documents regarding the training of future journalists, included the need to use language appropriately so as not to affect people with disabilities, both in the definition of disability-related research topics and in the editing of formats accessible to all.

Taking the aforementioned legal framework and existing recommendations as a reference, it is necessary to explore how, in the degree programmes offered by Spanish universities, the development of design-related skills for all is approached among journalism students, particularly in subjects aimed at promoting the production of digital content.

Likewise, any research approach to this educational reality must bear in mind that generally the University has significant shortcomings with regards to inclusion, such as, but not limited to, the lack of training for teachers with regards to disability, the existence of inaccessible curriculums for those with functional limitations, the use of inaccessible online materials or



tools or even the presence of architectural barriers (Gabel and Miskovic, 2014; Garabal, 2015; Langørgen and Magnus, 2018; Love et al., 2014; Vlachou and Papananou, 2015).

On the basis of the aforementioned proven shortcomings, this research aims at analysing how these accessibility skills are present in the teaching guides for Journalism degrees in Spain in order to detect the good practices developed and to define lines of action for possible improvement.

2. METHODS

To achieve the aforementioned objective, a qualitative methodology based on both documentary analysis and direct consultation with those involved in university teaching has been applied. The development of the research has been carried out during the second semester of 2018 and the year 2019.

Apart from collecting and reviewing documents related to the development of skills in Journalism degree programmes aimed at producing digital content, documentary sources on the inclusion of universal accessibility in Higher Education have been consulted. Along with this, the tools used to obtain information for the analysis of said teaching have been:

- Identification of public and private Spanish universities with Journalism degrees and a subsequent selection of a representative sample of degrees, including geographical criteria of relevance and selecting both public and private universities.
- On the basis of the sample of universities selected and a prior categorisation of groups of subjects (5) relating to our object of study, the specific teaching guides for subjects related to producing digital content and to the rights and duties associated with the journalistic profession (where accessibility must be considered) have been located through the websites of the universities analysed.
- Analysis of the content of the teaching guides to detect the inclusion and relevance of the skills relating to producing accessible content and attention to the needs of those with disabilities.
- An online questionnaire addressed to teachers who are coordinators of the subjects analysed in order to identify good practices not explicitly included in the teaching guides analysed.

Selection of a Sample of Journalism Degrees

For the selection of the sample of university Journalism degrees, generic degrees in Communication were excluded from the total of 114 initially identified, as well as the offer of joint degrees. Similarly, a criterion of geographical representation and relevance was applied. As a result, in the autonomous communities that offer various degrees, a maximum of two public university degrees and one private university degree were selected. In autonomous communities in which there were more than two public university degrees, the degrees of the best represented universities in the QS World University Rankings (2017) were included in the sample.



The final sample is made up of 25 Journalism degrees from 14 autonomous communities, of which 15 are offered by public universities and 10 by private universities.

Table 1. Sample of Journalism degrees analysed according to the autonomous community and university.

AUTONOMOUS COMMUNITY	PUBLIC UNIVERSITIES	PRIVATE UNIVERSITIES
Andalusia	University of Málaga University of Seville	EUSA University Centre
Aragon	University of Zaragoza	University of San Jorge
Canary Islands	University of La Laguna	
Cantabria		European Atlantic University
Castile and León	University of Valladolid	Pontifical University of Salamanca
Castilla La Mancha	University of Castile La Mancha	
Catalonia	Autonomous University of Barcelona Pompeu Fabra University	Central University of Catalonia
Community of Madrid	Complutense University of Madrid Rey Juan Carlos University	CEU San Pablo University
Valencian Community	University of Valencia Miguel Hernández University	CEU Cardenal Herrera University
Galicia	University of Santiago de Compostela	
Balearic Islands		Alberta Giménez Higher Education Centre
Navarra		University of Navarra
Basque Country	Basque Country University	
Region of Murcia	University of Murcia	Catholic University of Saint Anthony, Murcia

Type of Subjects Selected and Teaching Guides Analysis

For the subsequent analysis of the teaching guides, in each study programme we proceeded to identify subjects that, according to the bibliography consulted, should include knowledge related to universal accessibility among their skills. Specifically, subjects related to five thematic or knowledge areas were selected:

1. Technology and digital journalism. The objective was focused on identifying whether these subjects provided the guidelines producing accessible digital content.
2. Graphic design and layout. Interest in these subjects was focused on discovering whether they included contents aimed at applying accessibility characteristics in the design: colour treatment, font, etc.



3. Audiovisual production. In this case, the main concern was to know whether the degrees included contents aimed at strengthening accessibility, for example, through subtitles for deaf people or audio-description for blind people.
4. Digital documentation. In this case, the selection was based on the need to check whether these subjects include sources specialised in vulnerable groups and whether they take into account the accessibility of the content when classifying sources that future journalists will make available to consumers of information.
5. Rights, ethics and deontology. Lastly, to check whether they included references related to the right to information of people with disabilities, the elderly and other groups at risk of digital exclusion.

Based on the topics presented in these five groups of subjects, 209 subjects were selected from the pre-selected degrees (an average of 8.4 subjects for each degree analysed). However, 13 subjects were subtracted from the final figure, whose teaching guides were not available on the websites of the selected universities. All the teaching guides included in the final analysis, 196, could be consulted as they were openly available on the institutional websites of both the public and private universities included in the sample.

Table 2. Type of subjects and teaching guides analysed

SUBJECTS/TEACHING GUIDES	NUMBER
Subjects selected from Journalism degrees	209
Teaching guides analysed	196
On technology and digital journalism	87
On graphic design and layout	36
On audiovisual production	20
On digital documentation	11
On rights, ethics, and deontology	42

Source: Author.

The analysis of these teaching guides focused on checking how the aspects relating to universal digital accessibility were explicitly included. To this end, both the syllabus of each subject and the general, transversal and specific skills and expected objectives and learning outcomes were reviewed. Specifically, for the analysis of these guides, the document *Formación Curricular en Diseño para Todas las Personas en Periodismo* ("Curricular Training in Design for All in Journalism") (Crue Universidades Españolas, 2016) was taken into account. This document sets out the essential criteria that journalism courses should have in this respect.

In this way, and in accordance with the characteristics of each subject, the analysis focused on checking how the following aspects were included: guidelines for producing accessible digital content; accessibility in design (colour treatment, font, etc.); subtitling for deaf people or audio description for blind people; sources specialised in vulnerable groups or references relating to the right to information for people with disabilities, the elderly and other groups at risk of digital exclusion.

Consultation with Teachers



In order to obtain more detailed information regarding the effective development of the content related to universal accessibility in the Journalism degrees analysed, an online questionnaire was designed and sent to teachers responsible for teaching the subjects included in our study sample. After providing the recipients with information regarding the context of the research, the online consultation asked about the actual inclusion in the subjects taught of the contents on the right to information of people with disabilities, the elderly and other groups at risk of digital exclusion, as well as the inclusion of specific guidelines aimed at producing accessible digital content.

The questionnaire was made up of a total of eight questions, both open and closed, in order to be able to delve deeper into the good practices carried out, since the indications provided in the teaching guides cannot necessarily reflect what is finally taught in each class. Apart from identification questions, teachers were asked to indicate the specific way in which they teach this content related to universal accessibility and attention to groups at risk of digital exclusion; the dedication in class to this content in terms of time spent, as well as the perception of the degree of interest detected by the students with regards to this content (on a scale of 1 to 5, where 1 meant "Not at all satisfactory" and 5 "Very satisfactory"). The online consultation was sent to 205 valid email addresses and was completed by 62 teaching coordinators (30.2 % participation).

3. RESULTS

From the analysis of the 196 teaching guides selected, a total of 9 good practices have been detected, representing 4.6 % of subjects whose syllabus literally includes content related to accessibility and attention to those at risk of digital exclusion. The percentage of good practices detected increases significantly if, in addition to these verifiable inclusions in the syllabuses, the data from the online consultation completed by 62 journalism teachers is added. Thus, excluding those already detected in the teaching guides, another 24 good practices declared by the teaching staff would be added, giving a total of 33 good practices (16.8 % of all subjects analysed).

With regards to the time dedicated in the subjects to developing skills in students related to universal accessibility and attention to people with disabilities, the teaching guides analysed do not provide this information. However, according to the estimate provided by teachers through our online consultation, 32.1 % of them dedicate less than one hour to this content, 50 % between one and three hours, 7.1 % between four and eight hours and 7.1 % between nine and fifteen hours. Only 3.6 % (corresponding to the case of a single subject) dedicates more than 15 hours.

It is significant that, according to what teachers have indicated through the online consultation made, the degree of interest in accessibility by the students who have been trained in the subject is rather high, by 3.7 on a scale of 1-5.

The good practices detected after analysing the teaching guides and complementing them with the information gathered in the teacher consultation are described below. Although they are not verifiable in official guides, they can serve as a sign of concern regarding these contents.



3.1. Subjects Related to Technology and Digital Journalism

In the 87 subjects classified under this category, subjects related to the journalistic production of digital content are approached. The most commonly used names for these subjects are “Cyberjournalism”, “Digital Journalism” or “Multimedia”, as well as other more specific names such as “Website Design” or “Social Media”. Other degrees have also been detected in which these contents are approached in more general subjects, for example, in “Journalistic Production”.

Regarding the results obtained, only six subjects have been identified that include content related to universal accessibility in their teaching guides, which are as follows:

- “Construction of Digital Information Services”, at the University of Murcia. In the teaching guide’s introduction, reference is made to website accessibility. Moreover, Unit 2, titled “Website Design”, includes a master class called “Guidelines for Website Accessibility and Usability”. A seminar on “Tools for the Evaluation of Website Accessibility and Usability” is also planned, as well as laboratory sessions related to this unit.
- “Website Design”, at the University of Valladolid. Among other objectives, it specifies that of “Studying the importance of hierarchies and relationships between website components, as well as basic technical elements such as usability, accessibility and browsing”.
- “New Technologies and Information Society”, at the Rey Juan Carlos University. Unit 4, titled “Social Transformations in Information Society”, includes, for example, the “processes of social inclusion and exclusion in information society”.

Moreover, another three teaching guides in which accessibility are expressly included are as follows: “Journalistic Production”, at the University of Seville; “Interactive Digital Communication”, at the University of Vic or “Web Design”, at the University of San Jorge.

Additionally, through the online consultation addressed to Journalism teachers, another twelve subjects have been detected in which these contents are approached, despite not being included in their teaching guides. Examples of these cases are:

- “Cyberjournalism”, at the University of Valladolid. The teacher indicates that they “address the digital divide and stratification”, explaining within this framework “the importance of accessibility and standards”.
- “Cyberjournalism”, “Multimedia Workshop I” and “Multimedia Workshop II”, at the University of Castile La Mancha. According to the teacher, in these subjects they address “Information architecture, interactivity and usability”. However, no mention of accessibility is expressly made, but rather to similar subject areas.
- “Journalistic Information Design”, at the Rey Juan Carlos University. The teacher addresses “Information regarding the different modalities of exclusion and the need for research in environments that are not publicised by the mainstream media”.



- “Journalistic Digital Design and Editing”, at the University of Malaga. The teacher indicates that they approach the adaptation of design and information content to the needs of all audiences: “higher use of multimedia content, subtitles, sound, different image and text sizes or the translation of content into sign language.”

There are another six subjects in which the teachers responsible state that they work, to a different extent, on content with students regarding usability, accessibility and design for all: “Multimedia Language”, at the Autonomous University of Barcelona; “Planning and Development of Online Projects”, at the Rey Juan Carlos University; “Digital Communication Project”, at the University of Zaragoza; “Technology & Journalism”, at the Pompeu Fabra University; “Journalistic Production”, at the University of San Jorge and “Multimedia Journalism Workshop”, at the Catholic University of San Antonio in Murcia.

Thus, just under 7 % of the subjects analysed include accessibility content in their teaching guides, while around 20 % of the subjects analysed on technology and digital journalism, including teachers' statements, would approach these issues.

3.2. Subjects Related to Graphic Design and Layout

Although the subjects included under the category of "Technology and Digital Journalism" approach content related to graphic design and layout for the digital environment, 36 subjects have been classified under this category, including graphic treatment of images and page layout. However, and despite the fact that these subjects address content with a high direct influence on accessibility, such as colour, font, image processing or page layout, none of the 36 teaching guides expressly mention said accessibility, although legibility is included as a basis for designing the contents.

Through the online consultation addressed to journalism teachers, there are only three subjects on record that approach these subjects without being reflected in the teaching guides: “Visual Communication”, at the Pontifical University of Salamanca, where, according to the teacher, they address the design of printed and digital publications, paying close attention to font; “Image in Journalism”, at the University of La Laguna, which addresses the perception of images and the keys to iconographic journalism; and “Digital Contents Laboratory”, at the Alberta Giménez Higher Education Centre, which includes the labelling of digital images, essential for its accessibility.

3.3. Subjects Related to Audiovisual Production

Although the subjects included under the category of "Technology and Digital Journalism" approach issues related to audiovisual content, 20 subjects have been classified under this category that focus specifically on audio and video production. None of the 20 teaching guides expressly mention audiovisual production techniques that strengthen the accessibility of said content, such as subtitling, audio description or the inclusion of sign language.

Through the online consultation addressed to journalism teachers, two more subjects in which this content is approached have been identified: “Audiovisual Communication Project”, at the University of Zaragoza, where the teacher explains that "service-learning towards NGOs



targeting all vulnerable groups" is approached; as well as "Audience Programming and Research", at the Rey Juan Carlos University, where the teacher responsible claims that the "accessibility requirements for audiovisual content set out in Spanish and European regulations" are discussed.

3.4. Subjects Related to Digital Documentation

Within the eleven subjects classified under this category, matters related to the identification and processing of digital documents are approached in order to find out whether accessibility is considered as a parameter for selecting sources or whether specialised repositories of information on disability are recommended. The most commonly used names for these subjects are "Journalistic Documentation", "Informative Documentation" and "Documental Sources Management".

In the teaching guides analysed, SEO positioning and usability are mentioned, but no reference is made to accessibility. Nor have any examples been identified that address accessibility in this type of subject through the online consultation of journalism teachers. As for specialised disability repositories, these are not generally considered either.

3.5. Subjects Related to Rights, Ethics and Deontology

The 42 subjects classified under this category approach constitutional rights linked to the production and dissemination of information, legislation associated with the journalistic profession, ethical codes, style books and other references that set the standards related to the profession. Although these subjects are not related to the technological production of contents, their value lies in making students aware of the legislation and deontological application of these principles of universal accessibility.

In general, teaching guides include the right to information as a constitutional right, as well as the need to protect specific groups. However, when they mention specific groups, references are often made to cultural and religious diversity, gender discrimination or child protection. Only two subjects have been identified with reference to disability in their teaching guides, plus a third one that mentions minorities and the need for inclusive language practice:

- "Journalistic Deontology", at the Pompeu Fabra University in Barcelona. The syllabus includes Unit 7, which approach the main ethical principles of justice. This topic includes the following subsection: "Treatment of Disadvantaged Social Groups". Moreover, different forms of discrimination are included, mentioning the following: sexism, racism and xenophobia, the elderly, homophobia, mental illnesses and the handicapped. In this regard, it should be noted that the word "handicapped" has negative connotations, so the correct expression would be "disabled people".

- "The Right to Information", at the University of Castile La Mancha. Unit 5, on radio and television, includes the following subsection: "The Rights of Disabled People", which, however, is not included in the unit related to the Internet.



- “Deontology and the Media”, at the University of the Basque Country. Unit 4, titled “Some Relevant Ethical Questions”, includes a subsection regarding attention to minorities. While it does not directly refer to disability, it at least captures the need to use inclusive language as an expected learning outcome.

In addition to those mentioned, there are seven other subjects where, according to their teachers, accessibility or rights of access would be taught: “Codes and Values of the Journalistic Profession”, at the University of Seville; “The Right to Information”, at the University of Seville; “The Right to Information”, at the University of the Basque Country; “The Right to Information”, at the University of Valencia; “Professional Ethics and Deontology”, at the University of Castile La Mancha; “The Right to Information”, at the University of VIC and “Communication Ethics”, at the CEU Cardenal Herrera University.

4. DISCUSSION AND CONCLUSIONS

From the analysis carried out above, it can be stated that journalism degrees offered by Spanish universities do not effectively conform to the provisions of the applicable legislation for the organisation of official education with regards to teaching universal accessibility and design for all. Therefore, it can be concluded that the skills required to produce accessible content for digital media are not being sufficiently developed among future journalists.

From the 196 teaching guides belonging to 25 journalism degrees, only nine of them have explicit content on the rights of disabled people with regards to access to information and on the production of digital content under universal accessibility parameters. This represents 4.6 % of the subjects analysed. This figure increases if teachers’ comments are taken into account, detecting 24 different good practices apart from those already identified during the analysis of the teaching guides.

Therefore, adding both sources, at least 33 subjects would be available in which contents on attention to diversity and design for all are contemplated. This represents 16.8 % of the sample analysed. This fact shows that these contents are beginning to appear in official journalism degrees, although there is a great deal of room for improvement. Of the 33 subjects that include content on attention to diversity and universal accessibility, 25 of them are taught in public universities compared to eight in private universities. Likewise, the time dedicated to these subjects is still scarce, since 82.1 % of the teachers consulted state that they spend less than three hours per term on said subjects.

The publication “*Formación Curricular en Diseño para Todas las Personas en Periodismo*” (“Curricular Training in Design for All in Journalism”) (Crue *Universidades Españolas*, 2016) provides a content base that would be necessary to include in journalism degrees for future media professionals to be inclusive. Based on the results of this research, it is considered that the following issues be increased in official journalism degrees:

1. Requirements, barriers and preferences of groups at risk of digital exclusion with regards to access to information.



2. Visibility of the disability: correct terminology, inclusion of workers with disabilities and development of content on disabilities.
3. Legal framework regarding the right to access information.
4. Accessibility standards applicable to the media.
5. Accessible graphic design: colour, font and composition.
6. Application of accessibility characteristics on web content: HTML and CMS properties.
7. Image accessibility: selection and description of images and infographics design.
8. Accessibility of audiovisual content: audio description, subtitling, sign language and transcription.
9. Creation of easy-to-read content.
10. Accessibility in social media content management.
11. Inclusion of accessibility in the selection of documentary sources.
12. Integration of user experience to improve the quality of content.

This knowledge of accessibility should also be based on the most widespread standards, such as the Web Content Accessibility Guidelines (W3C, 2018) and other technical reference standards (UNE 2018, 2019).

Lastly, and although the creation of a subject on “Universal Accessibility and Attention to Diversity” may be advisable in the future, there is no doubt that there is still a lot of transversal work to be done so that the students’ technological skills in this subject are strengthened. To this end, as Youngblood, Tirumala and Gálvez (2018:342) state that continuous evaluation of teaching work is needed regarding these issues: "We need more research into how we teach accessibility and we need to share our pedagogical successes and failures (...) We need to find out how well accessibility is integrated into existing electronic media curricula (...) We need to be good role models and make sure our own material is accessible. We need to help students develop the empathy to convince them that accessibility is “the right thing to do”".

5. REFERENCES

Agencia Nacional de Evaluación de la Calidad y Acreditación (2005). *Libro Blanco Títulos de Grado en Comunicación*.

Boletín Oficial del Estado (2013). 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”. Madrid, 3rd December 2013. Recuperado de <https://bit.ly/36BB5ck>

Boletín Oficial del Estado (2007). Ley Orgánica 4/2007, de 12 de abril, por la que se modifica la Ley Orgánica 6/2001, de 21 de diciembre, de Universidades. Madrid, 12th April 2007. Recuperado de <https://bit.ly/3aSORwr>



- Boletín Oficial del Estado (2007b). Real Decreto 1393/2007, de 29 de octubre, por el que se establece la ordenación de las enseñanzas universitarias oficiales. Madrid, 29th October 2007. Recuperado de <https://bit.ly/38QEcg>
- Cabañero, A. A. y Luján, S. (2012). *Estudio sobre la accesibilidad de los sitios web de medios de comunicación*. Repositorio Institucional de la Universidad de Alicante. Recuperado de <https://bit.ly/2U8qinm>
- Casasola, L. A.; Guerra, J. C.; Casasola, M. A.; Pérez, V. A. (2017). La accesibilidad de los portales web de las universidades públicas andaluzas. *Revista Española de Documentación Científica*, 40 (2).
- Crue Universidades Españolas (2016). *Formación Curricular en Diseño para Todas las Personas en Periodismo*.
- Discapnet (2007). *Accesibilidad en los diarios digitales españoles*. Observatorio de Accesibilidad TIC. Recuperado de <https://bit.ly/2O4jNhJ>
- Discapnet (2016). *Accesibilidad de los principales medios digitales de comunicación*. Observatorio de Accesibilidad TIC. Recuperado de <https://bit.ly/2RYYbob>
- Ellis, K.; Goggin, G.; Haller, B. & Curtis, R. (Eds) (2019) *The Routledge Companion to Disability and Media*. Routledge.
- Gabel, S. L., y Miskovic, M. (2014). Discourse and the containment of disability in higher education: An institutional análisis. *Disability & Society*, 29(7), 1145-1158. <https://doi.org/10.1080/09687599.2014.910109>
- Garabal, J. (2015). Universidad y diversidad funcional: aproximación a la inclusión en el ámbito universitario. *Revista de Estudios e Investigación en Psicología de la Educación*, 8, 33-37. <https://doi.org/10.17979/reipe.2015.0.08>
- García de Sola, M. (Coord.) (2006). *Libro Blanco para el Diseño para todas las personas en la Universidad*. Madrid: Fundación ONCE, Instituto de Mayores y Servicios Sociales.
- Gómez-Calderón, B., Roses, S. y García-Borrego, M. (2017). Los nuevos perfiles profesionales del periodista desde la perspectiva académica española. *Revista Mediterránea de Comunicación*, 8(1), 191-200. <https://doi.org/10.14198/MEDCOM2017.8.1.14>
- González-Perea, L. (2018). La accesibilidad de los medios de comunicación digitales en España: responsabilidad de los periodistas en la generación de contenidos inclusivos. *Index.comunicación*, 8(1), 225-253. <https://bit.ly/2RZEbSd>
- Jaume, J., Perales, F. Negre-Bennasar, G. y Fontanet, G. (2019). El diseño web y material didáctico accesible en la enseñanza universitaria. RED. Revista de Educación a Distancia. 59-06. DOI: <http://dx.doi.org/10.6018/red/60/06>
- Langørgen, E. y Magnus, E. (2018). We are just ordinary people working hard to reach our goals! Disabled students' participation in Norwegian higher education. *Disability & Society*, 33(4), 598-617. <https://doi.org/10.1080/09687599.2018.1436041>



- Love, T. S. et al. (2014). STEM Faculty experiences with students with disabilities at a Land Grant Institution. *Journal of Education and Training Studies*, 3(1), 27-38. <https://doi.org/10.11114/jets.v3i1.573>
- QS Quacquarelli Symonds (2017). QS World University Rankings. Communication & Media Studies. Recuperado de
- Pastor, C. A, Antón Ares, P. (2008). Aprendizaje permanente del profesorado y TIC. Una experiencia de cooperación al desarrollo en Nicaragua, Paraguay y República Dominicana, *Revista Latinoamericana de Tecnología Educativa*, 7- 1, 97-106.
- Royal, C. (2004). Teaching web design in journalism and mass communications programs: Integration, judgment, and perspective. *Journalism & Mass Communication Educator*, 59, 399-414.
- Sánchez-García, P. y Marinho, S. (2016). La formación digital en los programas de periodismo de España y Portugal. *Andamios*, 13(31), 339-361. Recuperado de <https://bit.ly/2UdzYxb>
- Tejedor, S. (2010). *Ciberperiodismo: Libro de estilo para Ciberperiodistas*. Itla Editorial, Santo Domingo (República Dominicana). Recuperado de <https://bit.ly/36xLUfy>
- UNE (2019). UNE-EN 301549:2019. Requisitos de accesibilidad de productos y servicios TIC. Ministerio de Política Territorial y Función Pública. Recuperado de <https://bit.ly/36FNiwC>
- UNE (2018). UNE 153101:2018 EX. Lectura fácil. Pautas y recomendaciones para la elaboración de documentos.
- Vlachou, A., y Papananou, I. (2015). Disabled students' narratives about their schooling experiences. *Disability & Society*, 30(1), 73-86. <https://doi.org/10.1080/09687599.2014.982787>
- W3C (2018). Web Content Accessibility Guidelines (WCAG) 2.1. Recuperado de <http://www.w3.org/TR/WCAG21/>
- Youngblood, N. E.; Tirumala, L. N. & Galvez, R. A. (2018). Accessible Media: The Need to Prepare Students for Creating Accessible Content. *Journalism & Mass Communication Educator*, Vol. 73(3), 334–345. <https://doi.org/10.1177%2F1077695817714379>

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