



## New technologies applied to the inclusion of people with disabilities in the digital society: A challenge for communication, education and employability

Nuevas tecnologías aplicadas a la inclusión de las personas con discapacidad en la sociedad digital: Un reto para la comunicación, la educación y la empleabilidad

Novas tecnologias aplicadas à inclusão de pessoas com deficiência na sociedade digital: Um desafio para a comunicação, educação e empregabilidade

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## Abstract

The new technologies have contributed to increased autonomy for people with disabilities and to the reduction of their technological gap through the acquisition of digital skills, which has enhanced their dignity in society and reinforced inclusive social values. Moreover, there continues to be a gap between the personal identity of people with disabilities and their own social construction. Although the negative image conveyed by the media in the past has nearly disappeared, the dichotomous depiction of people with disabilities as either heroes or victims continues to obstruct their inclusion in the public sphere. Despite this situation, we see on social networks how the self-portrayal of people with disabilities is starting to promote diversity in the fields of beauty and fashion. These achievements, together with the additional impetus provided by both educational innovation programmes and corporate purpose initiatives of organisations, have led to new employment opportunities that go beyond the stereotyped professions traditionally assigned to people with disabilities. The acquisition of digital skills is vital in meeting the challenges that are work-related, cultural, and social, which are being posed by the current digital environment.

**Keywords:** Communication; disability; education; employability; inclusion; technology

## Resumen

Las nuevas tecnologías han contribuido a una mayor autonomía de las personas con discapacidad y a la reducción de su brecha tecnológica a partir de la adquisición de competencias digitales, mejorando así su dignidad de vida y los propios valores sociales inclusivos. También continúa existiendo una brecha entre la identidad personal y la construcción social de las personas con discapacidad. Aunque casi ha desaparecido la imagen negativa que en otras épocas transmitieron los medios de comunicación, la representación dicotómica como héroe o víctima aún las aleja de la inclusión en la esfera pública. Pese a ello, en redes sociales se aprecia cómo la autorrepresentación de las personas con discapacidad comienza a fomentar la diversidad en los ámbitos de la belleza y moda. Estos avances, junto al impulso adicional que han proporcionado tanto los programas de innovación educativa como el propósito corporativo de las organizaciones, han propiciado nuevas oportunidades de empleabilidad que van más allá

de los estereotipados perfiles profesionales que tradicionalmente se han asignado a las personas con discapacidad. La adquisición de las competencias digitales es clave para afrontar los retos laborales, culturales y sociales que plantea el actual entorno digital.

**Palabras clave:** Comunicación; discapacidad; educación; empleabilidad; inclusión; tecnología

## Resumo

As novas tecnologias contribuíram para o aumento da autonomia das pessoas com deficiência e para a redução da sua lacuna tecnológica através da aquisição de competências digitais, melhorando assim a sua dignidade de vida e valores sociais inclusivos. Também continua a existir uma lacuna entre a identidade pessoal e a construção social das pessoas com deficiência. Embora a imagem negativa transmitida pelos média no passado tenha quase desaparecido, a representação dicotómica como herói ou vítima ainda os afasta da inclusão na esfera pública. Apesar disto, nas redes sociais, pode-se ver que a autorrepresentação das pessoas com deficiência começa a promover a diversidade nos campos da beleza e da moda. Estes desenvolvimentos, aliados ao impulso adicional dado tanto pelos programas de inovação educacional como pelo objetivo empresarial das organizações, levaram a novas oportunidades de empregabilidade que vão para além dos perfis profissionais estereotipados tradicionalmente atribuídos às pessoas com deficiência. A aquisição de competências digitais é fundamental para responder aos desafios laborais, culturais e sociais colocados em torno da sociedade digital.

**Palavras-chave:** Comunicação; deficiência; educação; empregabilidade; inclusão; tecnologia

## 1. Introduction

Traditionally, people with disabilities have been poorly represented in educational policies, programmes and curricula, which has led to problems of adaptation (Ostiguy, 2018), barriers to the implementation of inclusive education (Rodríguez-Herrero et al., 2021), stigma, and discrimination (Cureton, 2022). In addition, low employment rates of people with disabilities are currently a major concern (Sannicandro et al., 2018), due to their scarce representation (Scanlon et al., 2020), yet they are being increasingly recognised in Europe (Vornholt et al., 2018). Nevertheless, they are still less likely to enter the labour market (Stewart & Schwartz, 2018), which is related to their lack of visibility in the media (Stewart & Spurgeon, 2020), as they are subject to bias (Tsatsou, 2021). This situation has influenced the way they are perceived socially (Shiome & Ito, 2022), and it continues to foster stigmatisation, or ableism, of people with disabilities (Campbell, 2009).

## 2. Methodology

This article provides information regarding the state of the issue of current research trends on the inclusion of people with disabilities, from the perspective of the new technologies applied to education, communication, and employment. Therefore, the study begins by analysing this concept in order to support the research collected from the different articles that comprise this monograph, which has been carried out in a way that is theoretical, qualitative, and interpretive (George-Reyes, 2019).

## 3. Higher education in the current society

Three essential categories have been identified in predicting success in higher education for people with disabilities: the first is personal characteristics; the second is academic and social engagement, including parental expectations and socio-economic status (Qian et al., 2020); and the third is adaptation (Kutscher & Tuckwiller, 2019), whether curricular, infrastructural, or technological (Pivik et al., 2022), which should ideally converge toward inclusive educational practices that foster diversity and a sense of belonging (Reeves et al., 2022).

In this regard, professors are demanding more information on inclusive practices based on scientific evidence in order to introduce successful teaching practices (Van-Mieghem et al., 2020). Some essential factors for ensuring inclusive education are a positive attitude from professors toward their students with disabilities, the need for rational adaptation of methodologies, assessments and resources in order to safeguard learning, and the use of technology to enable access to learning (López-Gavira et al., 2021).

Recent studies have called for expanding inclusion in higher education beyond support, adaptation, and learning spaces to include residential and family life, as well as participation in campus activities, student organisations, social relations, and even employment. Such an approach would comprehensively address not only knowledge, but the development of other essential skills as well, such as autonomy, self-determination, and social competence, among others, which would be indicators of successful inclusive education (Bumble et al., 2019). On the other hand, recent systematic reviews have identified three major barriers to access and participation for students with disabilities: infrastructure, technology, and resources that are nearly inaccessible and not well-adapted; a teaching-learning process in which professors lack the ability to promote inclusion in the classroom; and insufficient, poorly funded institutional support in providing specific services (Fernández-Batanero et al., 2022).

Although the university community, and especially the faculty, generally display a positive attitude toward students with disabilities (Polo-Sánchez et al., 2018), learners whose

impairments are not visible often choose not to disclose their disability in order to be mainstreamed, despite the risk of forgoing the support to which they are entitled. They do this to avoid being branded as disabled (Morina, 2022).

A total of 80% of the medical students in the USA believe their education regarding disability is insufficient, and they feel less comfortable attending people with disabilities (Chardavoyne et al., 2022), which highlights the importance of continuous development in relation to integrating knowledge and specific aspects of this group into the educational curricula. Nevertheless, it has become clear that the most significant barrier to integrating all such knowledge into the learning curriculum is the lack of time (Lee et al., 2023). In any case, formal university education is far from a job-ready paradigm in which graduates are fully prepared to work in their professions from day one (Moore & Morton, 2017).

In short, digital technology contributes to increased participation and motivation, as well as improved social and communicative development, while reducing gaps for certain types of disabilities, and ultimately bringing academic achievement closer (Mikropoulos & Iatriaki, 2023) by being a tool for educational inclusion (Medina-García et al., 2021). In spite of this, many professors are unaware of the importance of assistive technology in supporting the needs of these students until they come into contact with real situations (Baser & Arslan-Ari, 2022). Some authors have even gone so far as to claim that ensuring access to information for people with disabilities can prevent a kind of modern-day slavery that could undermine inclusion, security, and fairness (Wailes & Mackenzie, 2023).

In addition to technological support, other factors that help increase their participation and enhance learning include frequent, clear, and accessible communication between students with disabilities and their professors, as well as other stakeholders such as support staff, and even their own classmates as well (Watts et al., 2023).

Beyond stigma on the one hand and opportunities on the other, the evidence shows that people with disabilities are still less likely to complete higher education, enter the job market, and earn an income equivalent to the rest of society (Berrigan et al., 2023). Moreover, there is a need to develop legislation even further in order to continue making strong progress, but also for the purpose of raising awareness in all areas of society so that lack of access and continued stigma can be overcome (Shpigelman et al., 2022). Finally, there is also a need to recognise that all students are important and capable of learning when attitudes and conditions are suitable (Morina et al., 2020).

## 4. Digital communication and people with disabilities

### 4.1. The digital divide paradigm

As technology and digital communication offer valuable opportunities to improve the living conditions of a large percentage of the population, it is worth inquiring into the state of the issue from the viewpoint of disabled people. It can be observed, *a priori*, that the digital divide continues to be a major concern, as this inequality might be caused by a combination of several factors, such as the lack of access to technology, a shortage of digital skills, inadequate accessibility to content, and limited adaptability of digital products. According to a report entitled *Tecnología y Discapacidad* [technology and disability], from the Adecco Foundation (2022), more than half of the respondents (n=300) claim to have encountered barriers in the use of new technology. This statistic is relevant, if we consider that in the same study 75% of those surveyed recognised that the new technologies and social networks had made a positive contribution to strengthening the social fabric related to disability.

At the institutional level, the Spanish Government has developed specific programmes to reduce this gap. One example is the roadmap known as *España Digital 2026*, which has drawn up key guidelines for the digital transformation by focusing on three areas: infrastructure and technology; the economy; and people. In the latter case, that of people, special emphasis is placed on the need to strengthen digital skills, thereby reducing potential digital inequalities.

To address this situation, the framework of this initiative is specifically outlined in the Spanish Disability Strategy 2022-2030 (Ministry of Social Rights and 2030 Agenda, 2022). Its strategic challenges include digitisation that is inclusive, as well as several objectives and courses of action to be developed, such as the following: one is the “promotion of the acquisition of digital skills by people with disabilities or, failing that, the necessary support for access to digital services and media” (Ministry of Social Rights and 2030 Agenda, 2022, p.89); another is the “promotion and support for access to websites and mobile applications in the private sector” (p.91), among others.

Also noteworthy is the unique work being carried out by certain foundations in this regard, which focus on digital literacy (García-Prieto, 2016). One example is The Vodafone Spain Foundation, which collaborates with various organisations to implement training programmes as part of its V-Talent strategy, the aim of which is digital inclusion. This ICT training ranges from cognitive accessibility to programming and training for employment. Similarly, the Telefónica Foundation has created the Telefónica Foundation Lab, a space that promotes training in digital skills for vulnerable people. These public and private collaborative efforts are essential in order to enhance training and equality of opportunity.

## 4.2. Presence and self-portrayal of people with disabilities on social networks

On the other hand, it has been revealed that people with disabilities have digital resources that are more associated with communication and social networks than with aspects of management or the purchase of products, services, or food. Nevertheless, 25.7% acknowledge that they do not have any of these benefits (Martínez & Esteve, 2020). Addressing this digital divide also means adopting a multi-faceted approach capable of integrating diversity and differences according to each disability. Martínez and Esteve (2022) have applied this principle and delved into the use of social networks. Among the conclusions, they found that digital communication tools are used mostly in cases of visual and intellectual disability, which comprised more than 60% of the people surveyed (n=390). Facebook is the most widely used service, especially among people with hearing and intellectual impairments, closely followed by Instagram for people with hearing and mental health issues. Twitter is used mostly by people with sensory disabilities at the rate of more than 30%. This is followed by Telegram and LinkedIn, which are only slightly used as a professional network, as their use is more common among people with visual and physical disabilities at the rate of between 14.5 and 16%, respectively. Only 2.3% said they were not present on any website or app, with this situation being especially common among people with intellectual disabilities or mental health impairments.

Bonilla and Sánchez (2022) carried out a similar study and found WhatsApp (90.6%) to be the most widely used platform, followed by YouTube (59.4%), Instagram (28.1%), and Facebook (15.6%). In terms of the reasons for use, the first is the need to communicate with friends (93.8%), followed by contact with family (59.4%), professors (43.8%), and for entertainment purposes (78.1%). Educational professionals report that social networks promote the integration of young people and help them improve interpersonal relationships with others. This finding is consistent with other studies that highlight the positive experiences of using social media in terms of building friendships, the development of social identity and self-esteem, and entertainment (Caton & Chapman, 2016).

Regarding the use of social networks as platforms for the self-presentation of people with disabilities, it seems that Instagram is used more often. Regarding content, analyses of posts by influencers with disabilities (n=400) show that nearly half of the publications are of a personal nature (46%), followed by recommendations and promotional content (21%), and posts related to disability issues (14%). By contrast, topics linked to the specialisation or interests of the profiles analysed were clearly less represented at the following rates: fashion and beauty (7%), sport (6%), and humour (3%) ( Bonilla-del-Río et al., 2022).

Lapierre (2022) points out that the media scope of influencers with disabilities should break away from the *ableist* frame of reference and embrace other topics of discussion that allow for dialogue between peers. The author also points out that “the use of accessible formats for blind and deaf people, or easy reading, could become universally accessible,

thereby becoming a tool for activism” (p.238). Thus, the accessibility of content is a pending task, not only for people with disabilities, but for content creators with disabilities as well. Bonilla-del-Río et al. (2022) have addressed this issue by using alternative text, subtitles, and sign language as variables of analysis. They concluded that 93% of the posts analysed (n=372) did not incorporate any of these features.

### **4.3. Disinformation, disability and inclusive media literacy**

In the era of disinformation, the upsurge of digital propaganda (Rodríguez-Fernández, 2021), together with increasingly refined and complex deception, has transformed media literacy into a top priority for all citizens. The relationship between disinformation and disability can be approached from several points of view. Firstly, it must be acknowledged that people with disabilities are an especially vulnerable group. There are hardly any specific studies that address this issue, which makes it impossible to design tailored media literacy programmes focused on diversity.

A total of 96% of professionals and family members consider the Internet to be either quite unsafe or not safe at all for people with intellectual disabilities. Among the issues that most concern them are the possible infringement of rights involving the display of disabled peoples’ personalities on social networks, the risk of having their personal information used inappropriately, the demand for photos (sexting), the possibility of receiving ill-suited content, and being insulted or belittled (Chiner et al., 2016).

From a legal standpoint, their protection in digital environments must encompass both the regular use of social networks as well as the issuance of consent forms in order to authorise the processing of personal data or allow specific intrusions into their personality jurisdiction by third parties (Martínez, 2022). Therefore, in the same way that platforms are under pressure to carry out appropriate content curation to act as a firewall, they should also be made aware of the measures that need to be taken to protect people who are especially vulnerable.

Secondly, disinformation regarding disability is also an issue, as disabled people are often portrayed as having a lack of knowledge and information. Consequently, as many people perceive this disinformation to be true, stereotypes and prejudice continue, thereby reducing inclusion and equal opportunity. On this point, several specific measures are starting to emerge that focus on debunking myths and providing highly specialised information. One that stands out is the *Discamedia* initiative, a news portal focused on dispelling hoaxes and explaining issues related to disability.

Thirdly, disinformation techniques include the use of hate speech. The fragmentation of society, which is typical of this type of digital propaganda strategy, involves undermining basic pillars of democracy such as respect for diversity and differences. Along with



disability, other vulnerable factors include gender, age, sexual orientation, and ethnic origin, which exacerbate the situation of exclusion.

In Spain, reports of hate crimes against people with disabilities increased by 69.2 % in 2020 (Ministry of Interior, 2021). Although the figures were very low in 2019, the pandemic aggravated the situation, and the current data require an obligation to continue raising awareness. Although most hate crimes take place in the street, contemptuous acts are frequently carried out on the Internet and social networks as well, which leads us to believe that inclusive media literacy and the portrayal of diversity in digital environments are still pending challenges. Therefore, just as technology companies are called upon to engage in content curation and implement technological measures to prevent disinformation, we as a society must demand more inclusive access to technology and multi-faceted training that also encompass vulnerable groups.

## **5. Employment of people with disabilities: Impediments, challenges, and opportunities**

### **5.1. Key data on employment and disability in Spain**

Entering the job market is one of the main challenges faced by people with disabilities. In Spain, there are nearly two million citizens of working age with a certified disability (1,929,400), which is 6.3% of the total working-age population. This group is employed at the rate of only 26.9%, which is unfavourable compared to the rest of the population (Table 1), for whom the employment rate is 66.3%. Nevertheless, there was a slight increase of 0.2 points in 2021 compared to the previous year (*Instituto Nacional de Estadística [INE], 2022, p.1*).

For companies with more than 50 employees, disabled people must comprise 2% of the workforce (RD 1/2013, of 29 November), compared to the 7% reserve of the positions advertised. For people with intellectual disabilities in particular, Public Administration is required to have 2% of its staff comprised of people from this group (Order HFP/688/2017, of 20 July), although these positions are not filled in 46% of the cases (Ministry of Finance and Public Function, 2022, p.11). The majority of disabled people are private sector employees, 74.9% of whom have a permanent contract (INE, 2022, p.7), although in recent years there has been a significant trend toward temporary contracts (Odismet, 2021, p.39). Most of these people work full time (81.6%), although this percentage is five points lower than that of non-disabled workers. Regarding sectors, their presence is notable in the services area, where 81.4% are employed (INE, 2022, p.7).

As women comprise 43.7% of the disabled people who are employed, the gender gap is more noticeable in this group compared to the overall data, where the percentage of females is 46.2% (INE, 2022, p.2). Moreover, their annual salary is lower than that of men by more than €2,100 (Odismet, 2023, p.61). Likewise, there is also inequality according to age, with the highest employment rates in the 25-44 segment (35.4%), with very low rates among the youngest (8%) (INE, 2022, p.5). A mid to low-level of education has also been observed, as 61.3% of those who are employed have completed secondary education or specific insertion programmes to help people with disabilities enter the job market, with a total of 31.4% having obtained a university degree (INE, 2022, p.75). It has also been noted that 46.5% and 49.2% of those employed have completed technical school training and further education, respectively (INE, 2022, p.2).

Table 1. Employment figures for people with disabilities compared to the rest of the population

	Disabled people (%)			Non-disabled people (%)		
<b>Employment rate</b>	26.9			66.3		
<b>Employment by gender</b>	Men	Women		Men	Women	
	56.3	43.7		53.8	46.2	
<b>Employment rate by age group</b>	16-24 years	25-44 years	45-64 years	16-24 years	25-44 years	45-64 years
	8	35.4	25.8	23.2	76.6	71.1
<b>Employment by educational level</b>	Illiterate/primary school	Secondary education/insertion programmes	Higher education	Illiterate/primary school	Secondary education/insertion programmes	Higher education
	7.3	61.3	31.4	4.3	46.5	49.2

Source: created by the authors based on a report from the INE (2022).

In any case, the likelihood of being employed in the labour market are determined by the type and degree of disability as well. People with a hearing impairment have the highest employment rate at 55.5%, compared to 27.5% for those with an intellectual impairment, which is the group with the lowest rate of employment. Visual and physical disabilities also show activity rates above 40%. Regarding levels, with lower degrees of disability the employment rate exceeds 54.2%, but with higher degrees the rate barely reaches 12% (INE, 2022, p.6).

All of the above show an unemployment rate of 22.5% in 2021, slightly higher (0.3 points) than in the preceding year, and 7.8 points higher than the rate for the non-disabled population (INE, 2022, p.3). These figures reflect a certain degree of recovery from the circumstances caused by the COVID-19 pandemic in 2020, when contracts for people with disabilities fell by 26% (Adecco Foundation, 2021, p.7), yet the levels still have not rebounded to those of 2019 (Odismet, 2023, p.41). In any case, the disabled group as a

whole experiences higher unemployment rates, and for longer periods of time. A total of 43.3% of jobseekers have been unemployed for more than 24 months (SEPE, 2023, p.34), and their rate of AROPE (At Risk of Poverty and Exclusion) rose to 30.6% in 2022 (EAPN, 2022). Among the reasons for the hesitancy of companies to hire professionals with disabilities, those that stand out are doubts about performance, relationships with the rest of the workers, and modifications of work spaces (Ellis, 2016). A change in these biased views seems necessary, which can be achieved if disabled people are given the opportunity to demonstrate their skills. There is also a need to improve the acquisition of professional and technological skills demanded by the job market.

## **5.2. The most in-demand professions in the labour market and implications for the employment of people with disabilities**

The rise of new technologies implies “the transition toward new social systems built on the infrastructure of the information revolution” (Sainz de Vicuña, 2020, p.24). In this continuous transformation, accelerated by the COVID-19 pandemic, Spanish companies have progressed in data management and analysis, Artificial Intelligence (AI), and cloud computing (National Observatory of Technology and Society, ONTSI, 2023, p.5). Consequently, new professional profiles and competencies closely related to digital skills have emerged, giving rise to the most in-demand professions.

Table 2. The professions that are most in-demand

<b>Professions</b>	<b>Field</b>
1. E-commerce specialist	Digital marketing
2. Data analyst and big data scientist	Big data
3. Web analyst	Digital marketing
4. Cloud-computing architect	Big data
5. Cybersecurity specialist	Cybersecurity
6. Data protection and privacy lawyer	Data protection
7. Specialist in Artificial Intelligence	AI and robotics
8. Expert in CRM (Customer Relationship Management)	Digital marketing
9. Automation engineer	AI and robotics
10. Digital marketing expert	Digital marketing

Source: created by the authors based on data from Socarras-García (2022).

Digital marketing, big data management, and AI are among the fields with the most job opportunities. Others such as health and logistics should also be added (Adecco, 2021, p.16). Most of these are environments that require extensive mastery of digital tools, which can be an advantage for people with disabilities (De-Oliveira-Schultz-Ascari et al., 2021). Teleworking is also part of this job setting, which is performed by 12.5% of the workers in Spain on a regular basis (100% of their work days), and 6.1% on an occasional basis (more than half of their work days) (ONTSI, 2023, p.5). Teleworking can alleviate the difficulties that commuting might entail for this group and can transform the traditional concept of disability, as the features commonly associated with disabled people are placed in the background (Pérez-Roldán, 2021, p.23). It can also provide flexibility for these people, which is especially beneficial, although this aspect sometimes disguises cases of precariousness and job insecurity (Qu, 2020).

People with disabilities are capable of acquiring the digital competencies and skills required by many of these professions. However, as always, not all of these people have the same ability. We must also bear in mind the wide range of circumstances within the domain

of disability, and focus on what all of us can do to help promote these people (Herrero-de-la-Fuente et al., 2022), taking into consideration both training and the opportunities provided by technology.

### **5.3. Accessible technology as a driving force in the employment of disabled people**

The everyday impact of technology on people with disabilities has been investigated from multiple perspectives in recent years (McDonald & Clayton, 2013; Tsatsou, 2021). The focus of these studies has been on the importance of digital tools in accessing employment (Roulstone, 2016), as well as offering support for entrepreneurship (Boellstorff, 2019), without ignoring the fact that the high cost and lack of access to digital devices and websites is resulting in further exclusion of this group (Lindsay 2011; Palmer et al. 2012).

In Spain, the perception of people with disabilities regarding technological resources is generally positive, yet there are nuances. A report published by the Adecco Foundation (n=700) reveals that 68% of those surveyed consider these tools to be an ally, especially for entering the job market. However, 32% fear the implications of AI, especially if used for recruitment (2021, p.8). Among the respondents who are employed, 72% say that new technology helps them perform their jobs. Of these, 18% use adapted tools, while six in ten use conventional technology (p.9).

Regarding the accessibility of digital devices, 48% of the respondents say they encounter obstacles in using them. Of these, 45% say they find their use “very complex”, and 29% find it difficult to use certain devices (Adecco, 2021, p.12).

Accessible technology is a key factor in allowing people with disabilities to enter the job market, and it affects their training opportunities as well. Thus, the International Labour Organisation warns that “people with disabilities must be present from the beginning of the technological design process, in order to ensure that accessibility is taken into account from the start” (ILO-ONCE Foundation, 2021, p.30). The so-called “universal design”, or “design for all”, makes technological resources inclusive for as many users as possible, without the need for adaptations. This benefits not only the elderly, but also people who have temporary impairments as well. The inclusive nature of digital resources should also be extended to the area of websites and social media, which must be designed and developed to be user-friendly for all groups of users. This includes graphics, tables, page titles, tabs, and more. The aim should be to make navigation possible with a screen reader or other assistive technology. In Spain, Law 11/2023 on accessibility has just been passed, which requires public administration, universities, and certain companies (banks, and suppliers of basic services such as water, electricity, telephony, etc.) to offer their web content in an accessible format.

## 6. Conclusions

People with disabilities have historically suffered exclusion and stigmatisation, or ableism, in the area of education, media, and access to employment. Despite this situation, the new technologies offer opportunities to alleviate these biases and expand the options available to this group for participation and motivation. Thus, despite lingering problems of accessibility, higher education is enabling technological adaptations to be merged with traditionally available curricula in the search for inclusion and a sense of belonging in today's society, which is highly diverse. These efforts are promoting not only knowledge, but essential skills for people with disabilities as well, such as independence and social competence. Unfortunately, however, the digital divide continues to exist, causing inequality due to limitations in accessing content. In spite of this situation, however, the rapid growth of social networks has created an environment that is fostering the social integration of people with disabilities and is allowing them to reassert their digital identity in order to be recognised by society. Nevertheless, this does not obviate the increasing need for media literacy to ensure that the digital context is safe for people with disabilities, with less exposure to the phenomenon of disinformation and hate speech. The difficulty in securing employment due to the hesitation of companies in hiring disabled people for key positions, above and beyond their policies of social responsibility, sustainability and compliance with SDGs, implies lower purchasing power for this group compared to the general population. The latter is employed at a rate that is nearly three times higher than the former, which is contributing to the phenomenon of *invisible disabilities*, as these people often refuse to accept help in order to avoid being designated disabled. Finally, in order to reverse this situation, one of the keys might be to further develop the digital skills of this group, and to improve the access to digital devices for these people as well.

## Author contributions

**Luis Mañas-Viniegra:** Conceptualization, Investigation, Supervision, Writing- review and editing. **Leticia Rodríguez-Fernández:** Conceptualization, Investigation, Writing- review and editing. **Mercedes Herrero-de-la-Fuente:** Conceptualization, Investigation, Writing- review and editing. **Ana Isabel Veloso:** Conceptualization, Writing- review and editing. All authors have read and agree with the published version of the manuscript. The authors declare that they have no conflicts of interest.

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