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Digitalization and integrated employment for persons with intellectual disabilities

Leady V. Fajardo-Castro^a, Vicente Martínez-Tur^{a,*}, Carolina Moliner^a, Eva Lira^b, Esther Gracia^a

^a IDOCAL, University of Valencia, Valencia, Spain

^b Universidad de Zaragoza, Spain

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ABSTRACT

Background: Digitalization is transforming our world cross-sectionally, affecting the work of individuals with intellectual disabilities (ID). Based on the socio-technical approach, digitalization must respect the employability and quality of life of individuals with ID.

Aims: This research analyzed the challenges and identified the opportunities stemming from digitalization for integrated employment.

Methods and procedures: We conducted two studies. Building on the grounded theory, we analyzed the content of semi-structured interviews (Study 1) using three information sources: experts in technology and ID, workers with ID, and team supervisors in which at least one individual with ID works. Second, we implemented a Delphi method (Study 2) with the participation of experts in technology and ID.

Results: The results identified three main themes: characteristics of new professional profiles, opportunities generated by digitalization, and support that can promote the autonomy of individuals with ID.

Conclusions and implications: Our study emphasized the need to adapt professional profiles, develop necessary skills, and strengthen support systems. This study takes a significant step toward identifying promising practices for adapting to digitalization in integrated employment. Results also highlighted the importance of a coordinated effort involving employers, the third sector, family members, and public administration in promoting integrated employment.

What this paper adds: This article presents two research studies examining the relationship between digitalization and integrated employment for individuals with intellectual disabilities. First, we analyzed semi-structured interviews conducted with experts in digitalization and intellectual disabilities, individuals with intellectual disabilities currently employed in integrated settings, and team supervisors with at least one team member with intellectual disabilities. Second, we conducted a Delphi study involving experts in digitalization and intellectual disabilities. Overall, digitalization is perceived not as a threat but as an opportunity. Although there are potential risks of job loss, digitalization also offers opportunities to promote integrated employment. These opportunities, identified in our research, will require collaborative efforts from employers, third-sector organizations, family members, and public administration.

* Correspondence to: University of Valencia, Facultat de Psicologia i Logopèdia, Campus de Blasco Ibáñez, Av. Blasco Ibáñez, 21, València 46010, Spain.

E-mail address: vicente.martinez-tur@uv.es (V. Martínez-Tur).

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1. Introduction

Individuals with disabilities face more difficulties in accessing integrated employment (Baldwin & Marcus, 2011; United Nations, 2019), especially when they have greater support needs (i.e., intellectual disabilities). The challenges of accessing integrated employment could increase with digitalization. The types of job activities traditionally performed by individuals with intellectual disabilities (ID) may increase their vulnerability in the technological transition. It should be noted that when these individuals work in integrated employment, they tend to engage in manual tasks requiring low qualification (Livermore et al., 2017; Taanila et al., 2005) that technological systems can potentially perform.

With this in mind, this study conducted an in-depth analysis of the challenges and opportunities presented by technological change linked to digitalization in the integrated employment of individuals with ID. The study focused on identifying the tasks performed by individuals with ID in integrated employment, the use of technology in their job roles, the skills that will be required in the future, the opportunities that technology provides for their career development, and the optimization of support systems for their adaptation in this evolving technological transition environment. Two complementary strategies were implemented to achieve these goals. We carried out a content analysis of semi-structured interviews with workers with ID, experts in both technology and integrated employment, and supervisors of workers with ID. The present study also carried out statistical analyses of Delphi group responses from experts in technology and ID.

2. Theoretical background

The socio-technical approach originated in the 1950s at the Tavistock Institute of Human Relations (United Kingdom) and was interested in worker-machine interaction in the industrial context. It suggested that there is no single way to implement technological change (Guest, 2022). Individuals and societies are potentially free to decide the best path, which will be the one that achieves a balance between productivity and the quality of life of workers (Guest, 2022; Mumford, 2006). To better understand the role of digitalization in integrated employment for individuals with ID, it is essential to highlight some fundamental principles of the socio-technological approach. First, technology can change the nature of work (Trist et al., 2013). This is crucial in understanding how technologies can be adapted to the capabilities of individuals with ID to facilitate their effective participation in the workforce (Lancioni et al., 2014). Second, job enrichment is reinforced by including tasks that incorporate features such as autonomy, variety, complexity, and social support (Waschull et al., 2022). This is relevant because a job design based on enrichment can facilitate the effective participation of workers with ID, for example, through supported employment programs (Cimera, 2014) or customized employment (Riesen & Morgan, 2018). This job enrichment should be compatible with digitalization. Third, the socio-technical approach is interested in enhancing the personal development of workers (Mumford, 2006). To achieve successful integrated employment for individuals with ID, organizations need to implement digitalization processes promoting learning and development opportunities tailored to their specific needs.

Therefore, the generalization of digital technology reveals significant challenges and opportunities for individuals with disabilities, especially those with ID. A study conducted in Germany with 50 individuals with ID revealed their desire to improve their digital skills, although they often did not feel supported by their caregivers (Heitplatz, 2020). Assistive technologies emerge as crucial tools to compensate for specific disabilities and enhance the quality of life of individuals with disabilities (Boot et al., 2018; Shih et al., 2012). In fact, according to Owuor et al. (2018), assistive technologies can reduce functional limitations and improve the autonomy of individuals with disabilities, promoting inclusion and well-being. However, support, education, and training in technology for individuals with ID is a persistent need (Khanlou et al., 2021). Decision-making related to access to technology is influenced by environmental and social factors, such as knowledge and beliefs about technology (Ramsten et al., 2019). Personalized technological environments are crucial for the autonomy and support of individuals with ID (Ramsten et al., 2019; Wahl & Kiuppis, 2023), but this customization is not guaranteed. Additionally, the active participation of individuals with disabilities in technology design can enhance usability and lead to a sense of empowerment and ownership (Balasuriya et al., 2022). In some cases, it can also help to reduce support requirements for individuals with ID, thus increasing their autonomy and freeing support staff for other activities (Balasuriya et al., 2022; Ramsten et al., 2019; Wahl & Kiuppis, 2023).

In summary, the relationship between digitalization and ID is a complex challenge. However, research is still limited. This study aims to analyze factors that could facilitate integrated employment of individuals with ID in the digitalization era, including new professional profiles, opportunities from digitalization, and necessary support. As mentioned above, two studies with two methodologies were applied: analysis of semi-structured interviews using Strauss's Grounded Theory and the Delphi method. Ethical approval was obtained from the ethical committee of the research team's university. All appropriate measures were taken concerning participants' consent and confidentiality.

Study 1

3. Methodology

3.1. Design

The version of Grounded Theory used was Straussian Grounded Theory, framed within the philosophical currents of symbolic interactionism and phenomenology (Strauss & Corbin, 1998). This systematic methodology facilitates the adaptation of concepts to

data, generating new knowledge, especially in areas where research is limited, as in the field of digitalization of work for individuals with ID (Trip et al., 2020). It is a suitable strategy for theory generation through content analysis of semi-structured interviews (Estrada-Acuña et al., 2021).

3.2. Participants

We conducted the study in collaboration with “Plena inclusión”, a non-governmental organization (NGO) located in Spain and dedicated to the inclusion of individuals with ID. This NGO opened a call to recruit participants. Three groups of individuals participated as interviewees: three experts in technology and ID (two males and one female), two individuals with ID employed in integrated employment, and four team supervisors (three females and one male) who had at least one individual with ID on their team.

The first participant with ID was 48 years old with 17 years of experience in the same position and an officially recognized disability rating of 33%. He was employed as a general laborer. The second participant with ID was 40 years old with two years of work experience in his current position and a disability rating of 67%. He was employed as a cleaning service worker. Both participants were able to perform their job duties with varying degrees of support, representing different levels of workplace independence and accommodation needs. Their extended work histories provided valuable insights into the long-term employment experiences of individuals with ID and their challenges in dealing with workplace digitalization.

3.3. Data collection

The data were collected from semi-structured interviews that addressed three areas that corresponded to the three aforementioned objectives: new professional profiles, digitalization as an opportunity, and the support needed by individuals with ID in the face of digitalization. The interviews were conducted using the Microsoft Teams platform and recorded with the participant’s consent for subsequent transcription. The average duration of the interviews was 30 min.

3.4. Procedure

The interview recordings were transcribed verbatim, and content analysis was carried out using methods consistent with a grounded theory approach with the assistance of NVivo 14 software. Initially, multiple readings of the transcripts were conducted to allow the researchers to become familiar with the data. Subsequently, a line-by-line coding process was applied, generating numerous descriptive codes that reflected different aspects addressed in the interviews. To enhance the credibility of the emerging codes, two different researchers performed the same process in parallel, facilitating comparison and discussion of the results. This process led to a final list of codes and categories. Subsequently, the codes were grouped into three predefined categories: the characteristics of new professional profiles for individuals with ID, opportunities generated by digitalization for integrated employment, and the support needed by individuals with ID. These categories were reanalyzed, interview by interview and across interviews, to identify subthemes based on the participants’ narratives, following an abductive approach that combines deductive and inductive analysis (Awuzie & McDermott, 2017). In addition, theoretical sampling was performed based on the classification of interviews to find variations in situations and analyze them. The aim of the analysis was to establish patterns and themes from the data through field notes and associated memos, selecting representative quotes to illustrate the meaning of the categories. The constant comparative method allowed researchers to search for patterns in the data and compare emerging codes for similarities and differences, integrating codes and subcategories to arrive at a manageable number of categories. Each new case was evaluated with respect to the original coding structure, adjusting codes as necessary. This process continued until saturation was reached, and new cases did not yield additional codes. Finally, the results were compared with previous research to observe similarities and differences.

3.5. Data analysis

The content analysis of the semi-structured interviews was carried out using NVivo version 14. First, the open coding process was performed, which involved identifying codes in the data. Next, axial coding was conducted to discover categories and their relationships. Finally, selective coding was carried out to identify central categories (Estrada-Acuña et al., 2021; Strauss & Corbin, 1998).

4. Results

Different aspects were observed for each main area associated with our objectives (characteristics of new professional profiles for workers with ID, opportunities generated by technological change, and support needed by workers with ID). Participants’ quotes were replaced with the initials of their roles and the interview number as follows: Ex_001 (Expert), SU_001 (Supervisor), and PDI_001 (Individual with ID). We selected one representative quote for each code (complete data available in Annex 1).

4.1. Theme 1: characteristics of new professional profiles

As mentioned above, when individuals with ID work in integrated employment, they tend to perform low-skilled manual tasks (Livermore et al., 2017). This does not mean that individuals with ID lack the ability to carry out more complex tasks. In fact, it is common for these individuals to perform roles that are below their potential (Migliore & Butterworth, 2008; Schneider & Sherlock,

2018). These aspects were stressed by participants in the interviews. The jobs that individuals with ID typically perform are related to unskilled activities.

...almost all the job placements we make for individuals with disabilities are unskilled positions, from production assistants... or office assistants, and if we look at the service sector, they are still assistants, such as waiters' assistants or restocking assistants. (EX_002)

In this context, one of the crucial challenges is to achieve a technological transition that avoids the exclusion of individuals with ID. In this regard, the participants express optimism and agree that, although changes in the professional profiles of workers with ID are likely, these changes should not be seen as a threat:

Well, some might have negative effects, and others positive, but I think everything I'm seeing in the company is for the better; it's positive. (PDI_002)

The participants also agreed that one of the most significant changes will be the transition towards more specialized professional profiles, leaving versatility behind:

...well, in the past week, I think artificial intelligence has really taken off, and it has reached our associations and our daily lives. I see it as an opportunity for individuals with disabilities to have even more specialized profiles. (EX_001)

As a result of the use of technologies and specialization in tasks, it is expected that individuals with ID will achieve a higher degree of self-determination:

...that's where I see that perhaps the shell needs to be broken, and parents should allow their children to go their own way, not keeping them so enclosed. (SU_001)

Furthermore, technological change will require the development of soft (e.g., proactivity) and digital skills within the professional profiles of individuals with ID:

... in the last few decades, there has been a change in job requirements. Ten years ago, digital skills were not required for some unskilled jobs, such as a janitor... Now, for these jobs, digital skills are being requested... and that is making the integration a bit more challenging... (EX_002)

The interviews highlight that not only will the professional profiles of individuals with ID change, but significant changes will also occur in the role of job coach (professionals responsible for facilitating the adaptation of individuals with ID to the workplace). Several of their functions will be taken over by technology as a learning and reference tool in the workplace for workers with ID. In this context, specialized support will need to be oriented towards and adapted to training in the use of technology. Therefore, it will be necessary for support professionals to be trained in technology management.

...provide ongoing training to all individuals with disabilities with the support of trainers, which I think is vital in this digital transformation, so that tutors and daily work companions in this transformation must also be trained, certainly before the individuals with disabilities themselves. (SU_001)

Finally, in addition to technological change, the pandemic has transformed the way we work and interact, and this has also had an impact on individuals with ID.

When the pandemic came, we all had to reinvent ourselves. The truth is that we were very successful. We didn't think they would adapt so quickly. Even for people who didn't interact as much in person, we managed to get them to interact through a screen, so in some cases, it surprised us a lot. (EX_003)

4.2. Theme 2: opportunities generated by technological change linked to digitalization

Digitalization could become an essential support tool for individuals with ID, as [Wehmeyer et al. \(2012\)](#) indicated. It not only allows for adaptation, but it also provides support in various areas, reducing the gap between individual and environmental demands. This is mentioned by the participants.

...the truth is that we realized that technology was incredibly valuable, and we discovered many things, interactive games, and many platforms that helped us and them. They could make our day-to-day life more comfortable. (EX_003)

In this regard, technology has the potential to enhance functional skills, promote greater independence in daily activities, provide control over the environment, and ultimately foster better community integration ([Wehmeyer et al., 2012](#)). Consequently, the support individuals with ID require from job coaches is likely to decrease, or their focus may shift toward managing technology as a support resource.

Well, for instance, if you have any doubts about your work, you can go online and find the answers. That's what happened to me; I had some questions, and as they say here, 'Dr. Google' solved them for me. (PDI_001)

Finally, according to [Wehmeyer et al. \(2006\)](#), the use of technology to promote employment outcomes is generally effective, especially when addressing Universal Design features (a design that creates spaces or products accessible to most people, also known as design for everyone). Additionally, technology can reduce barriers faced by individuals with ID in their work lives in areas such as speaking, reading, and writing.

...I have a computer at home, and I manage it well. I haven't really had any issues with technology. Our machine is very easy to use. (PDI_002)

4.3. Theme 3: support needed by individuals with id to adapt to technological change linked to digitalization

As part of the support demands posed by digitalization in integrated employment for individuals with ID, there is a considerable need to create specific training programs tailored to this group and facilitated by private companies, third-sector entities, and public

policy/administration authorities. Participants suggested strategies such as incorporating digital skills into training programs, integrating them into curricula, and developing cognitive accessibility strategies for technology use.

It's important to include training in new technologies in specific programs, and this training should be accessible. (EX_001)

In the workplace, the role of supervisors is crucial for the successful integration of workers with ID into the work team and their effective adaptation to their jobs. These supervisors play a key role in raising awareness among other team members about the importance of accepting and supporting individuals with ID.

...the supervisor or manager, their support must be initial when it comes to restructuring, if you want, when it comes to making potential colleagues aware, right? It's an initial support... (EX_002)

Likewise, in the work experience, individuals with ID often use technology with the support of specialized staff or co-workers (natural supports). These supports play a crucial role in influencing how technology is used and adapted.

...well, the first few days were difficult because I was quite nervous, and the support I had was a week with the coworker I had at the time in that position. He spent a week with me, telling me how to do things, and then I was on my own. (PDI_002)

Furthermore, it is essential to highlight the importance of support provided by caregivers, who must have a strong level of familiarity and technological skills to ensure effective assistance (Balasuriya et al., 2022).

The role of families is crucial, but it's a long-term effort... they have to instill the importance of digital skills. We are in an increasingly digitalized society, so it's not about taking away mobile phones just because they become indiscriminately addicted to social media or video games. They should also see those computer programs and the mobile phone as an opportunity for their child's development and professional growth... (EX_002)

To put all these supports into action, the interviewees agree on the need to enhance coordination among various stakeholders: families, organizations, the third sector, and public administration.

Well, I think, in addition, the associations that I know are making a superhuman effort to carry out the many projects they have in progress. So, I believe they need to partner with the administration so the administration can provide them with these financial resources... (SU_001)

Technology not only has positive aspects. Inappropriate use or lack of control can lead to issues such as addiction to smartphones or social media, with individuals with ID being more vulnerable in many cases and requiring mental health support (Bednar & Welch, 2020).

Well, sometimes the mobile phone brings problems with WhatsApp, social media, and stuff. Some become obsessed with someone and keep talking to you all the time. Or they call you, and they don't have a filter, so sometimes it can be 2:00 in the morning... (EX_003)

Finally, it is important to highlight that both individuals with and without ID face similar challenges when it comes to managing technology. This equality in terms of challenges underscores the need for inclusive and accessible solutions that do not just benefit a specific group but rather address technological difficulties in a widespread and equitable manner.

...besides, new technologies are also complicated for those without disabilities. (PDI_002)

Study 2

5. Methodology

5.1. Design

The Delphi method is a widely used social research strategy for gathering data and obtaining the most reliable consensus from a panel of experts (Lyons et al., 2018), in this case regarding digitalization and integrated employment for individuals with ID. This is due to the method's specific interest in understanding what future strategies are important and feasible for individuals with ID in adapting to digitalization in the workplace.

5.2. Participants and procedure

To carry out the Delphi study, seven experts in technology and ID participated. The design of the questionnaire was based on a participatory process in which experts suggested items for each of the three sections. After removing items due to redundancies, the final questionnaire (see Annex 2) comprised three areas that corresponded to our objectives: new professional profiles (19 items), digitalization as an opportunity (30 items), and support (18 items). Items reflected potential future *strategies* to help workers with ID to adapt to digitalization in the workplace. Experts reported on two dimensions for each strategy (item): its importance and its feasibility (likelihood of occurrence). Both dimensions were rated on 10-point scales. For the importance dimension, the scale ranged from 1 ("not important at all") to 10 ("very important"). In the case of feasibility, the scale ranged from 1 ("very unlikely") to 10 ("very likely"). We conducted a two-step online Delphi method study (Keeney et al., 2011). The 7 experts completed the first Delphi round (answered the questionnaire), and 6 completed the second round (one expert declined to participate in the second round for personal reasons). The research team analyzed the first round of data, and the responses from this first round were used to conduct a second Delphi round. Each expert received feedback on the aggregated responses of the expert group, and they were informed about the items on which they disagreed with the group, having the opportunity to amend their own scores or maintain them.

In the final stage (remote teamwork), the experts consensually classified the items into categories within each area corresponding to our objectives: a) strategies (items) for new professional profiles were classified in the categories of education, professional and social attitude, person-centered technology, and personal basic competencies; b) strategies (items) for digitalization as an opportunity

were classified in the categories of education, technology focused on the work or professional stage, and technology focused on cognitive accessibility; and c) strategies (items) for support were classified in the categories of natural social supports, labor natural supports, specialized supports, and technological supports. The final scores were analyzed, considering these categories.

5.3. Data analysis

For the data analysis of the Delphi method, the Average Deviation Index (ADI) was employed. This index, proposed by [Burke et al. \(1999\)](#), is used to measure agreement among participants. ADI is based on calculating the average deviation for each strategy on the scale to determine the agreement among the experts. It is calculated as the mean of the absolute deviations of each strategy from the arithmetic mean. An average deviation index of less than 1.67 is indicative of agreement, following the interpretation criteria established by [Dunlap et al. \(2003\)](#). All the data were collected and analyzed using Microsoft Excel with the assistance of equation functions.

6. Results

In the following subsections, we describe the results of the Delphi group analysis in the three areas of new professional profiles, digitalization as an opportunity, and support. We present a summary of expert consensus, highlighting the most relevant categories and strategies (complete data available in Annexes 3–5).

6.1. New professional profiles

The Delphi analysis showed strong expert consensus on strategies related to new professional profiles, with all 19 strategies meeting the consensus criteria (ADI values below 1.67) by the second round (see Annex 3 for complete results).

Importance ratings: Experts rated “personal basic competencies” as the most important category ($M = 8.06$), whereas “education” received the lowest importance rating ($M = 7.29$). Overall, the importance across all strategies averaged 7.57.

Feasibility ratings: “personal basic competencies” was deemed the most feasible category ($M = 6.83$), whereas “professional and social attitude” was rated the least feasible ($M = 6.07$). Overall feasibility across strategies averaged 6.30.

Highest-rated strategies: Two strategies stood out for their importance: “basic skills for handling electronic devices in non-skilled jobs” and “positive attitude toward technology training” (both 8.67). For feasibility, the highest-rated strategies were “basic skills for handling electronic devices” (8.00) and “ability to perform routine jobs with technology use” (7.83).

Annex 3 provides a comprehensive breakdown of all the ratings by category and strategy.

6.2. Digitalization as an opportunity

The Delphi analysis revealed varying levels of expert consensus on digitalization opportunities, with most of the strategies meeting the consensus criteria by the second round (see Annex 4 for complete results).

Consensus levels: By the final round, 26 of the 30 strategies (86.7%) achieved consensus on the importance ratings, whereas 24 of the 30 strategies (80%) reached consensus on the feasibility ratings.

Importance ratings: Experts identified “technology focused on cognitive accessibility” as the most important category ($M = 8.56$), whereas “technology focused on the work or professional stage” received the lowest importance rating ($M = 7.74$). Overall importance across all strategies averaged 8.06.

Feasibility ratings: “Cognitive accessibility-focused technology” was deemed the most feasible ($M = 6.97$), whereas “technology focused on the work or professional stage” was rated as the least feasible ($M = 5.56$). Overall feasibility across strategies averaged 6.02.

Highest-rated strategies: Two strategies were rated as the most important (both 9.17): “digital competence training in educational stages” and “automatic adaptation of texts to easy reading through artificial intelligence”. For feasibility, “audiovisual resources for individuals with reading comprehension difficulties” (7.43) and “promotion of augmentative communication methods through technology” (7.24) received the highest ratings.

Annex 4 provides a comprehensive breakdown of all the ratings by category and strategy.

6.3. Supports

The Delphi analysis demonstrated strong expert consensus on support strategies, with all 18 strategies meeting consensus criteria for both dimensions by the second round (see Annex 5 for complete results).

Importance ratings: Experts identified “natural workplace supports” as the most important category ($M = 8.89$), whereas “technological supports” received the lowest importance rating ($M = 8.12$). Overall importance across all strategies averaged 8.57.

Feasibility ratings: “Natural social supports” was the strategy rated as the most feasible ($M = 7.17$), with “specialized supports” considered the least feasible ($M = 6.49$). Overall feasibility across strategies averaged 6.57.

Highest-rated strategies: Two strategies tied for the highest importance (both 9.33): “specific training in digital skills for individuals with ID” and “universal design of devices and technological tools used in the workplace”. For feasibility, “apps to create personalized supports” (7.83) and “websites with cognitive accessibility” (7.75) received the highest ratings.

Annex 5 provides a comprehensive breakdown of all the ratings by category and strategy.

7. Discussion

The aim of this study was to analyze the challenges and identify opportunities arising from digitalization in the integrated employment of individuals with ID. To achieve this goal, two qualitative studies were conducted: semi-structured interviews and the Delphi method. The main implications of the findings are described below.

7.1. General advances in knowledge

Concerns and opportunities in the interviews. The interviews identified a series of concerns and opportunities in three areas. In the first area, which is about new professional profiles, there is a concern about the possible disappearance of jobs traditionally associated with individuals with ID due to digitalization and task automation. It is essential to consider that many of these jobs are related to manual, low-skilled tasks. The second area highlights the opportunities that digitalization offers for the integrated employment of individuals with ID. Technology is identified as a crucial tool for improving functional skills, promoting independence in everyday activities, and facilitating job search and community integration. The third area emphasizes the need for specific support and training programs for individuals with ID in the context of technological transformation. This area includes the integration of digital skills into training programs, the adaptation of cognitive accessibility strategies, and the improvement of coordination among various stakeholders involved in supporting individuals with ID in the workplace.

Concerns and opportunities in the Delphi method. The analysis of the results of the Delphi method revealed a considerable gap between the importance that experts assigned to digitalization in the workplace and their feasibility. Importance scores were always higher than feasibility scores. The difference is above one point in the area of new professional profiles. The gap in the area of opportunities is even higher than two points. Likewise, support scored a two-point gap. Our results suggest that despite the importance attributed to the strategies considered, implementing them in the future is not easy. The study also indicated that the average deviation indices (degree of agreement among experts) for the feasibility dimension were larger than those for the importance dimension. It seems that experts differ on the feasibility of the proposed strategies. It is possible that this variability among experts depends on their frameworks and/or the contexts where they work.

In addition, there are differences in the level of importance attributed to the different areas. Overall, a gradation exists where experts attribute more importance to Area Three, followed by Area Two and Area One. In other words, the area of support is particularly relevant for experts. Therefore, taking advantage of the opportunities of digitalization will not be possible without people and environments that support it. Consequently, it is necessary to consider redesigning workplaces and stakeholders' involvement to make it possible to support individuals with ID beyond improving their professional profiles. These findings underscore the importance of adequately preparing individuals with ID for an increasingly digitalized work environment through specific training and adapted support systems, which is consistent with previous studies on positive vocational outcomes associated with technological implementation (Damianidou et al., 2019a; Morash-Macneil et al., 2018).

7.2. Area 1: new professional profiles

Among the interviewed participants, there is a concern that digitalization can make it difficult to access integrated employment for individuals with ID who do not have digital skills. Many unskilled jobs currently occupied by individuals with ID are susceptible to incorporating new technologies, thus altering the way tasks are carried out and requiring new digital competencies from the workers. Interestingly, the participants expressed that the profile that will probably be affected the most by this technological change associated with digitalization is that of job coaches because many of their functions can be taken over by technology. However, in the Delphi method, there is a consensus among experts that technology should not be perceived as a threat but rather as an opportunity for specialization and the development of digital, digitalized, and soft skills (*anonymized*; Waschull et al., 2022). Furthermore, it is anticipated that the roles of job coaches will evolve to include the use of technology as a support tool in the workplace.

These findings support previous research on the evolution of professional profiles. Historically, the profiles promoted within supported employment have been based on industrial-era roles, which involved low-skilled tasks such as manufacturing, assembly line work, repetitive tasks, production, manipulation, storage, cleaning, and transportation (Martínez-Rivera, 2012). Technology is transforming these profiles through specific applications, as demonstrated by several examples: handheld devices providing audio-visual prompts for tasks such as folding pizza boxes and packaging software products (Wehmeyer et al., 2006); technological support for tasks such as cleaning bathrooms or rolling silverware and office tasks such as scanning, faxing, and photocopying documents (Morash-Macneil et al., 2018); or vibrating watches programmed to improve time management skills (Damianidou et al., 2019a). These examples illustrate how job roles are integrating technological solutions that allow greater independence and efficiency.

Congruently with these concerns, experts participating in the Delphi method emphasize the importance and likelihood of acquiring basic skills for handling electronic devices in unskilled jobs. This opinion underscores the need for specific technology training for individuals with ID, especially in the educational environment, which aligns with the findings of Schneider and Sherlock (2018). The ability to perform routine tasks through the use of technology is also considered relevant, indicating an evolution toward job roles that effectively integrate technology. In the case of soft skills, experts believe it is crucial to foster awareness of technological change (digital mindset), as well as responsibility, professionalism, and perseverance in the digitalization context. Flexibility, adaptability, and proactivity are also fundamental, as is resilience to frustration when facing technological challenges. Developing the capacity to work in teams, communication skills, and social skills in a digital environment, along with a positive attitude toward technology training and digitalization, are aspects that will significantly contribute to the vocational success of workers with ID in this context.

7.3. Area 2: opportunities

The interviewees perceived the implementation of technology as an opportunity to promote supported employment programs that facilitate the development of personal resources and job-related skills, enhancing the ability of individuals with ID to face the new demands of digitalization. They also highlighted technology's potential to reduce barriers in the working life of individuals with ID, demonstrating its effectiveness, especially when addressing aspects of universal design and accessibility. Additionally, digitalization appears to decrease the dependence on traditional specialized support, granting greater autonomy to individuals with ID. These findings are consistent with those of Wahl and Kiuppis (2023) and Balasuriya et al. (2022).

These benefits materialize in concrete examples: applied cognitive technology enables independent performance of vocational tasks, as demonstrated by Davies et al. (2002) with their system that provided self-directed audiovisual prompts on a portable computer to improve accuracy and independence in assembly tasks. This system significantly enhanced performance and achieved greater independence by reducing the assistance needed from the job coach. Similarly, Damianidou et al. (2019) document how technology supports people with ID in error detection in their work, thus reducing the need for general hierarchical control (Martínez-Rivera, 2012). Another significant example is the rise of telework, which has eliminated physical barriers by allowing tasks to be performed remotely, particularly benefiting people with severe disabilities (Hernández-Sánchez et al., 2021).

Regarding the Delphi method, experts also emphasize the importance of digital competence training during the educational stages to facilitate the transition to employment. They also highlight the usefulness of technology focused on cognitive accessibility, such as adapting texts for easy reading and generalizing accessible apps to facilitate employment and autonomy for individuals with ID.

7.4. Area 3: supports

The interviewed participants thought it was relevant to involve stakeholders in the adaptation of individuals with ID to digitalization. Among the stakeholders who stand out are job supervisors (who are essential in integrating workers with ID into their work teams), peers and job coaches (who offer training and support in navigating the new technologies), and caregivers or family members (who facilitate access to these technologies outside the work context). Experts underline the relevance of natural, social, and workplace supports for adapting to the digital work environment. They highlight the roles of family members and coworkers in providing support and facilitating the integration of individuals with ID into the digital work world. Additionally, experts emphasize the importance of specific training in digital competencies and the universal design of technological devices and tools to ensure the effectiveness of the support.

Wehmeyer et al.'s (2006) research reinforces these findings, documenting how various types of technological support, such as augmentative and alternative communication devices, have been effectively used to teach specific requests in vocational settings. Chadwick et al. (2022) point out that people with ID face significant challenges in using digital technology, including cognitive demands, difficulties understanding how it works, lack of digital literacy skills and confidence, and reliance on others for access from home. These supports should be multimodal and include devices offering multiple presentations (pictorial, verbal, tactile) adapted to individual variations, such as iPads and iPhones (Damianidou et al., 2019b). Safari et al. (2023) further emphasize the importance of involving people with ID in the design of digital technology to promote their digital inclusion and develop more suitable tools.

It is essential to recognize that although technology offers opportunities for the integrated employment of individuals with ID, it also poses challenges, such as inappropriate or addictive use of technological devices, which require attention and mental health support. Furthermore, it is crucial to acknowledge that both individuals with ID and those without this type of disability face similar challenges in technology management, underscoring the need for inclusive and accessible solutions that benefit society as a whole.

7.5. Practical implications

Our contributions provide a solid foundation for practice and enhance our understanding of integrated employment in the digital era. More specific recommendations can be provided with the aim of guiding support professionals, policymakers, organizations, and other stakeholders in the practical use of the results. First, it is necessary to promote the development of soft and digital skills in professional profiles for individuals with ID in line with current technological demands. Second, it would also be highly beneficial to provide training for support professionals in the use of technology to adapt to the new work dynamics resulting from digitalization. Third, it would be helpful to integrate digital competence training programs into educational stages to facilitate the transition to employment for individuals with ID. Fourth, it would be useful to develop technology focused on cognitive accessibility in order to enable the adaptation of texts and audiovisual resources to easy-to-read formats, thus enhancing comprehension. Fifth, it is necessary to strengthen coordination among relevant stakeholders (families, organizations, the third sector, and the public administration) to ensure an inclusive technological transition. Finally, it would be relevant to train and raise awareness in supervisors and coworkers to support the successful integration of workers with ID into the digital work environment.

7.6. Limitations and future research

As in any other study, ours also has limitations that, without invalidating the observed results, may serve as a stimulus for future research. First, although the number of participants in our studies is adequate given the qualitative approach considered and the agreement found, it is important to mention that the small sample sizes could limit the generalization of the results. Therefore, replicating our analyses with additional participants in future research studies will help to confirm the findings further. Second, our

participants were from Spain. It is reasonable to expect that similar opportunities and concerns emerge in other countries. However, exploring integrated employment for individuals with ID in other contexts would be welcome in future research efforts. Finally, we combined two qualitative methodologies and involved different types of participants, providing a rich view of integrated employment for individuals with ID. Nevertheless, future studies could add quantitative approaches as a complementary research strategy that would enrich the picture.

8. Conclusion

Based on accumulated research evidence, we believe that, although digitalization can create challenges for individuals with ID in accessing employment, it also offers opportunities. Whether digitalization becomes an opportunity depends on the decisions made by today's societies and organizations. According to the socio-technical approach, there is no single way to implement a technological change such as digitalization. It is essential to find ways for this transformation to have positive effects, not only on efficiency but also on the citizens, including people with ID. This process will require training individuals, designing technologies and contexts that facilitate inclusion, and providing the necessary support. Although implementing appropriate strategies for inclusion is possible, it will not be easy, and it will require a deliberate effort to place people at the center when making decisions.

CRedit authorship contribution statement

Esther Gracia: Writing – review & editing, Methodology, Conceptualization. **Eva Lira:** Writing – review & editing, Methodology, Conceptualization. **Carolina Moliner:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **Vicente Martínez-Tur:** Writing – review & editing, Methodology, Investigation, Funding acquisition, Conceptualization. **Fajardo-Castro Lead Viki:** Writing – original draft, Methodology, Investigation, Formal analysis.

Declaration of generative AI and AI-assisted technologies in the writing process

Statement: During the preparation of this work, the authors used ChatGPT-3.5 (Open AI, <https://chat.openai.com>) only during the writing process to improve readability and language. After using this tool, the authors reviewed and edited the content as necessary and take full responsibility for the content of the published article.

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Conflict of Interest

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Annex 1

Qualitative Analysis Results: Codes and Supporting Quotes from Semi-Structured Interviews

Codes of New Professional Profiles	Supporting Quotes
The jobs that individuals with ID typically perform are related to unskilled activities	I make blister packs for a cheese factory here... (PDI_001) I work as a laborer in an integrated employment company. (PDI_002) From our experience, what we have right now is individuals who are doing workshop cleaning. (SU_001) We are looking for profiles more dedicated to manual work in the store... (SU_002) ...almost all of our job placements for individuals with disabilities are unskilled positions, from production assistants... or office assistants, and if we look at the service sector, they are still assistants, such as waiters' assistants or restocking assistants. (EX_002)
Positive attitude towards technological change	...I don't think it poses a threat. Will professional profiles change? Yes. But well, I think we should be adaptable to change... (EX_001) ...not as a replacement for a person, I see it as a support for people... (EX_001) ...jobs like yours or mine, well... I mean, a machine won't take our jobs. (PDI_001)

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Annex 1 (continued)

Codes of New Professional Profiles	Supporting Quotes
Specialization in job positions as a result of digitization	<p>New job opportunities will arise, new jobs that probably don't exist today, and that's where we all need to be included. (SU_001)</p> <p>Well, some might have negative effects, and others positive, but I think everything I'm seeing in the company is for the better; it's positive. (PDI_002)</p> <p>...What's happening is that digitalization is specializing job positions a lot at the expense of the level of versatility required from the person. We notice this a lot in large companies. On the one hand, being more specialized, the functions tend to be one, two, three, right? Very linear. (EX_002)</p> <p>...well, in the past week, I think artificial intelligence has really taken off, and it has reached our associations and our daily lives. I see it as an opportunity for persons with disabilities to have even more specialized profiles. (EX_001)</p>
Increase in self-determination as a result of technology use	<p>I believe that persons with disabilities will gain in terms of self-determination, which will have a significant impact on them... Because the individual will be much more autonomous in making their decisions through technology. (EX_001)</p> <p>...that's where I see that perhaps the shell needs to be broken, and parents should allow their children to go their own way, not keeping them so enclosed. (SU_001)</p>
Skills that will be required in the future for individuals with ID in a context of technological change	<p>They require more attention to detail, which is true, and these are abilities that are generally more developed in persons with disabilities. (EX_002)</p> <p>In the end, I think what stands out is having a proactive attitude in order to adapt in the long term. (SU_001)</p> <p>Well, I believe that, in all the professional profiles, there will be a component related to ICT or digital media. (EX_001)</p> <p>...disadvantages of digitization, digital skills; in the last few decades, there has been a change in job requirements. Ten years ago, digital skills were not required for some unskilled jobs, such as a janitor... Now, for these jobs, digital skills are being requested... and that is making the integration a bit more challenging... (EX_002)</p>
Change in the professional profile of specialized supports as a result of digitization and technological advancement	<p>I believe that technology will affect the job coach profile more than the profile of the person with a disability. (EX_001)</p> <p>...when the individual used to perform action X, the job coach provided support. Now, I believe that when the person performs action X, technology will provide support, and the job coach will provide support to the person in using the technology. I think the profile of the specialized person changes completely. (EX_001)</p> <p>...provide ongoing training to all persons with disabilities with the support of trainers, which I think is vital in this digital transformation, so that tutors and daily work companions in this transformation must also be trained, certainly before the persons with disabilities themselves. (SU_001)</p>
Increase in the use of technologies in job positions as a result of the pandemic	<p>Well, I think we should revamp our way of working. I believe that there has already been a good transformation with the pandemic issue; it has forced us to work in a different way, like all organizations. And, well, I think we should take advantage of this movement and continue to digitize ourselves and continue to move in the digital world. And continue to use this medium; in the end, it's going to be a way of connecting... (EX_001)</p> <p>When the pandemic came, we all had to reinvent ourselves. The truth is that we were very successful. We didn't think they would adapt so quickly. Even people who didn't interact as much in person, we managed to get them to interact through a screen, so in some cases, it surprised us a lot. (EX_003)</p>
Codes of Digitalization as an Opportunity	Supporting Quotes
Digitalization could become an essential support tool for individuals with ID	<p>Well, I believe it can be a facilitator and reduce the burden on what we call specialized support, allowing it to shift more towards generic support through technology. (EX_001)</p> <p>...another advantage is that it allows supported employment programs to bridge the gap, right? Making video calls, but even more... doing family intervention through video calls... (EX_002)</p> <p>...the truth is that we realized that technology was incredibly valuable, and we discovered many things, interactive games, many platforms that helped us and them. They could make our day-to-day life more comfortable. (EX_003)</p>
The support individuals with ID require from job coaches is likely to decrease, or their focus may shift toward managing technology as a support resource	<p>For example, in job searching, when specialized support is used to facilitate a person's job search... that specialized support won't have the same weight when technology is used because technology will enable us to conduct job searches online. So, the role of that person won't be as important or influential as technology... and support may not be provided in the same way as before, but instead, support will be directed towards technology to perform the same functions as the previous supports. (EX_001)</p> <p>Well, for instance, if you have any doubts about your work, you can go online and find the answers. That's what happened to me; I had some questions, and as they say here, 'Dr. Google' solved them for me. (PDI_001)</p>

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Annex 1 (continued)

Codes of New Professional Profiles	Supporting Quotes
Technology can reduce barriers faced by individuals with ID in their work lives in areas such as speaking, reading, and writing	<p>...and another opportunity is that, although we haven't consulted studies, we do realize that there are persons with intellectual disabilities with certain cognitive limitations, but no limitations in using technology. Some persons with disabilities may struggle with reading and writing but have remarkable proficiency when it comes to using technology... What happens is that we have support in the workplace, and the person has assimilated the concepts very well because they've done it through the company's program... (EX_002)</p> <p>Well, there are people who can read, people who can write, and people who can't do either. So, for those who can't read and write, technology itself helps. Now, you don't have to fiddle with the keyboard; you press a button, speak, and it finds it for you. (PDI_001)</p> <p>...my employee uses a mobile phone, uses social media, and has no problem with electronics or new technologies... I believe there wouldn't be more problems or fewer than there are now, there might even be fewer. Because from a young age, they start using computers, mobile phones, etc., and, therefore, it's much easier for them to adapt to it than it might be for manual jobs they haven't done... (SU_003)</p> <p>...I have a computer at home, and I manage it well. I haven't really had any issues with technology. Our machine is very easy to use. (PDI_002)</p>
Codes of Supports	Supporting Quotes
Need to create specific training programs tailored to this group and facilitated by private companies, third-sector entities, and public policy/administration authorities	<p>The demand for digital skills in persons with intellectual disabilities is significant, and it's like the major subject pending in the educational stages for these individuals. (EX_002)</p> <p>The knowledge about how to use the tool, I believe, should have a universal accessibility component that should be common to everyone. (EX_001)</p> <p>Especially adapting certain commonly used websites to be accessible for all disabilities, not only visual or hearing impairments, but also intellectual disabilities. But it seems like easy reading is somewhat overlooked, not that it's forgotten, but I think it's still a great unknown. (EX_003)</p> <p>It's important to include training in new technologies in specific programs, and this training should be accessible. (EX_001)</p>
The role of supervisors is crucial for the successful integration of workers with ID into the work team and their effective adaptation to their jobs.	<p>...to create a good work environment, and, as you mentioned, make the other employees aware, which should be the norm... (SU_003)</p> <p>...the supervisor or manager, their support must be initial when it comes to restructuring, if you want, when it comes to making potential colleagues aware, right? It's an initial support... (EX_002)</p>
The support of specialized staff or co-workers (natural supports).	<p>The explanation of how to use the technology the company has is given to the worker with intellectual disabilities by the responsible person in the company. There is also their support monitor, so that the company's employee only has to explain it once. We, because we know the person better, then take care of explaining it again in the workplace or in a different way, or we coordinate with their supported living facility or family to reinforce it at home. (EX_002)</p> <p>...coworkers, in that sense, are the most helpful, not only to the persons with disabilities, but also to the rest of us because we don't ultimately use that tool. And of course, we don't know how it works. So, yes, we have to rely on coworkers, obviously... coworkers are generally the ones who serve as natural supports. (EX_003)</p> <p>Workplace colleagues are crucial. Those who work side by side with persons with intellectual disabilities are essential, but always with a limit so that it doesn't lead to an excessive workload. (EX_002)</p> <p>...well, the first few days were difficult because I was quite nervous, and the support I had consisted of a week with the coworker I had at the time in that position. He spent a week with me, telling me how to do things, and then I was on my own. (PDI_002)</p>
The importance of support provided by caregivers, who must have a strong level of familiarity and technological skills to ensure effective assistance	<p>At first, the initial sessions were individual, like "connect through the phone, okay, dial this number, write it down for next time." It was quite challenging work, but then everything went smoothly, and in that regard, we also had support from families, from siblings, as some of them were at home. (EX_003)</p> <p>The role of families is crucial, but it's a long-term effort... they have to instill the importance of digital skills. We are in an increasingly digitalized society, so it's not about taking away mobile phones just because they become indiscriminately addicted to social media or video games. They should also see those computer programs and the mobile phone as an opportunity for their child's development and professional growth... (EX_002)</p>

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Annex 1 (continued)

Codes of New Professional Profiles	Supporting Quotes
Coordination among various stakeholders: families, organizations, the third sector, and public administration	...in the end, the labor inclusion of persons with disabilities has to be something coordinated among different stakeholders, right? In fact, one of the things I believe is lacking is that there's still a significant gap between the public administration, the industrial fabric, and the third sector. (EX_002) Well, I think, in addition, the associations that I know are making a superhuman effort to carry out the many projects they have in progress. So, I believe they need to partner with the administration so the administration can provide them with these financial resources... (SU_001)
Inappropriate use or lack of control can lead to issues such as addiction to smartphones or social media	Another disadvantage is indiscriminate use, excessive use, addiction to mobile phones... Increased exposure to social media, more anxiety disorders, and worse hygiene and sleep habits. If a person has good daily habits and routines, it's easier to find a job because they already go to bed at the same time, are disciplined, and so on. When there is indiscriminate use of the mobile phone, you first have to work on that addiction, and then you can refer them to a job where they have the ability to concentrate for four or eight hours. (EX_002) Well, sometimes the mobile phone brings its problems with WhatsApp, social media, and stuff. Some become obsessed with someone and keep talking to you all the time. Or they call you, and they don't have a filter, so sometimes it can be 2:00 in the morning... (EX_003)
Individuals with and without ID face similar challenges when it comes to managing technology	Well, I think we're all on the same level, I mean persons with disabilities or different abilities or any other type of person. So, starting from that basis, digitization is going to be beneficial for all of us, even though it will be challenging for all of us at first, some more than others, although in the end, it will be challenging for all of us. (SU_001) ...besides, new technologies are also complicated for those without disabilities. (PDI_002)

Annex 2

Delphi Method questionnaire

New Professional Profiles	Strategies (Items)
Education	<ol style="list-style-type: none"> 1. Basic digital literacy enabling searches in secure and reliable environments. 2. Ability to participate in shared digital environments while respecting intellectual property. 3. Basic skills for handling electronic devices in non-skilled jobs (e.g., PDA usage). 4. Digital skills for job searches (employment portals). 5. Ability to use key concepts in Artificial Intelligence tools to generate content. 6. Overall ability to use digital tools in work environments. 7. Management of personal information and acquisition of basic concepts of cybersecurity in networks and platforms. 8. Ability to plan to use digital tools.
Professional and Social Attitude	<ol style="list-style-type: none"> 9. Developing awareness of technological change in employment (digital mindset). 10. Responsibility, professionalism, and perseverance in a context of technological change. 11. Flexibility and adaptability in the face of technological change. 12. Proactivity to anticipate and navigate technological change. 13. Ability to perform routine tasks using technology.
Person-Centered Technology	<ol style="list-style-type: none"> 14. Ability to work in a team using technology. 15. Development of communication and social skills in a digital world. 16. Use of technology in manual jobs.
Personal Core Competencies	<ol style="list-style-type: none"> 17. Resilience to frustration in the face of technological changes in employment. 18. Positive attitude (desire to learn and improve) towards training in technology and digitalization. 19. Emotional education for individuals with intellectual disabilities in a digital work environment.
Digitalization as an Opportunity	Strategies (Items)
Technology focused on the educational stage	<ol style="list-style-type: none"> 1. Development of computer programs for personnel selection that specifically consider intellectual disabilities. 2. Software programs or applications that enable job performance assessment adapted to intellectual disabilities. 3. Opportunities to socialize and interact with others, facilitating employment for individuals with intellectual disabilities. 4. Educational methodologies driven by technological change (such as the Flipped Classroom) that enable individuals with intellectual disabilities to obtain basic qualifications. 5. Training in digital competency during educational stages, facilitating the transition to employment for individuals with intellectual disabilities by implementing tools and skills that will be needed in the future. 6. Learning new ways of working, especially for individuals with intellectual disabilities, becomes easier with tablets or computer software.
Technology focused on the work or professional stage	<ol style="list-style-type: none"> 7. Programs or applications that help individuals with intellectual disabilities to manage time in order to maintain an appropriate work pace. 8. Development of technology applied to active job searching for individuals with intellectual disabilities.

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Annex 2 (continued)

New Professional Profiles	Strategies (Items)
	9. Programs or applications that make it possible to assess the development of individuals with intellectual disabilities in the workplace and improve their employability. 10. Development of technology to identify suitable job vacancies for individuals with intellectual disabilities and communicate them to the company's Human Resources department. 11. Technology that enables increased autonomy and self-esteem for individuals with intellectual disabilities in their work. 12. Online work, which increases the supply and variety of jobs for individuals with intellectual disabilities, without limiting the job search to the local area. 13. Development of complex job skills through artificial intelligence that were not accessible until now 14. Performing complex tasks in a simple and repetitive manner, thanks to technology, which facilitates its use by individuals with intellectual disabilities. 15. Voice converters, facilitating employment for individuals with intellectual disabilities. 16. Development and use of accessible PDAs (Personal Digital Assistants) to facilitate employment for individuals with intellectual disabilities. 17. Automatic self-checkout systems (in stores, restaurants, etc.) that return change on their own, facilitating this task for individuals with intellectual disabilities. 18. Employment opportunities through devices, software, and algorithms that can identify emotions in individuals with intellectual disabilities with high levels of dependency. 19. Mobility opportunities for individuals with intellectual disabilities, thanks to robotics, facilitating inclusive employment. 20. Inclusion of individuals with intellectual disabilities in various job positions with the ease provided by new technologies for their execution. 21. Use of mobile phones by individuals with intellectual disabilities to perform tasks in the workplace. 22. Performing many tasks without the need to memorize, thanks to technology, which is beneficial for the employment of many people with intellectual disabilities.
Technology focused on cognitive accessibility	23. Creation of more fluid communication systems that facilitate more horizontal relationships between individuals with intellectual disabilities and their support networks, promoting inclusive employment. 24. Automatic adaptation of texts to easy-to-read formats through artificial intelligence, facilitating the process. 25. Adaptation of computer programs to easy-to-read formats. 26. Audio-guidance in easy-to-read format. 27. Audiovisual resources, through technology, that are very helpful for individuals with difficulties with reading comprehension. 28. Promotion of augmentative communication methods through technology (e.g., communication boards with pictures and symbols) that facilitate inclusive employment for individuals with intellectual disabilities. 29. Widespread use of QR codes to facilitate employment for individuals with intellectual disabilities. 30. Widespread use of accessible apps to facilitate employment for individuals with intellectual disabilities.
Supports	Strategies (Items)
Natural Social Supports	1. Family support in the face of technological challenges in the workplace performed by individuals with intellectual disabilities.
Natural Workplace Supports	2. Natural support from non-disabled coworkers for adapting to a digital work environment. 3. Support in cross-cutting skills and social abilities in a digital world, facilitating inclusive employment for individuals with intellectual disabilities. 4. Support in monitoring the tasks performed by individuals with intellectual disabilities in their work through technology.
Specialized Supports	5. Specific training in digital skills for individuals with intellectual disabilities. 6. Financial assistance for technological training for individuals with intellectual disabilities, aimed at inclusive employment. 7. Support from third-sector associations and entities in the technological challenges of the workplace for individuals with intellectual disabilities. 8. Specialized supports trained in digital competence to provide assistance in a technological context. 9. Pre-training in new technologies during educational stages that individuals with intellectual disabilities can leverage in a job. 10. Continuous and intermittent support personnel to consolidate task learning among individuals with intellectual disabilities in a digital world. 11. Training/collaboration with professionals or university programs that design technological tools oriented towards the inclusive employment of individuals with intellectual disabilities.
Technological Supports	12. Universal design of devices and technological tools used in the workplace by individuals with intellectual disabilities. 13. Accessible electronic resource banks for individuals with intellectual disabilities. 14. Digital supports that promote self-determination and free choice, such as applications or other types of software. 15. Specific supports offered by technology that cover individual and personalized needs. 16. Websites with cognitive accessibility for individuals with intellectual disabilities. 17. Support through virtual meeting and work applications like Zoom or Teams. 18. Apps to create personalized supports with mobile applications (for example, Mefacilyta)

Annex 3

New professional profiles

New professional profiles	Round 1				Round 2			
	Importance		Feasibility		Importance		Feasibility	
	Mean	ADI	Mean	ADI	Mean	ADI	Mean	ADI
<i>Education</i>								
Strategy 1	8.14	1.02	6.71	1.47	7.75	0.67	6.50	1.17
Strategy 2	6	2	5	1.43	5.83	0.89	4.33	0.89
Strategy 3	8.86	1.35	8.14	1.02	8.67	1.44	8	0.67
Strategy 4	8	1.14	6.29	1.67	7.83	1.22	5.83	0.94
Strategy 5	5.57	1.51	4.43	1.02	5.17	1.22	4.50	1.17
Strategy 6	8.71	0.90	7.57	1.35	8.33	0.67	7.17	1.17
Strategy 7	8.14	1.02	6.29	1.47	8	1	6.50	1.50
Strategy 8	7	1.14	6.57	0.94	6.75	0.92	6.42	0.75
<i>Professional and Social Attitude</i>								
Strategy 9	7.43	1.51	6.43	1.51	7.42	0.75	6.17	0.56
Strategy 10	7.71	0.90	6.71	0.82	7.83	0.89	6.50	0.67
Strategy 11	8.43	1.10	6.43	0.90	8	1	6.17	0.61
Strategy 12	6.86	1.59	3.86	0.73	6.67	1.33	3.67	0.67
Strategy 13	8.43	0.78	8.14	0.78	8.33	0.78	7.83	0.61
<i>Person-Centered Technology</i>								
Strategy 14	7.86	0.78	6.86	1.02	8	0.33	6.67	0.67
Strategy 15	8.29	0.61	6.43	0.90	8.33	0.67	6.33	0.89
Strategy 16	6.71	1.18	7.14	1.55	6.67	1.11	6.67	1.44
<i>Basic Personal Competences</i>								
Strategy 17	8.14	0.73	6.57	0.94	7.83	0.56	6.50	0.83
Strategy 18	8.86	0.78	7.43	1.51	8.67	0.78	7.17	1.17
Strategy 19	7.86	1.59	6.86	0.73	7.67	1.44	6.83	0.83

Note. For the importance scale, 1 = not important at all, and 10 = very important; for the feasibility measure, 1 = very unlikely, and 10 = very likely. The name of each strategy can be consulted in Annex 2. The two strategies with the highest average in the measures of importance and feasibility of each category for the second round are highlighted in bold.

Annex 4

Digitalization as an opportunity

Digitalization as an opportunity	Round 1				Round 2			
	Importance		Feasibility		Importance		Feasibility	
	Mean	ADI	Mean	ADI	Mean	ADI	Mean	ADI
<i>Technology centered on the educational stage</i>								
Strategy 1	6.86	2.16	5.57	1.35	7.31	1.69	5.17	1.17
Strategy 2	7.71	1.18	5.43	1.22	7.83	1.22	5.33	1.33
Strategy 3	8.14	1.02	7.29	1.18	8	1	6.83	0.89
Strategy 4	9	0.86	6.29	1.27	8.83	0.83	5.83	0.83
Strategy 5	9.29	0.41	6.71	1.18	9.17	0.28	6.17	0.83
Strategy 6	8.29	0.61	7	1.43	8.17	0.56	6.50	1.17
<i>Technology focused on the job or professional stage</i>								
Strategy 7	8.29	1.10	7	1.71	8.17	1.17	6.50	1.17
Strategy 8	8.43	1.06	6.29	1.10	8.33	0.78	5.83	0.83
Strategy 9	8	1.14	5.43	1.22	8.33	1	5.17	1.17
Strategy 10	7.57	2.04	4.71	1.18	6.93	1.95	4.33	1
Strategy 11	7.43	1.80	5.43	1.63	7.76	1.58	5.67	1.67
Strategy 12	7.57	1.63	5	1.14	7.33	1.67	4.67	0.67
Strategy 13	7.29	1.59	4.86	1.31	7	1.67	4.33	1
Strategy 14	7.57	1.47	6.71	2.04	7.17	1.44	6.17	1.83
Strategy 15	7.43	0.94	6.43	1.35	7.50	1	5.83	0.83
Strategy 16	7.86	1.06	6.86	1.84	7.50	1	6.48	1.48
Strategy 17	8.43	0.94	7.57	1.92	8.17	0.83	7.17	1.83
Strategy 18	7.43	1.51	4.57	1.35	7.17	1.50	4.50	1.17
Strategy 19	7.71	1.76	4.14	1.92	7.95	1.05	3.33	1
Strategy 20	8.14	1.31	5.86	1.59	8.17	1.22	5.50	1.17
Strategy 21	7	2	7	1.43	7.67	1.33	7	0.67
Strategy 22	9	0.86	7	1.71	8.83	0.83	6.50	1.33
<i>Technology focused on cognitive accessibility</i>								
Strategy 23	9.14	0.73	7	1.71	9	0.67	6.67	1.33
Strategy 24	9.29	0.61	6.57	2.04	9.17	0.56	6.67	2.11
Strategy 25	8.86	0.82	7.29	1.96	8.67	0.89	7.22	1.81
Strategy 26	8.57	0.90	7.29	2.04	8.83	0.61	7.22	1.55
Strategy 27	8.86	0.78	7.57	1.80	8.67	0.78	7.43	1.43
Strategy 28	8.43	0.65	7.43	1.80	8.33	0.67	7.24	1.24
Strategy 29	8.29	0.90	6.86	1.59	8	0.67	6.67	1.67
Strategy 30	7.86	0.78	6.71	1.67	7.83	0.89	6.62	1.29

Note. For the importance scale, 1 = not important at all and 10 = very important; for the feasibility measure, 1 = very unlikely and 10 = very likely. The name of each strategy can be consulted in Annex 2. The two strategies with the highest averages in the measures of importance and feasibility of each category for the second round are highlighted in bold.

Annex 5

Supports

Supports	Round 1				Round 2			
	Importance		Feasibility		Importance		Feasibility	
	Mean	ADI	Mean	ADI	Mean	ADI	Mean	ADI
<i>Natural social supports</i>								
Strategy 1	9	0.86	7.57	1.35	8.83	0.89	7.17	1.17
<i>Natural job supports</i>								
Strategy 2	9	0.86	7.14	1.88	9	0.67	7.19	0.87
Strategy 3	8.86	1.02	6.43	1.18	8.67	1	6	0.67
Strategy 4	9.14	0.98	7.14	1.27	9	1	6.83	1.17
<i>Specialized supports</i>								
Strategy 5	9.43	0.82	8	1.14	9.33	0.89	7.50	1
Strategy 6	9	0.57	7	1.43	9.17	0.56	6.33	0.78
Strategy 7	9	0.86	7.57	1.92	8.83	0.83	7.43	1.29
Strategy 8	8.86	0.49	7	1.43	8.67	0.44	6.50	1
Strategy 9	9.29	0.61	6.43	1.18	9.17	0.56	5.83	0.61
Strategy 10	8.29	1.39	6.57	1.35	8	1.33	6.17	1.17
Strategy 11	9	0.86	6.43	2.04	8.83	0.83	5.67	1.44
<i>Technological supports</i>								
Strategy 12	9.29	0.61	6.29	0.78	9.33	0.44	5.83	0.28
Strategy 13	6.57	1.63	5.86	1.84	6	1.33	5.64	0.64
Strategy 14	7.71	1.18	6.14	1.59	7.50	0.83	5.50	1.17
Strategy 15	8.86	1.06	6.14	1.02	8.50	1	6	0.67
Strategy 16	8.75	1.25	8.25	1.75	8.50	1	7.75	1.38
Strategy 17	8	1.71	7.57	1.47	8.17	1.17	7.17	1.44
Strategy 18	9	0.86	8.14	0.78	8.83	0.89	7.83	0.61

Note. For the importance scale, 1 = not important at all, and 10 = very important; for the feasibility measure, 1 = very unlikely, and 10 = very likely. The name of each strategy can be consulted in Annex 2. The two strategies with the highest averages in the measures of importance and feasibility of each category for the second round are highlighted in bold.

Data Availability

The data that has been used is confidential.

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