

SUPPORTING WORKPLACE INCLUSION: REASONABLE ACCOMMODATIONS AND ASSISTIVE TECHNOLOGIES FOR INDIVIDUALS WITH INTELLECTUAL DISABILITY

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Abstract

The present chapter examines the current comprehension of Intellectual Disability (ID) through considering it from the lens of social and human rights. By doing so, it places particular emphasis on the significance of supportive environments and the strengths and capabilities of the individual, while exploring the critical significance of reasonable accommodations and Assistive Technologies (ATs) in relation to workplace inclusion. Compulsory reasonable accommodations, as required by legal structures, promote fair and equal opportunities for all, thereby enhancing employee retention, job satisfaction, and productivity. ATs, which encompass both low-tech and AI-driven applications, are of paramount importance in

augmenting the independence and functional capabilities of people with ID. Moreover, they foster inclusivity across diverse spheres of life, with particular emphasis on the workplace. Achieving technological alignment with individual requirements, financial obstacles, and attitude issues are all obstacles. The concluding section of the chapter emphasises emerging patterns, collaborative endeavours, and the continuous progression towards a future in which the workforce is more inclusive of individuals with ID.

Keywords: Intellectual Disability; Assistive Technologies; Reasonable Accommodations; Workplace Inclusion.

Relevance of the Chapter for People with Intellectual Disability (PwID)

The focus of this chapter is on ways to improve the lives of people with Intellectual Disability (PwID). It discusses how our understanding of this condition has evolved over time, shifting the emphasis from what individuals cannot do to what they can do. Moreover, it describes how reasonable accommodations, which are helpful and fair modifications, in conjunction with different tools known as Assistive Technologies (ATs), can benefit people with disabilities in various spheres of life, including education, employment, and healthcare. Some obstacles are also highlighted in the chapter, such as the fact that not everyone comprehends the societal significance of these changes. However, the text concludes on a positive note by asserting that despite encountering obstacles, individuals are cooperating in an effort to foster a more inclusive and supportive global environment that welcomes all, including those who have Intellectual Disability (ID).

Objectives of this Training Subsection

- Summarise the evolution of the conceptualization of ID, emphasising societal barriers and the importance of supportive environments.
- Explain the role of reasonable accommodations and ATs in promoting workplace inclusion for individuals with ID.
- Analyse the impact of reasonable accommodations on job satisfaction, productivity, and employee retention in workplace settings.
- Examine the barriers faced by individuals with ID in accessing and utilising ATs.
- Develop strategies for creating an inclusive workplace, considering the implementation of reasonable accommodations and ATs.
- Discuss the ethical considerations in implementing reasonable accommodations and ATs, considering factors like individual autonomy, dignity, and equal opportunities.

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Introduction

Disability studies have undergone a paradigm shift, moving away from traditional deficit-oriented lenses in the exploration of PwID. This evolution is driven by a recognition of the limitations inherent in solely medical models, leading to the adoption of more inclusive and rights-oriented frameworks that emphasise their agency, strengths, and unique capacities, while acknowledging their potential for meaningful contributions to society. Even so, their full citizenship implies their inclusion in various axes, such as the work axis, which emphasises the strategies and technological factors that can facilitate it.

The aim of this chapter is to provide a comprehensive exploration of the role of reasonable accommodations and Assistive Technologies

(ATs) in supporting PwID in contemporary society with a specific emphasis on workplace inclusion.

Intellectual Disability in the Contemporary Context

The contemporary context's definition of ID has moved away from purely medical or deficit-based models toward more inclusive and rights-oriented frameworks. Two prominent paradigms shaping this understanding are the social model and the human rights model of disability.

The conceptualization and understanding of ID have evolved over time, towards a more holistic understanding that considers individual strengths, abilities, and the importance of supportive environments and interventions. Traditionally, ID was often viewed through a medical or deficit-oriented lens, focusing on an individual's impairments or limitations. However, contemporary perspectives emphasise the role of societal barriers in disabling individuals rather than solely attributing disability to an individual's impairments (Neuman et al., 2023). The shift towards a more inclusive and person-centred approach recognizes that individuals with ID have unique talents and capacities, and with appropriate support, accommodations, and interventions, they can lead fulfilling lives and actively contribute to their communities.

The social model of disability emphasises that disability is not solely an inherent trait of an individual but is largely influenced by societal barriers and attitudes. It focuses on how environmental, social, and attitudinal factors create barriers that hinder the full participation and inclusion of individuals with disabilities. This model advocates for structural and attitudinal changes in society to create a more inclusive environment for individuals with ID (Neuman et al., 2023).

The human rights model of disability places ID within the framework of universal human rights. It asserts that people with ID are entitled to the same rights and freedoms as anyone else, as enshrined in international conventions such as the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD). This model emphasises the importance of autonomy, self-determination, and

dignity for individuals with ID, advocating for their full participation in decision-making processes that affect their lives (Degener, 2017). A comprehensive understanding of ID highlights the need to recognize these individuals' agency and capabilities while challenging societal barriers and promoting inclusive policies and practices. By embracing these models, society can strive towards creating environments that empower individuals with ID to live fulfilling lives and actively contribute to their communities.

Nevertheless, it is important to highlight that individuals with disabilities – in this particular case ID – encounter multifaceted barriers that impede their full participation and inclusion in various facets of life. The necessity for reasonable accommodations and ATs for them is essential to ensure equal access, participation, and opportunities across various domains, including education, employment, and social engagement.

Reasonable accommodations, mandated by legal frameworks like the Americans with Disabilities Act (ADA, 2020) in the US, aim to remove barriers that might otherwise limit the involvement of people with disabilities. These accommodations encompass modifications in the environment, practices, or procedures, ensuring equitable access without imposing undue hardship. The provision of reasonable accommodations and ATs is essential for creating a more equitable society, ensuring that individuals with disabilities have the tools and opportunities needed to thrive and contribute meaningfully to their communities.

Assistive Technology (AT) plays a pivotal role in fostering accessibility. These technologies encompass a wide range of devices, software, and tools designed to mitigate the impact of disabilities. From screen readers and speech recognition software for individuals with visual impairments to adaptive keyboards or mobility aids, these technologies facilitate access to information, communication, and physical spaces. Both accommodations and ATs contribute to fostering inclusivity, empowering individuals with disabilities to lead more independent lives, and also promote their well-being, self-reliance, and confidence. Framing the need for reasonable accommodations and ATs involves recognizing these barriers and advocating for solutions, it might

involve modifications or adjustments in the environment, procedures, or policies that enable individuals with disabilities to have equal opportunities.

The Importance of Reasonable Accommodations

The implementation of reasonable accommodations has been proven to have positive effects, as supported by empirical evidence, which highlights their diverse range of benefits. Research consistently demonstrates that workplaces that adopt accommodations experience positive outcomes such as higher job satisfaction, increased productivity, improved employee retention, and decreased absenteeism (Nevala et al., 2015; Rumrill et al., 2023; Syma, 2019). In addition, providing individuals with ID not only promotes an environment that includes everyone but also adds to a workforce that is varied and creative, unlocking previously unexplored potential and talents (Park & Park, 2019; Syma, 2019).

Reasonable accommodations in educational settings are essential to create a learning environment that supports students with ID in reaching their academic potential (Heitplatz, 2020; Toutain, 2019). These accommodations involve tailored teaching approaches (Knight et al., 2019), assessments (Lovett, 2020), and personalised learning materials that cater to individual needs, fostering an inclusive educational experience where every student can thrive equally (Heitplatz, 2020). Similarly, in public spaces, either they are tangible or digital, adjustments must ensure that individuals can navigate independently and participate fully in various societal activities, promoting their inclusion and active engagement in the community, through cognitive accessibility (Cinquin et al., 2019; Roulstone & Morgan, 2014).

In healthcare environments, the scope of accommodations transcends physical accessibility, encompassing a crucial aspect often overlooked: cognitive accessibility for individuals with ID. Within this realm, communication aids play an indispensable role, facilitating effective interaction between healthcare providers and patients facing cognitive accessibility challenges (Michael & Richardson,

2008; Sevens, 2018). These accommodations stand as pillars, ensuring equitable access to healthcare services, but can also be extended to other public services, that ensure PwID have their rights and an engaged citizenship. For them, navigating these settings can be daunting due to communication barriers, sensory processing differences, and cognitive complexities. Recognizing these challenges, healthcare providers implement various communication aids tailored to meet diverse cognitive accessibility needs. Visual aids such as pictorial guides, easy-to-read written materials, and symbol-based communication systems serve as effective inclusion tools (Chinn & Homeyard, 2017; Newman, Fisher, & Trollor, 2023; Sevens, 2018).

Employers can improve their support for employees with ID by adopting a comprehensive and inclusive strategy, which involves acknowledging each employee's unique needs, fostering open dialogue, and tailoring accommodations to their specific requirements. Flexible schedules, physical accessibility, and ATs are essential. Aligned with this, comprehensive training for employees - with and without disability - mentorship programs, and equal opportunities for career growth are also crucial. Regular feedback from employees and collaboration with disability advocacy groups can refine support mechanisms, transforming workplaces into environments that accommodate and empower employees with ID, contributing to a more inclusive society and a diverse work culture.

The Role of Assistive Technologies (ATs)

AT is a broad term which encompasses assistive products as well as their related systems and services (WHO, 2022). This is illustrated by WHO's 5P model of people-centred AT which represents the AT system integrated around the person who requires AT (Figure 1). This system encompasses four integrated components which include AT products, AT personnel, AT provision, and AT policy. Importantly, AT can be used as an interface between the PwID's individual characteristics e.g. mobility, cognitive, sensory, and communication difficulties, and the workplace environment and could be the difference

between a PwID being able to work and having the necessary tools for successful employment or not (Alshamrani et al., 2023). Research has demonstrated that AT can positively impact the work performance of PwID (Morash Macneil et al., 2018). Furthermore, it has been suggested that AT could reduce the need for dependency on others such as job coaches (Heman et al., 2022). AT, is therefore considered to be of fundamental importance for PwID as it can enhance functional abilities and independence thereby ensuring inclusion in all aspects of life including the workplace (Boot et al., 2018). More specifically, AT can support PwID to obtain employment as well as to perform work-related tasks more independently (Alshamrani et al., 2023).



Figure 1. The 5P people-centred assistive technology model. Source: World Health Organization (<https://www.who.int/publications/i/item/9789240049451>)

In recent years, there has been an increased demand for AT in workplace settings due to an increase in technological advancements (Ward Sutton et al., 2022). AT products can be classified as low-, mid-, or high-tech depending on the complexity and materials utilised to produce the product. Low-tech AT products are generally less expensive and require minimal training to operate, while high-tech products utilise electronics and are more expensive to produce (Ward Sutton et al., 2022). The provision of AT for any individual should

consist of a matching process that takes into account individual needs and the requirements of the task in a specific context.

Individuals with ID may have difficulties with working memory, conceptual understanding, concentration, communication skills, time management skills, organisational skills, as well as poor motivation (Taubner et al., 2022). These difficulties may impact their ability to gain and maintain employment. Research has indicated that AT can be beneficial in workplace environments for people with ID as it can create positive changes to performance across tasks, although outcomes may differ according to the different types of AT and the type of outcome being measured (Morash Macneil et al., 2018).

Some ATs, particularly those that make use of mainstream technology such as handheld devices, have become more affordable, more readily available, and therefore more accessible (Morash Macneil et al., 2018). Examples of AT that have been specifically utilised to support employment for people with ID include the use of handheld computers, wearable technologies such as smartwatches, and portable electronic devices. Handheld computers can potentially aid individuals with ID by improving their organisational skills and enabling them to accomplish tasks independently. Wearable technology is a technological innovation integrating smart sensors, and its goal is to offer continuous, portable, and primarily hands-free digital accessibility. An example of that kind of technology is the smartwatch. Smartwatches enable users to autonomously utilise a variety of applications to enhance productivity, while also providing employers with the capability to oversee efficiency. Vibrating watches are another simple form of wearable AT that provides notifications to the wearer in terms of daily routines and events. Portable electronic devices have the ability to offer various prompts to aid individuals with ID in completing tasks, without the need for human support. Those prompts can be in the form of audio, video, or images, and in this way, the electronic devices support people with ID in independently performing work-related tasks (Morash-Macneil et al., 2018).

Importantly, people with ID and their support staff perceive the use of AT as positive, particularly when mainstream devices are used (Randall et al., 2019). This aspect is important considering that the

feelings and perceptions of individuals with ID should be taken into account during the selection process for AT.

The latest suggestions from the European Disability Forum (EDF) suggest that the ongoing advancement of AI-based applications and systems could open possibilities for their utilisation in education and employment. This development aims to facilitate the integration of PwID into the mainstream of accessibility (EDF, 2017; EDF, 2022). In terms of inclusion, the integration of AT in the workplace will involve artificial intelligence (AI), virtual and augmented reality, robotics, and smart environments (EDF, 2018). Recent progress in Socially Assistive Robotics (SAR) has demonstrated significant potential, motivating us to investigate the advantages of utilising robots for cognitive rehabilitation in individuals with ID. The findings of Mitchell et al. (2021) indicate that the active involvement of both the robot and the assistance provided by a tablet are crucial factors in engaging adults with ID and acting as facilitators of communication.

More recently augmented and virtual reality have also been considered as a means of supporting inclusion in the workplace. Virtual Reality (VR) has the potential to be empowering for individuals with ID, offering them a chance to practise and acquire new skills, particularly those involving abstract concepts that may be challenging to grasp (Jefferies, 2015). Communication aids may also be used to support PwID who have communication difficulties thus supporting inclusion in the workplace. For those with mobility challenges, mobility aids such as wheelchairs may be used to support transport to the workplace as well as between places in the workplace.

The pros and cons of technologies for people with intellectual disabilities (PwID) depend on how easy to use, affordable, organised, and well-supported these technologies are. These technologies are helpful in areas like communication, mobility, and accessing information (Global Disability Innovation Hub, 2021). Despite many benefits towards the use of AT to support inclusion in the workplace, barriers towards AT continue to persist and these can be largely categorised within the four integrated components of the 5P cycle. Barriers include poor matching of AT products to the PwID as this group of individuals requires individualised assessments (Morash

MacNeil et al., 2018). Specifically, support staff may not have the necessary assessment skills and/or knowledge of AT to match the technology to the potential user (Boot et al., 2018). Damianidou et al. (2019) note that as more sophisticated technology becomes available on the market, the need to select AT on an individual level has become even more important. Furthermore, once the AT is identified, there may be difficulties with access to AT products due to cost and a lack of funding mechanisms (Heman et al., 2022). When AT is procured, support to learn to use the AT is required, yet this may not be available (Ward Sutton et al., 2022). On the most basic level, the attitudes of employers may be a barrier, and they may perceive that a PwID is not capable of being employed (Rahmatika et al., 2022). While many of these issues can be addressed individually, national policies are required to progress in this area. Policies present an overarching commitment to the provision of AT products and systems to ensure access to AT for everyone on a rights-based level (WHO, 2022).

Challenges and Future Directions

Creating an inclusive workplace for individuals with ID is an ongoing journey that requires addressing various challenges (Robinson et al., 2020). Positioning our reflection in a social-driven model of disability, it is possible to say that one significant hurdle lies in the implementation of reasonable accommodations tailored to the unique needs of these individuals (Gould-Werth, Morrison, & Ben-Shalom, 2018). The lack of standardised guidelines often leads to ambiguity, making it difficult for employers to provide the necessary support (Vornholt, et al., 2018).

Additionally, misconceptions and stigma surrounding ID can foster a reluctance among employers to embrace accommodations wholeheartedly. Changing mindsets and fostering awareness are crucial to dismantling these barriers and creating an environment where individuals with ID are viewed through the lens of their abilities rather than limitations (World Health Organization, 2022).

Integrating ATs poses another set of challenges. Identifying suitable technologies that cater to diverse needs can be complex, given the

spectrum of ID. Ensuring that these technologies are user-friendly and easily adaptable is vital for their successful implementation. The cost associated with acquiring and maintaining ATs also poses a financial challenge for both employers and individuals (Smith, et al., 2022).

The need for ongoing training for both employers and employees is evident. Many workplaces lack the necessary knowledge and skills to effectively utilise these accommodations and technologies. Bridging this gap through training programs can enhance awareness, understanding, and acceptance, fostering a more inclusive work environment (Moore et al., 2020).

Looking ahead, emerging trends and innovations offer promising avenues for supporting workplace inclusion for individuals with ID. Advances in artificial intelligence and machine learning can contribute to the development of more personalised ATs. Tailoring solutions to individual needs can optimise effectiveness and improve overall workplace integration (Jurado-Caraballo et al., 2022).

Collaboration between employers, advocacy groups, and government bodies is essential for developing comprehensive policies and guidelines. Standardising reasonable accommodations and AT implementation can provide a clearer roadmap for organisations, streamlining the process and promoting consistency across industries (Zallio, & Clarkson, 2022). Furthermore, the integration of VR and Augmented Reality (AR) technologies holds potential for creating immersive training experiences (Bailey et al., 2022). This could enhance understanding and empathy among employees, fostering a more inclusive workplace culture.

To conclude, while challenges persist in implementing reasonable accommodations and ATs for individuals with ID in the workplace, there is hope on the horizon. Continued efforts to raise awareness, coupled with advancements in technology and collaborative policy development, can pave the way for a more inclusive and supportive work environment for everyone (Vornholt et al., 2018).

Conclusions and Key Takeaways

Ultimately, the current comprehension of ID has progressed towards

a broader and more comprehensive approach, prioritising the social and human rights perspectives of disability. This shift acknowledges the significance of personal strengths, capabilities, and the influence of supportive surroundings in promoting the well-being and active engagement of PwID in their communities. The implementation of reasonable accommodations and ATs are essential in eliminating obstacles and advancing equitable accessibility in diverse fields.

Empirical evidence has demonstrated that implementing reasonable accommodations in the workplace leads to favourable results in terms of job satisfaction, productivity, and employee retention. Additionally, it fosters a diverse and innovative workforce. Customised accommodations in educational settings and public spaces guarantee an all-encompassing environment where individuals with ID can flourish on an equal footing. Cognitive accessibility aids, such as communication tools, are crucial in healthcare for promoting efficient interaction and ensuring fair access to services.

ATs, which include a wide variety of devices and systems, play a crucial role in promoting accessibility. Emerging technologies such as AI, VR, and SARs have the potential to greatly improve workplace inclusion. Notwithstanding the advantages, persistent challenges include inadequate alignment of technologies with individual requirements, financial obstacles, and attitudinal concerns.

Establishing an inclusive work environment necessitates tackling obstacles associated with the execution of appropriate adjustments and the incorporation of supportive technologies. Crucial elements include the implementation of standardised protocols, the dissemination of awareness campaigns, continuous training, and effective collaboration among all parties involved. In the future, upcoming trends and advancements show potential for customised solutions and immersive training experiences, leading to a more inclusive and supportive work environment for individuals with ID. The persistent endeavours to increase awareness, along with progress in technology and cooperative policy formulation, provide optimism for a future that is more inclusive.

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