

EDUCATION'S ROLE IN LABOUR MARKET INCLUSION FOR PEOPLE WITH DISABILITIES

TOMPA, J., VUJICA BEHARIC, R., VUJICA HERZOG, N.

Abstract: *The study provides an in-depth analysis of the complex challenges faced by people with disabilities in finding and maintaining employment. A comprehensive approach shows how education, ergonomics and modern technologies can contribute significantly to their successful integration into the labour market. The results of the study will inform the revision of higher curricula and provide future professionals with the knowledge they need to create an inclusive work environment by analysing the current situation, best practises and modern technologies in depth. In addition, the study emphasises the importance of raising public awareness of the value of integrating people with disabilities into the world of work to stimulate discussion and change social norms and stereotypes that hinder their employment. In this way, it not only contributes to a theoretical understanding of the challenges, but also offers concrete solutions and recommendations to support the sustainable integration of people with disabilities into the labour market.*

Key words: *education, ergonomics, disabled persons, inclusive work environment*



Authors' data: Dr. Sc. **Tompa**, J[asna], M. Sc. Vujica Beharic, R[osanda], Assoc. Prof. Dr. Sc. **Vujica Herzog**, N[atasa]; University of Maribor, Faculty of Mechanical Engineering, Smetanova 17, 2000 Maribor, Slovenia, jasna.tompa@um.si, rosanda.vujica@um.si, natasa.vujica@um.si

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1. Introduction

Finding and maintaining employment in the labor market is a major challenge for people with disabilities, as they often face numerous barriers that limit their professional engagement. These barriers include lower productivity, higher labor and training costs, the risk of social exclusion, and the feeling of being socially stigmatized and discriminated against [Aroonsrimorakot et al., 2022]. People with disabilities often encounter inaccessible workplace designs, insufficient support structures, and employers' reluctance to hire them, which exacerbates these issues [Malecka et al., 2024]. This underscores the need for concerted efforts to break down these barriers and foster a more inclusive environment. In this context, raising awareness among all stakeholders - employers, educational institutions, policymakers, and the general public - is crucial for promoting cooperation and joint efforts to eliminate these barriers.

This study aims to highlight the complexity of barriers faced by people with disabilities while proposing effective solutions to promote a more inclusive work environment also using modern technologies. As highlighted by Kruse [Kruse et al., 2023], assistive technologies can greatly enhance the ability of people with disabilities to perform their jobs productively. These technologies range from those tailored to specific disabilities, such as screen readers for the visually impaired, to more general technologies that facilitate work across various types of disabilities [Nierling & Maia, 2020]. For instance, the use of ergonomic tools, software for speech recognition, and specialized input devices can improve accessibility in the workplace. Recent trends show a rise in ergonomic workplace design, as well as a growing interest in reliable, fast, and automatic tools for motion capture and analysis, which can enhance workspaces for people with limited mobility [Rybníkář et al., 2023].

Some examples of such advancements are highlighted by Vujica Herzog and Buchmeister [Vujica Herzog and Buchmeister, 2023], presenting a case studies on the use of motion capture technology for optimizing workplace ergonomics. This technology, originally developed for performance tracking in sports and animation, is now finding applications in designing accessible and ergonomic work environments for people with disabilities. The potential for these technologies to create adaptable workstations that cater to an individual's physical abilities holds significant promise for improving employment outcomes for disabled workers. In this study, the potential of such innovations is explored, providing valuable insights into how assistive technologies can transform traditional workplaces.

In addition to technology, knowledge of ergonomics and inclusive hiring practices is essential for creating accessible workplaces. However, such knowledge is often lacking not only among employers [Tammy Jorgensen et al., 2023], but also among professionals involved in workplace design and adaptation for people with disabilities. This lack of awareness and expertise leads to significant challenges in integrating people with disabilities into the workforce, as their specific needs are not adequately addressed [Tylutki et al., 2024]. The study suggests that expanding its target group to include a diverse range of stakeholders, such as company representatives, disability organizations, chambers of commerce, ministries, and adult education institutions,

would foster a more comprehensive understanding of labor market needs and create synergies between theory and practice. By engaging all relevant parties, this would help raise public awareness and encourage employers and other stakeholders to invest in creating inclusive and ergonomic work environments.

The role of education is particularly emphasized in the study, as tailored training programs can equip future professionals with the necessary skills to support people with special needs in the workplace. Despite the availability of cutting-edge technologies, existing teaching methods often fail to incorporate innovative knowledge related to the ergonomic design of workplaces for people with disabilities [Jarosław S. Kardas, 2015]. This represents a missed opportunity, as enhancing higher education curricula with this specialized knowledge could significantly improve employment prospects for people with disabilities. The current fragmentation of relevant knowledge necessitates a more systematic and integrated approach to teaching, ensuring that professionals are better prepared to support inclusive workplace initiatives. In turn, this would also facilitate the sharing of best practices and expertise between local educational institutions and the broader community.

In conclusion, the study calls for systemic changes across various sectors to overcome the barriers people with disabilities face in the labor market. Key recommendations include developing new curricula that address the challenges of employing people with disabilities and focusing on the essential skills of empathy, communication, and ergonomic workplace design. These educational reforms, combined with changes in labor practices and social policies, would promote the sustainable employability of people with disabilities and create workplaces that are inclusive, supportive, and beneficial for all employees. By fostering such an environment, companies could also boost productivity and innovation, leveraging the diverse talents and perspectives of their workforce. Ultimately, this holistic approach, involving education, ergonomics, and modern technology, would pave the way for more equitable opportunities in the labor market and contribute to the broader societal goal of inclusion.

2. Methodology

The study was based on a three-stage methodology comprising a literature review, empirical research (interviews, surveys), and an investigation into the potential of modern technologies, such as the Xsens sensor suit, to assess disability-related abilities. This comprehensive approach allowed the research to cover a wide range of perspectives and sources of information, ensuring both theoretical depth and practical applicability.

Initially, a comprehensive review of academic and non-academic literature was conducted to gain an overview of the current situation of people with disabilities in the labor market, with a particular focus on Slovenia and the wider European context. The process began with an extensive search of academic literature in several databases, including Web of Science, ProQuest, Sage Journals, and Scopus. The search targeted topics related to the challenges and opportunities for the inclusion of people with disabilities in the workplace, the impact of modern technologies and ergonomic

solutions on their employability, and best practices in inclusive employment. Particular attention was paid to identifying gaps in the current research, with the aim of addressing these through the study's empirical phase.

The literature review extended beyond academic sources to include non-academic literature, such as government reports, white papers, and policy documents. These sources provided insights into national strategies for the employment of people with disabilities, highlighting institutional frameworks and key organizations that promote inclusive employment. Additionally, case studies of successful employment initiatives for people with disabilities were analyzed to extract practical examples of good practices. Relevant legislation concerning the employment of persons with disabilities was also examined, particularly in relation to the rights of employees with disabilities, employer obligations, and incentives designed to encourage inclusive hiring practices. This review of the legal framework was crucial in identifying potential areas for policy improvement and understanding the regulatory landscape affecting people with disabilities in the workforce. The scientific literature, combined with insights from policy documents and case studies, served as a foundation for the development of a structured interview questionnaire, which was later used to conduct qualitative research with various stakeholders in the field.

To gain deeper insights, focus group interviews were conducted with stakeholders from both the disability and employment sectors. These interviews aimed to explore the various factors that contribute to the current employment situation for people with disabilities, as well as to identify potential areas for improvement. Interviews were conducted with employers and employees with disabilities from a wide range of organizations, some of which had extensive experience in managing inclusive work environments, while others had less experience in this area. Professionals from disability advocacy organizations were also interviewed, providing additional perspectives on the challenges and opportunities associated with inclusive employment. This diverse approach allowed for a rich exploration of multiple perspectives and experiences, which contributed to a comprehensive understanding of the key issues.

In total, 19 in-depth interviews were conducted with employers and 10 with employees with disabilities, each lasting between one and two hours. These interviews were conducted in various formats, including face-to-face meetings, telephone calls, and video conferences, between February and April 2024. The interviews covered topics such as the challenges of hiring and retaining employees with disabilities, the role of assistive technologies in the workplace, and the perceived effectiveness of current policies and practices. Employers were asked about their experiences with inclusive hiring, any accommodations they had made for employees with disabilities, and their perceptions of the benefits and challenges of maintaining an inclusive workplace. Employees with disabilities were asked to share their personal experiences of the workplace, including any barriers they had encountered and the support they had received.

To complement the qualitative research, a quantitative study was conducted in the form of an online survey. This survey targeted a representative sample of employees with disabilities from various sectors of the economy.

In total, 40 randomly selected employees participated in the survey, which included questions developed based on both the literature review and the findings from the in-depth interviews. The survey focused on identifying specific challenges faced by employees with disabilities, such as workplace accessibility, the availability of assistive technologies, and the level of support from employers and colleagues. The results provided quantitative data that helped to further clarify trends and patterns observed in the qualitative interviews.

A combination of analytical methods was used to process the data collected from the literature review, interviews, and surveys. Qualitative data from the interviews were summarized in thematic tables to highlight key findings, while quantitative data from the survey were processed using Excel, with the results presented in tables and charts that showed percentage distributions. This mixed-methods approach allowed for a clear discussion of the integration and employment of people with disabilities, bringing together both qualitative insights and quantitative trends. The analysis revealed both positive examples of successful inclusion and areas where significant gaps and challenges remain.

The final part of the research focused on testing the potential of modern technologies, such as the Xsens sensor suit, in assessing disability-related abilities. To do this, a special test environment (polygon) was set up in which participants, both with and without disabilities, performed a series of tasks while their movements were tracked using the Xsens sensor suit. This technology allowed for precise motion capture and analysis, providing detailed data on participants' physical abilities and how these differed based on disability status. The tests were designed to simulate workplace tasks and assess how ergonomic interventions, and assistive technologies could be used to improve efficiency and accessibility for employees with disabilities.

The Xsens sensor suit, purchased as part of the RIUM project at the University of Maribor, proved to be a valuable tool in this phase of the research. The Xsens MVN Awinda system transmitted data from 17 wireless motion sensors to a laptop, where it was later processed using Process simulate software for further analysis. This data allowed researchers to identify specific areas where workplace adaptations could be made to support employees with disabilities, such as adjusting workstation height, providing specialized seating, or designing workflows that minimize physical strain.

Based on the data collected through all three phases of the study, the findings will be used to inform a thorough revision of existing curricula in higher education. The focus will be on incorporating modern technologies and ergonomic solutions into educational programs to better prepare future professionals to design and manage inclusive workplaces. This curriculum revision will emphasize the practical application of assistive technologies and ergonomic principles, ensuring that future graduates are equipped with the skills and knowledge needed to support the employment of people with disabilities. Furthermore, the study calls for the development of specific training modules for employers and workplace designers, aimed at raising awareness of the benefits of inclusive hiring and the use of modern technologies to enhance workplace accessibility.

3. Results and discussion

3.1 Employment of people with disabilities in Slovenia: Key challenges, legal solutions, strategies and good practises

The integration of people with disabilities into the Slovenian labor market is a multifaceted social issue that necessitates a comprehensive and multidisciplinary approach. Despite ongoing efforts to improve the situation, people with disabilities continue to experience significant barriers to employment, which negatively impact their ability to secure and retain jobs. According to recent data from the Statistical Office of the Republic of Slovenia, the unemployment rate for people with disabilities has stagnated between 2020 and 2024, remaining at approximately 16%. This persistent rate highlights the enduring challenges faced by this demographic, even in the face of policy initiatives aimed at increasing their participation in the labor market. These statistics are presented in Table 1, with the title "Unemployment Dynamics by Group Over the Last Five Years", which details unemployment rates across various demographic groups, including people with disabilities.

	Women	Young people	Older people	Lower educated	First-time job seekers	Long-term unemployed	Disabled people
							
Avg. 2024	50.3	18.2	37.8	32.2	13.5	42.2	16.1
Dec. 2023	48.6	20.4	37.5	33.9	15.5	43.0	16.1
Dec. 2022	49.4	18.7	38.8	32.8	14.8	54.5	15.9
Dec. 2021	50.0	19.3	38.5	32.5	15.8	56.4	16.1
Dec. 2020	50.2	21.0	35.4	31.2	14.6	45.1	14.0

Tab. 1. Unemployment dynamics by group over the last five years [Slovenia, 2024].

One of the primary challenges for people with disabilities in Slovenia's labor market is the lack of accessible workplaces. Many companies are either unaware of the legal requirements for accessibility or lack the financial resources to make necessary adaptations. Additionally, employers often hold misconceptions about the productivity and capabilities of individuals with disabilities, leading to discrimination and limited hiring opportunities. This is compounded by a lack of awareness and training among employers about the benefits of inclusive hiring and how to effectively support employees with disabilities. Another significant challenge is the mismatch between the skills possessed by people with disabilities and the needs of the labor market.

While some people with disabilities may require accommodations, others may need access to specialized training or adaptive technologies to thrive in their roles. However, training opportunities tailored to the needs of people with disabilities are often limited, and there is insufficient coordination between education systems, vocational training providers, and employers to bridge this gap.

Moreover, the lack of long-term support mechanisms is a recurring issue. While some individuals may succeed in securing employment, maintaining their position in the long term can be difficult due to fluctuating health conditions or inadequate workplace accommodations. As a result, people with disabilities may cycle in and out of employment, further entrenching their exclusion from the labor market.

Slovenia has implemented several legal measures to promote the employment of people with disabilities, which align with both national legislation and broader European Union frameworks. The Vocational Rehabilitation and Employment of Persons with Disabilities Act provides a legal basis for the protection of the rights of workers with disabilities and establishes guidelines for their employment. This law outlines the obligations of employers, including ensuring accessibility in the workplace and making reasonable accommodations for employees with disabilities. Employers are also required to report on the employment status of people with disabilities and can receive incentives for inclusive hiring, such as tax benefits and financial subsidies for workplace adaptations.

The Quota System for Employment of Persons with Disabilities is another key legal mechanism aimed at increasing employment rates among this group. Under this system, companies with more than 20 employees are mandated to ensure that a certain percentage of their workforce is made up of people with disabilities. Failure to comply with this quota results in penalties, while companies that meet or exceed the quota are eligible for financial incentives. Despite the quota system's positive impact, it has faced criticism for being overly focused on compliance rather than fostering genuine inclusion. Some employers hire people with disabilities to meet the quota but fail to provide them with meaningful work or long-term career development opportunities.

The Act on Equal Opportunities for Persons with Disabilities further strengthens the legal framework by addressing discrimination in the workplace and promoting equal opportunities. This legislation also introduces provisions for vocational rehabilitation, which helps people with disabilities reintegrate into the workforce after injury or illness. However, there are concerns that the enforcement of these laws is uneven, and many people with disabilities still struggle to access their legal rights.

In recent years, Slovenia has developed several national strategies aimed at improving the labor market inclusion of people with disabilities. The National Program for Employment of Persons with Disabilities (2021-2027) is the most significant policy framework in this area. This program sets out specific goals for increasing the employment rate of people with disabilities, improving accessibility in the workplace, and enhancing vocational training opportunities. It also emphasizes the importance of fostering collaboration between employers, educational institutions, and social services to create a more supportive environment for people with disabilities entering or re-entering the labor market.

Another important strategy is the Action Plan for Equal Opportunities of Persons with Disabilities, which outlines concrete steps to reduce unemployment and promote social inclusion. The action plan focuses on areas such as education, vocational rehabilitation, and raising public awareness about the abilities and contributions of people with disabilities. The plan also calls for the development of assistive technologies and ergonomic solutions to enhance workplace accessibility and productivity for employees with disabilities.

Despite the challenges, there are several examples of good practices in Slovenia that demonstrate how inclusive employment can be achieved. One such example is the Inclusive Employment Centre (Zaposlitveni Center), a social enterprise that provides meaningful employment opportunities for people with disabilities. The center not only ensures that employees have access to supportive environments and necessary accommodations, but it also emphasizes skill development and career advancement. Through partnerships with local businesses, the center helps integrate people with disabilities into mainstream employment, providing them with long-term job prospects.

Another successful initiative is the Employment Rehabilitation Service, which offers vocational rehabilitation programs tailored to the needs of individuals with disabilities. These programs provide personalized support, including job coaching, skills training, and assistance in finding suitable employment. The service works closely with employers to ensure that workplaces are adapted to meet the needs of people with disabilities, fostering more sustainable employment outcomes.

Additionally, Slovenia has seen the successful implementation of various corporate social responsibility (CSR) programs by private companies aimed at promoting the employment of people with disabilities. These programs often involve partnerships with disability organizations, providing training, mentorship, and accessible job placements. Companies participating in these programs have reported positive outcomes, including increased employee satisfaction and enhanced workplace diversity.

The unemployment rate of people with disabilities in Slovenia continues to fall short of expectations, despite the comprehensive legal framework that has been established to promote their employment. Since the introduction of the quota system in 2004, Slovenia has taken significant steps to encourage employers to hire people with disabilities. The quota system plays a crucial role in this effort by mandating that organizations with more than 20 employees must ensure a certain percentage of their workforce is composed of people with disabilities. Although designed to reduce employment inequalities, the quota system alone has not been sufficient to overcome the complex challenges that people with disabilities face in the labor market. Employers often view the quota as a compliance obligation rather than an opportunity to genuinely integrate people with disabilities into their workforce. Consequently, while the quota system has increased the number of job placements, it has not fully addressed the quality or sustainability of employment for this group. In addition to the quota system, Slovenia's legal framework includes a number of essential laws aimed at ensuring the rights of people with disabilities and promoting equal employment opportunities. The Employment Relations Act outlines general labor protections, while the Vocational Rehabilitation and Employment of Disabled Persons Act focuses on

providing vocational rehabilitation services and promoting employment for people with disabilities. The Equal Opportunities for Persons with Disabilities Act addresses discrimination and enforces accessibility standards in workplaces. Furthermore, the Equal Opportunities for Women and Men Act also plays a role in promoting equity by ensuring that both gender and disability are considered in efforts to create an inclusive workforce.

In addition to the legal regulations, there are also numerous strategic guidelines for improving the employment of persons with disabilities, such as the Equality Union: Strategy for the Rights of Persons with Disabilities (2021 - 2030), the Programme for Persons with Disabilities (2022 - 2030) and the Strategic Plan of the Association of Working Disabled Persons of Slovenia (2022 - 2026). These strategies aim to increase the employability of people with disabilities, improve the accessibility of workplaces and raise employers' awareness of the importance of including people with disabilities in the workforce.

A key challenge remains the limited awareness among employers about the potential benefits of hiring people with disabilities. Many employers are unaware of the financial incentives, training programs, and support services available to assist them in making their workplaces more accessible. In some cases, employers may have concerns about the cost or complexity of accommodating employees with disabilities, which further discourages inclusive hiring practices. Addressing these concerns is one of the main goals of the above-mentioned strategic plans, which include provisions for educating employers on the advantages of inclusive workplaces. Studies show that companies that adopt inclusive hiring practices often experience higher levels of employee loyalty, productivity, and innovation. However, these positive outcomes are often underpublicized, and the visibility of good practices in hiring and retaining people with disabilities remains limited.

Organizations dedicated to supporting the integration of people with disabilities into the labor market play an important role in implementing these strategies. In Slovenia, both state institutions and non-governmental organizations (NGOs) are active in this space. State institutions such as the Slovenian Employment Service provide essential services, including job placement assistance, vocational rehabilitation, and support for both employers and employees. Additionally, NGOs such as the Slovenian National Council of Disability Organisations and the Slovenian Association of Disabled Employees are instrumental in advocating for the rights of people with disabilities and providing resources to help them navigate the labor market. These organizations work to ensure that people with disabilities are not only able to find employment but are also supported in maintaining long-term, sustainable careers.

Further collaboration between government, businesses, and these organizations is essential to fully realize the goals of the legal framework and national strategies. For example, the Slovenian Association of Vocational Rehabilitation Providers plays a crucial role in helping people with disabilities develop the skills needed to meet the demands of modern workplaces.

These providers offer individualized rehabilitation plans that focus on developing job-specific skills, enhancing self-confidence, and ensuring that people with disabilities are able to take full advantage of available employment opportunities.

Likewise, the Slovenian Association of Associations of the Deaf and Hard of Hearing focuses on the specific needs of individuals with hearing impairments, ensuring that they have access to vocational training and that workplaces are equipped with appropriate assistive technologies.

Despite these efforts, good practices in the employment of people with disabilities are often underrepresented in public discourse, and their benefits are not widely recognized. Successful initiatives that have contributed to improving the employment situation for people with disabilities exist but need to be more actively promoted. These initiatives often demonstrate how targeted interventions—such as tailored training programs, mentorship schemes, and workplace modifications—can lead to more sustainable and meaningful employment outcomes. Examples of such good practices are highlighted in Figure 1: Examples of Successful Initiatives and Programs. This figure showcases various programs that have proven effective in promoting the employment of people with disabilities in Slovenia. For instance, some companies have implemented specialized mentorship programs where experienced employees provide guidance and support to new hires with disabilities, helping them navigate the workplace and develop their careers. Other initiatives focus on job matching services that ensure individuals are placed in roles that align with their skills and abilities, improving retention rates and overall job satisfaction.

3.2 Findings from empirical research and literature review

The aim of the literature review was to provide a theoretical basis for our own research and to identify gaps in knowledge about the employment of people with disabilities and the integration of this topic into education.

Table 2 contains a number of keywords that were used in the search for online literature on the employment of people with disabilities. It is evident that this area is well covered in the academic literature, with many examples demonstrating an active approach to addressing this topic. Certain approaches to the ergonomic design of workplaces for people with disabilities have been particularly successful, such as adapting workstations and technologies to improve efficiency and safety for workers with disabilities. Some studies also report notable progress in addressing ergonomic challenges in the design phase of the manufacturing process, which promotes sustainability [Hasanain, 2024]. In addition, [Leber et al., 2018] how that general workplace adaptations significantly increase both productivity and satisfaction of workers with disabilities.

However, it is noticeable that many databases did not provide a sufficient number of results when we used keywords related to "motion capture" or "motion capture systems". This indicates a possible gap in the literature on the use of advanced technologies for workplace customisation. A similar trend can be observed in the field of education, where topics such as disability, employment and ergonomic workplace design are receiving increasing attention. However, the application of technologies such as "motion capture" and "assistive technology" is still largely unexplored. This highlights the need for further studies to investigate how these technologies can be effectively integrated into curricula and educational programmes.

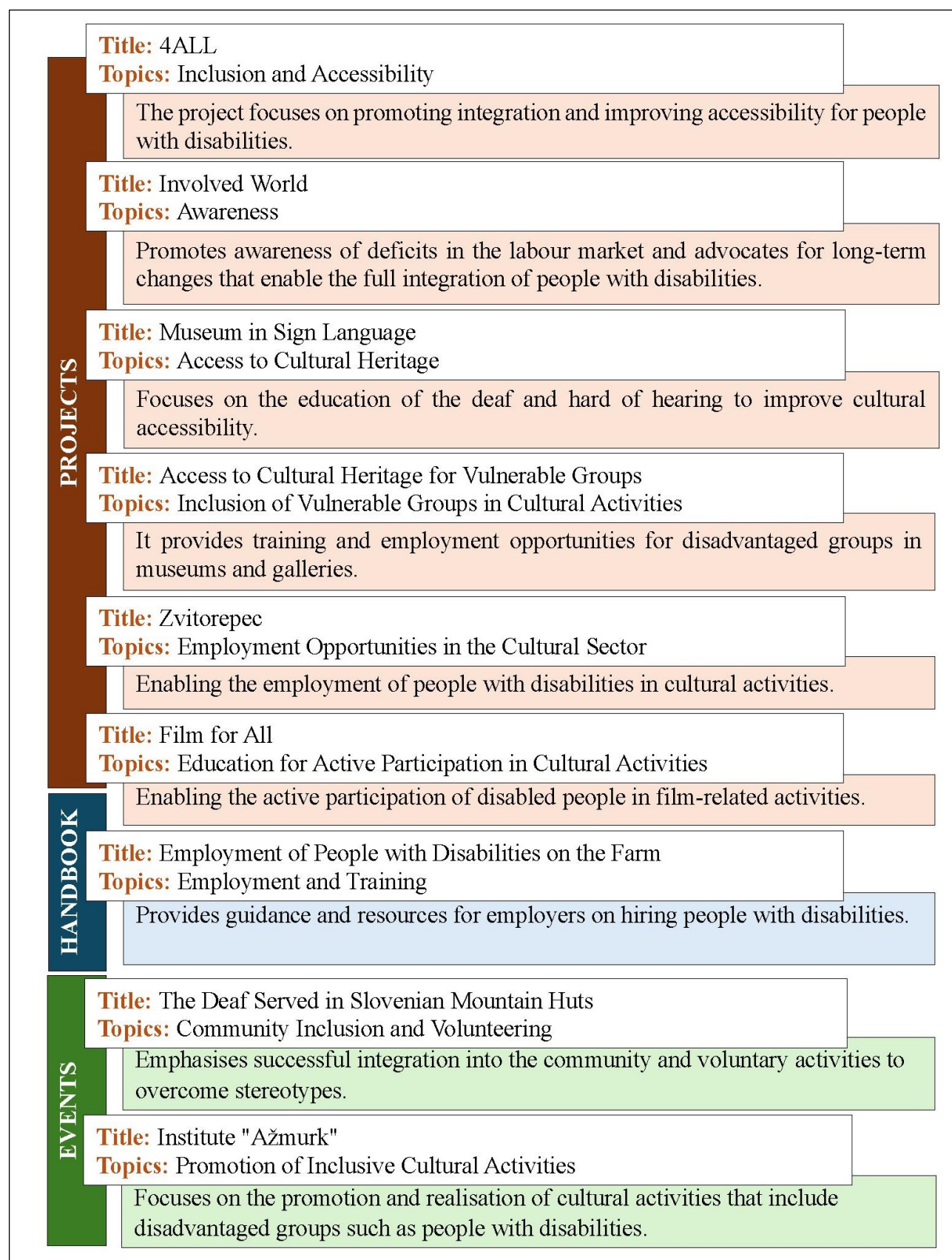


Fig. 1. Examples of good practises for the integration of people with disabilities in Slovenia

Keyword /Search term	Number of hits (All fields & Abstract)			
	1	2	3	4
■ Disabilities	269.660	99.038	35.579	373.769
[+] ■ Workers with disabilities	6.129	3.040	5.722	10.695
[+] ■ Ergonomic workplace design	11	6	5	20
[+] ■ Motion capture systems	0	0	0	1
[+] ■ Employment	7.831	4.332	3.628	11.766
[+] ■ Ergonomic	26	10	23	40
[+] ■ Motion capture	0	0	0	0
■ Education	630.651	123.025	146.166	1.528.093
[+] ■ Curriculum	72.252	69.652	15.376	123.279
[+] ■ Disability and employment	39	86	84	69
[+] ■ Motion capture technology	0	0	0	0
[+] ■ Disability and work	5.478	3.796	1.611	6.284
[+] ■ Ergonomic workplace design	7	2	0	3
[+] ■ Assistive technology	0	0	0	0

Tab. 2. Search results by keyword from Web of Science (1), ProQuest (2), Sage Journals (3) and Scopus (4).

Insights into the advantages and disadvantages of integrating people with disabilities into the working environment were gained through interviews with employers and employees with disabilities. Employers emphasised that successful integration depends on giving people with disabilities a sense of belonging and benefit. Most employers are willing to invest in professional support, workplace adaptations, training and awareness-raising, as they have found that with appropriate support, the work performance of these employees is comparable or even better than that of employees without disabilities. However, employers also face certain challenges, such as longer induction periods, limited financial resources for workplace adjustments and the poorer health of people with disabilities, which can affect their long-term job stability.

On the other hand, employees with disabilities emphasised that the key factors for successful employment are their desire, willingness and initiative, as well as support from the employer, effective communication and good mutual relations. Flexible workplaces and ergonomic adjustments are important aspects of successful inclusion as they help people with disabilities to integrate more easily into the work environment. However, workers often face challenges such as limited social skills, sensory issues, adapting to a new working environment, a prolonged period of familiarisation with a new workplace and new colleagues, inflexible supervisors and burnout.

To gain a better understanding of the experiences and obstacles faced by employees with different types of disabilities, we conducted an online survey of professionals. The survey included 40 participants, 55% of whom were women and 45% of whom were men. The participants had a wide range of work experience, from less than ten to more than thirty years. The results show that people with disabilities are successfully integrated into the working environment of various companies, with the most common employment sectors being the primary industry and manufacturing.

Table 3 shows the results of the assessment of various workplace factors by respondents with disabilities. Respondents rated on a five-point Likert scale the need

for workplace adjustments (a), training and development opportunities, job satisfaction and ergonomic adjustments (b), as well as employer awareness and the need for customised workplaces for people with disabilities (c). In addition to the distribution of responses, the tables also show the average ratings for each area.

With an overall average of 3.78, 76% of respondents either agreed with the statements or rated them as important for the recruitment process. For statements a), the results indicate a generally positive experience of workplace adjustments for people with disabilities. The highest average agreement was for the adaptability of the workplace (4.14) and the work equipment (4.12), indicating that most respondents feel that their special needs are well accommodated. However, the lower average agreement of 2.9 for the need for adjustments before starting work suggests that the initial adjustments may have been insufficient for some. Nevertheless, the impact of the adjustments on work efficiency is relatively strong with an average agreement of 3.52, showing that these adjustments are helpful once they have been made.

With regard to statement b), the results show that employers are successfully adapting to the needs of people with disabilities. For example, most respondents, with an average agreement of 3.97, agree that their employers provide training and inform employees about hazards and their impact on the work environment. Opportunities for personal development and career progression were rated slightly lower with an average agreement of 3.44, indicating room for improvement in this area. However, satisfaction with disability-specific support is high (4.04), reflecting successful adaptation to workplace conditions. The very good rating for workplace ergonomics (4.19) also confirms that the working environment is generally well adapted to individual needs.

In section c), the lowest mean agreement with the importance of the statement (3.64) was found for “lack of employer awareness of policies, practises and strategies for employing people with disabilities”. However, respondents were slightly more concerned about 'prejudice and misconceptions about the abilities of people with disabilities', with a mean score of 3.75. The highest mean score in this section relates to 'lack of accessible workplaces' (3.86), highlighting the need for further workplace adjustments to improve the inclusion and effectiveness of employees with disabilities.

3.3 The potential of motion capture technology for the ergonomic design of workplaces for people with disabilities

According to an analysis of the literature and scientific publications, motion capture technology is mainly used to evaluate ergonomics in industry and logistics, while its application in healthcare, sports and other areas is less common [Rybníček et al., 2023].

In order to investigate the potential of this technology in less researched areas such as the design of accessible workplaces, we designed and conducted a special test polygon. In this polygon, participants with and without disabilities performed a series of movement tasks, including fast walking, obstacle navigation, walking backwards, sitting and standing on one leg. Their movements were accurately measured and recorded using motion capture technology.

The results of the experiment, collected from 30 participants between March and August 2024, with particular focus on their subjective feedback on performance and the devices used, are presented in Table 4.

Area / Statements \ Scale		Percentage of participants					Average	
		1	2	3	4	5		
a)	My workplace required adjustments to meet my needs before starting the job	24 %	18 %	18 %	24 %	16 %	2.90	3.67
	The workplace is adapted to my individual needs	3 %	3 %	13 %	39 %	42 %	4.14	
	Work tools are adapted to my individual needs	3 %	5 %	11 %	39 %	42 %	4.12	
	The adjustments have helped me effectively in my work	8 %	8 %	34 %	24 %	26 %	3.52	
b)	My employer trains or instructs employees on hazards and their impact on the work environment - especially for individuals with disabilities	0 %	0 %	21 %	61 %	18 %	3.97	3.91
	My workplace provides me with opportunities for self-development and/or professional advancement	16 %	8 %	13 %	42 %	21 %	3.44	
	I am satisfied with my current professional situation in terms of the support provided regarding my disability	3 %	5 %	11 %	47 %	34 %	4.04	
	The current ergonomics of my workplace meet my disability-related needs	0 %	3 %	11 %	55 %	32 %	4.19	
c)	Prejudices and misconceptions about the abilities of individuals with disabilities	0 %	13 %	28 %	35 %	25 %	3.75	3.75
	Lack of employer awareness regarding policies, practices, and strategies for employing individuals with disabilities	3 %	8 %	40 %	25 %	25 %	3.64	
	Lack of adapted workplaces to meet the needs of individuals with disabilities	3 %	8 %	20 %	48 %	23 %	3.86	
Overall average results: 3.78								

Tab. 3. Assessment of workplace factors by respondents with disabilities using a five-point Likert scale (1: I Don't Agree at All / Very Small Impact to 5: I Totally Agree / Very Large Impact)

The results show that motion capture technologies represent a promising approach to designing workplaces for people with disabilities and offer customised solutions for their specific needs. After the test phase, the research work will move into practical application and focus on the ergonomic design of workplaces for individuals.

4. Conclusions

The inclusion of people with disabilities in the Slovenian labour market is a complex issue that requires a comprehensive and sustainable approach. Despite existing legal frameworks and policies, current practises, including the quota system, have proven insufficient to effectively address these challenges.

The data clearly shows that the employment rate of people with disabilities in Slovenia is still significantly lower compared to other European countries.

Feedback information	Description
Execution time:	The analysis of the total processing time for the course showed that the group with disabilities needed more time on average to complete all tasks than the group without disabilities. The largest difference was observed in the total time, with an average difference of 20 seconds.
Difficulty:	Participants without disabilities rated the tasks as easy, while participants with disabilities had greater difficulties, particularly when walking backwards, overcoming obstacles and maintaining balance.
Equipment comfort:	Both groups were of the opinion that the Xsens sensor suit was easy to use and comfortable to wear, which enabled the test to run smoothly.
Usability of equipment:	Both groups of participants confirmed the user-friendliness of the tool. 95 % of participants rated the tool as easy to use, while 90 % were satisfied with its functionality. These results indicate that the tool is suitable for a wide range of users, regardless of their specific needs.
Experience satisfaction:	Most participants expressed satisfaction with the test and considered it to be an interesting and valuable experience. However, some participants with disabilities pointed out that they needed better training beforehand in order to be able to fulfil the tasks better.

Tab. 4. Analysis of participant feedback from the experiment.

Lack of awareness among employers, inaccessible workplaces and a lack of adapted educational programmes are just some of the many challenges that hinder the integration of people with disabilities into the labour market. For example, many workplaces are still physically inaccessible to people with disabilities and are not ergonomically adapted to their needs, which further hinders their integration into the labour market. Furthermore, employers often fear the additional costs associated with hiring and adapting jobs for people with disabilities, even though various financial incentives are available. To improve this situation, it is crucial to raise awareness among employers, employees and the general public about the importance of disability inclusion and the benefits of a diverse workforce. To bring about lasting change, it is essential to start with a change in mind-set at the educational level. A comprehensive overhaul of the education system to systematically incorporate this challenge and revise existing curricula would equip future generations of professionals with the knowledge and skills needed to develop and implement effective measures to integrate people with disabilities into the labour market. An important part of this is understanding the ergonomics of workplace design and utilising advanced technologies to improve the accessibility and usability of the working environment for all people.

The results of the conducted research will be used in the future for further studies. We will primarily focus on performing and evaluating movement measurements of a larger group of individuals, including various participants (younger/older, male/female), using the Xsens sensor suit.

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