

Technology Access, Acceptance, and Application for Disability Inclusion in Vocational Education: A Scoping Review

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HOW TO CITE: ABSTRACT:

Mohau Ben Manyarela, Carlie Luzaan Schlebusch (2026). Technology Access, Acceptance, and Application for Disability Inclusion in Vocational Education: A Scoping Review.

International Journal of Special Education, 41(21s), 1369-1383

Technology has become an important enabler of disability inclusion, yet evidence on how students with disabilities access, accept, and apply technology remains dispersed across vocational education research. This scoping review synthesised contemporary evidence on technology use for disability inclusion in Technical and Vocational Education and Training (TVET) and related vocational education contexts. Guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR), peer-reviewed studies published between 2020 and 2026 were systematically identified, screened, and analysed using the Technology Access, Acceptance, and Application (TAAA) framework. Twenty-seven studies met the inclusion criteria and formed the basis of the review. Across the included studies, technology enhanced learning, communication, assessment, participation, and transition to employment when supported by accessible infrastructure, institutional commitment, and inclusive pedagogical practices. However, barriers such as inadequate funding, inaccessible digital environments, limited professional development, inconsistent policy implementation, and uneven digital competence continued to restrict meaningful technology use. The review highlights that equitable disability inclusion depends not only on access to digital and assistive technologies but also on their acceptance by users and their effective application within teaching, learning, and assessment. By synthesising evidence through the TAAA framework, this review offers a structured perspective on technology-enabled disability inclusion and identifies priorities for institutional practice, policy development, and future research aimed at strengthening inclusive vocational education.

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Keywords: Assistive technology; disability inclusion; vocational education; digital accessibility; Technology Access, Acceptance and Application (TAAA).

1. Introduction

Digital transformation has reshaped teaching, learning, and assessment, creating new opportunities to improve participation and educational outcomes for students with disabilities. Advances in assistive technologies, accessible digital platforms, learning management systems, artificial intelligence, and mobile technologies have expanded opportunities to reduce learning barriers and promote more inclusive educational environments. International frameworks, including the United Nations Convention on the Rights of Persons with Disabilities (CRPD) and UNESCO's commitment to inclusive and equitable quality education, recognise technology as a key enabler of educational access and participation (United Nations, 2006; UNESCO, 2020). Recent research shows that technology enhances communication, learning, assessment, skills development, and educational participation when supported by accessible infrastructure, institutional commitment, and inclusive pedagogical practices (Fernández-Batanero et al., 2022; Fanshawe et al., 2024; Monyarela et al., 2025; Al-Zahrani, 2025; Maina et al., 2025; Maurya et al., 2025; Murillo-Jiménez et al., 2025). Evidence from other educational sectors, including early childhood education, also demonstrates that appropriate technological support and inclusive practices improve participation and learning outcomes for learners with disabilities (Mosala & Sefotho, 2026).

Despite these advances, progress towards technology-enabled inclusion has been uneven across vocational education systems. Studies continue to report barriers such as inaccessible digital environments, inadequate assistive technology provision, unreliable digital infrastructure, insufficient professional development for educators, and inconsistent institutional investment. These challenges influence not only whether students can access technology but also whether it becomes an effective component of teaching, learning, and assessment (Fanshawe et al., 2024; Maina et al., 2025; Murillo-Jiménez et al., 2025; Sipamla & Maqoqa, 2026). Similar concerns are evident

within Technical and Vocational Education and Training (TVET), where practical instruction, workplace learning, and competency-based assessment require technologies that are accessible, reliable, and responsive to diverse learning needs (Im-motna, 2025; Ryökkynen & Rätty, 2022).

Research on disability inclusion has increasingly examined assistive technologies, digital accessibility, Universal Design for Learning (UDL), artificial intelligence, and technology-enhanced learning (Monyarela et al., 2025; Ahmad et al., 2025; Mendoza, 2025). Although these studies have expanded understanding of technology-enabled inclusion, the evidence remains dispersed across educational sectors, disability groups, institutional contexts, and technology types. Existing reviews frequently focus on higher education or individual technologies rather than examining how technology access, acceptance, and application interact within vocational education. Consequently, there is limited synthesis of the conditions that shape technology use throughout the educational process, from gaining equitable access to digital resources to applying technology effectively in teaching, learning, assessment, and preparation for employment.

This gap is particularly important because vocational education differs from many other educational contexts. Students are expected to develop occupational competence through practical learning, workplace experience, and competency-based assessment. For students with disabilities, successful participation depends not only on access to assistive technologies but also on inclusive instructional practices, supportive institutional policies, accessible learning environments, and educators who are equipped to integrate technology into everyday teaching. These interrelated factors suggest that disability inclusion cannot be understood by considering technology availability or user attitudes independently; rather, they require a broader perspective that recognises how technological, institutional, and educational factors operate together within vocational education.

To address this gap, this scoping review synthesises contemporary evidence on technology use for disability inclusion in vocational education using the Technology Access, Acceptance, and Application (TAAA) framework. The framework provides a structured lens for examining how equitable access to technology, user acceptance, and meaningful educational application interact to influence disability-inclusive teaching, learning, and assessment. Guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR), the review maps current evidence, identifies recurring barriers and enabling conditions, and highlights areas requiring further investigation.

The review was guided by the following research question: **What evidence exists regarding technology access, acceptance, and application for disability inclusion in vocational education, and what barriers, enablers, and knowledge gaps emerge from the current literature?** By bringing together evidence from diverse vocational education contexts, this review provides a comprehensive synthesis of contemporary research while demonstrating the value of the TAAA framework for organising evidence on technology-enabled disability inclusion. The findings offer evidence-informed insights to support institutional practice, policy development, and future research aimed at strengthening equitable participation and student success within vocational education.

2. Methodology

2.1 Research Design

This study adopted a scoping review design to map and synthesise contemporary evidence on technology access, acceptance, and application for disability inclusion in vocational education. A scoping review was considered appropriate because research on technology use among students with disabilities spans multiple disciplines, educational settings, disability groups, and technology types. Rather than evaluating the effectiveness of a specific intervention, the review sought to identify the breadth of available evidence, examine recurring patterns, and

identify gaps requiring further investigation. The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) to ensure a transparent and systematic review process (Tricco et al., 2018). The methodological approach was further informed by the scoping review frameworks developed by Arksey and O'Malley (2005) and Peters et al. (2020).

2.2 Eligibility Criteria

Peer-reviewed studies published between **2020 and 2026** were considered for inclusion if they examined the use of digital technologies, assistive technologies, or technology-enhanced learning to support students with disabilities within Technical and Vocational Education and Training (TVET) or related vocational education settings. Qualitative, quantitative, mixed-methods, systematic review, scoping review, and conceptual studies were included where they addressed technology use in teaching, learning, assessment, accessibility, participation, or transition to employment.

Studies were excluded if they focused exclusively on primary or secondary education, examined disability inclusion without a technology component, investigated technology use among populations other than students with disabilities, or consisted of editorials, conference abstracts, dissertations, book reviews, or publications written in languages other than English.

2.3 Search Strategy and Information Sources

A comprehensive literature search was conducted using **Scopus, ScienceDirect, and Google Scholar**, which provide extensive coverage of educational technology, disability studies, inclusive education, and vocational education research. These databases were selected to capture peer-reviewed studies relevant to technology use among students with disabilities in Technical and Vocational Education and Training (TVET).

The search strategy combined controlled vocabulary and free-text keywords using the Boolean operators **AND** and **OR**. Search terms included combinations of *students with disabilities*,

assistive technology, technology, digital accessibility, vocational education, Technical and Vocational Education and Training (TVET), inclusive education, and technology adoption. Additional relevant studies were identified through backward reference searching of eligible articles and by consulting previously downloaded publications available through SpringerLink where they met the inclusion criteria.

2.4 Data Charting and Extraction

A structured data-charting form was developed to ensure consistent extraction of information from the included studies. Data extracted from each article included author(s), publication year, country, educational context, participant characteristics, research design, technology focus, and key findings. Additional fields captured evidence relating to **technology access**, **technology acceptance**, and **technology application**, enabling systematic mapping of findings using the Technology Access, Acceptance, and Application (TAAA) framework. This process facilitated comparison across studies while preserving the contextual characteristics of each investigation.

2.5 Data Analysis

The extracted evidence was analysed using thematic synthesis guided by the Technology Access, Acceptance, and Application (TAAA) framework. The analysis involved repeated reading of the included studies, followed by coding of relevant findings and grouping similar codes into broader themes.

Technology **access** referred to evidence concerning the availability, accessibility, affordability, and institutional provision of digital and assistive technologies. Technology **acceptance** captured findings relating to user attitudes, digital competence, confidence, perceived usefulness, educator preparedness, and willingness to engage with technology. Technology **application** focused on the integration of technology into teaching, learning, assessment, communication, practical training, and transition to employment. Similarities,

differences, and evidence gaps identified across the included studies formed the basis of the thematic synthesis presented in the Results section.

2.6 Trustworthiness and Rigour

Several measures were implemented to enhance the rigour of the review. Predefined eligibility criteria reduced selection bias during the screening process, while adherence to the PRISMA-ScR reporting guidelines provided a transparent record of study identification, screening, eligibility assessment, and inclusion. A structured data-charting process ensured consistency during data extraction, and application of the TAAA framework provided a coherent structure for analysing evidence across diverse educational contexts. Collectively, these procedures strengthened the credibility, dependability, and transparency of the review.

3. Results

3.1 Study Selection

The literature search identified 168 records from the three primary databases (Scopus, ScienceDirect, and Google Scholar), supplemented by studies identified through reference list screening and previously downloaded SpringerLink publications that met the inclusion criteria. After removing 29 duplicate records, 139 studies remained for title and abstract screening.

Screening against the predefined eligibility criteria excluded 85 records, leaving 54 full-text articles for detailed assessment. Following full-text review, 27 studies were excluded because they were conducted outside vocational education contexts, did not focus on students with disabilities, lacked a technology component, or failed to meet the remaining inclusion criteria. Consequently, 27 peer-reviewed studies, published between 2020 and 2026, were included in the final synthesis. The study selection process is presented in Figure 1 following the PRISMA-ScR reporting guidelines.

The study selection process is summarised in **Figure 1**, which illustrates the identification, screening, eligibility assessment, and final inclusion of studies in accordance with the PRISMA-ScR reporting guidelines.

Systematic Literature Review Selection Process

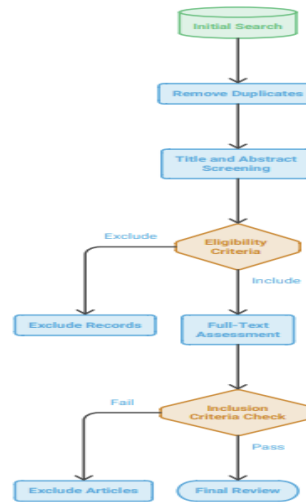


Figure 1. PRISMA-ScR Flow Diagram of the Study Selection Process

3.2 Characteristics of the Included Studies

The **27** included studies demonstrate increasing international interest in technology-enabled disability inclusion within vocational education and related post-school contexts. Publication frequency increased noticeably after 2023, with most included studies published between 2024 and 2026, reflecting growing scholarly interest in digital transformation, assistive technologies, and disability-inclusive vocational education.

The included studies represented diverse educational contexts and methodological approaches, drawing evidence from several world regions. Qualitative research was the dominant methodological approach, complemented by quantitative, mixed-methods, systematic review, scoping review, and conceptual studies. Participants included students with disabilities,

lecturers, vocational education teachers, disability support practitioners, institutional leaders, employers, and policymakers.

The technologies investigated ranged from conventional assistive technologies, such as screen readers and Braille displays, to learning management systems, mobile technologies, artificial intelligence, accessible digital platforms, and technology-enhanced assessment tools. Together, these studies provide a broad evidence base for understanding technology use across vocational education.

The characteristics of the included studies are presented in **Table 1**, while **Table 2** maps each study to the Technology Access, Acceptance, and Application (TAAA) framework that guided the thematic synthesis.

Table 1. Characteristics of the 27 Studies Included in the Review Across Vocational and Related Post-School Education Contexts

No.	Author(s)	Year	Educational Context	Study Design	Focus	Main Contribution
1	Al-Zahrani	2025	Higher education	Quantitative study	Accessible learning technologies	Evaluated the impact of accessible learning technologies on student engagement and academic performance.

No.	Author(s)	Year	Educational Context	Study Design	Focus	Main Contribution
2	Bouthakhanh & Cheausuwantavee	2025	Vocational education and training (TVET)	Qualitative study	Inclusive vocational education	Examined disability-inclusive vocational education initiatives and community-based implementation strategies.
3	Fanshawe et al.	2024	Secondary education	Qualitative study	Assistive technology	Identified barriers and enablers influencing equitable participation of learners with blindness or low vision.
4	Fernández-Batanero et al.	2022	Inclusive education	Systematic review	Assistive technology	Synthesised evidence on assistive technologies supporting disability inclusion.
5	Fischer & Kilpatrick	2023	Vocational education and training (VET)	Qualitative study	Transition support technologies	Investigated technology-supported pathways from school to vocational education and employment.
6	Giana & Fauzan	2025	Inclusive vocational education	Case study	Vocational skills development	Developed a framework for managing vocational skill programmes for Deaf students.
7	Hunt	2021	Inclusive education	Conceptual paper	Assistive technology	Highlighted the importance of early identification and early intervention through assistive technology for educational inclusion.
8	Im-motna	2025	Technical and vocational education	Quantitative study	Institutional readiness	Evaluated institutional readiness for disability-inclusive TVET.
9	Layton et al.	2024	Assistive technology services	Scoping review	Assistive technology services	Identified best-practice guidelines for equitable assistive technology service provision.
10	Maina et al.	2025	Vocational education	Conceptual paper	Digital competence	Proposed a framework integrating digital and social competences in vocational education.
11	Maurya et al.	2025	Higher education	Systematic review	Disability inclusion	Synthesised evidence on disability inclusion in higher education and identified future research priorities.
12	Mendoza	2025	Higher and vocational education	Literature review	Inclusive technologies	Reviewed technology-supported disability inclusion across higher

No.	Author(s)	Year	Educational Context	Study Design	Focus	Main Contribution
						and vocational education.
13	Monyarela et al.	2025	Technical and Vocational Education and Training (TVET)	Qualitative study	Educational and assistive technologies	Demonstrated how technology supports the transition of students with disabilities into TVET colleges.
14	Murillo-Jiménez et al.	2025	Inclusive education	Scoping review	Digital technologies	Identified barriers affecting the implementation of digital technologies in inclusive education.
15	Ryökkynen & Rättyä	2022	Vocational education and training (VET)	Qualitative study	Inclusive teaching technologies	Explored how vocational special needs teachers promote inclusion in TVET.
16	Setiyarini Abdullah &	2022	Vocational training	Conference paper	Inclusive vocational training	Examined approaches to training persons with disabilities in mainstream vocational training centres.
17	Simos & Katsiampoura	2025	Inclusive education	Literature review	Digital learning tools	Reviewed the use of digital tools to enhance inclusive classroom practices.
18	Sipamla & Maqoqa	2026	School education	Case study	Assistive technology integration	Investigated teachers' digital competence and confidence in assistive technology integration.
19	Van der Westhuizen & Visagie	2025	Assistive technology services	Framework paper	Outcome measurement	Developed a social impact framework for evaluating inclusive assistive technology services.
20	Veytia Bucheli et al.	2024	Higher education	Quantitative study	Universal Design for Learning	Investigated digital technologies supporting Universal Design for Learning in higher education.
21	Mosala & Sefotho	2026	Inclusive education	Legal and policy analysis	Inclusive education policy	Examined legal frameworks supporting inclusive education for learners with disabilities.
22	Delubom et al.	2020	Technical and Vocational Education and Training (TVET)	Quantitative study	Inclusive education	Investigated managers' challenges in implementing inclusive education within TVET colleges.

No.	Author(s)	Year	Educational Context	Study Design	Focus	Main Contribution
23	Muzite & Gasa	2024	Technical and Vocational Education and Training (TVET)	Qualitative study	Student experiences	Explored the experiences of students with disabilities in TVET colleges.
24	Mosalagae & Bekker	2021	Technical and Vocational Education and Training (TVET)	Qualitative study	Disability inclusion	Examined the inclusion and exclusion of students with intellectual disabilities in TVET institutions.
25	Debele	2024	Inclusive education	Literature review	Technology integration	Examined how technology integration supports inclusive learning environments for students with disabilities.
26	Shaw et al.	2025	Employment transition	Conceptual paper	Disability-inclusive employment	Examined approaches to disability-inclusive employment and workplace participation.
27	Filippou et al.	2025	Higher education	Systematic literature review	Inclusive policies	Synthesised evidence on inclusive policies and practices in higher education.

Table 2. Mapping the Included Studies to the Technology Access, Acceptance, and Application (TAAA) Framework

No.	Study	Technology Access	Technology Acceptance	Technology Application
1	Al-Zahrani (2025)	Accessible learning technologies improved equitable access to digital learning.	Students reported positive perceptions of accessible technologies.	Accessible technologies enhanced engagement and academic performance.
2	Bouthakhanh & Cheausuwantavee (2025)	Community initiatives expanded access to vocational education for persons with disabilities.	Stakeholder collaboration strengthened commitment to inclusive vocational education.	Technology supported disability-inclusive vocational training and skills development.
3	Fanshawe et al. (2024)	Assistive technologies improved access for learners with blindness or low vision.	School support influenced learners' confidence in using assistive technologies.	Assistive technologies promoted equitable classroom participation.
4	Fernández-Batanero et al. (2022)	Assistive technologies reduced barriers to educational access.	Positive perceptions supported technology adoption.	Assistive technologies enhanced inclusive teaching and learning.
5	Fischer & Kilpatrick (2023)	Technology improved access to vocational pathways and employment opportunities.	Employer engagement strengthened confidence in inclusive vocational participation.	Technology supported transition from school to vocational education and employment.

No.	Study	Technology Access	Technology Acceptance	Technology Application
6	Giana & Fauzan (2025)	Digital resources increased access to vocational programmes for Deaf learners.	Inclusive programme design encouraged technology acceptance.	Digital technologies strengthened vocational skills development and communication.
7	Hunt (2021)	Early provision of assistive technologies improved educational access.	Early intervention promoted acceptance by learners and professionals.	Assistive technologies supported learning participation and inclusion.
8	Im-motna (2025)	Institutional readiness influenced equitable access to TVET.	Organisational preparedness encouraged technology adoption.	Institutional readiness strengthened disability-inclusive TVET implementation.
9	Layton et al. (2024)	Equitable assistive technology services improved technology access.	User-centred service delivery strengthened confidence in technology use.	Best-practice service provision improved implementation of assistive technologies.
10	Maina et al. (2025)	Digital competence frameworks expanded access to learning opportunities.	Digital and social competences strengthened readiness to use technology.	Competence frameworks supported technology integration across vocational education.
11	Maurya et al. (2025)	Institutional support improved access for students with disabilities.	Inclusive institutional environments promoted technology acceptance.	Technology enhanced participation and student success in higher education.
12	Mendoza (2025)	Coordinated institutional support improved access to inclusive education.	Student-centred support strengthened confidence in technology use.	Technology enhanced participation across higher and vocational education.
13	Monyarela et al. (2025)	Assistive technologies and institutional support improved access to TVET.	Positive institutional support strengthened confidence in technology use.	Technology facilitated successful transition into TVET and inclusive learning.
14	Murillo-Jiménez et al. (2025)	Inadequate infrastructure limited technology access.	Educator preparedness influenced technology acceptance.	Institutional barriers constrained technology implementation in inclusive education.
15	Ryökkynen & Rättyä (2022)	Inclusive teaching practices improved access in vocational education.	Teacher expertise strengthened confidence in technology integration.	Assistive technologies supported inclusive vocational teaching and learning.
16	Setiyarini & Abdullah (2022)	Mainstream vocational centres expanded access for persons with disabilities.	Inclusive training approaches promoted stakeholder acceptance.	Technology supported vocational skills development and workforce preparation.
17	Simos & Katsiampoura (2025)	Digital tools improved classroom accessibility.	Positive educator attitudes supported technology use.	Digital technologies strengthened inclusive classroom practices.

No.	Study	Technology Access	Technology Acceptance	Technology Application
18	Sipamla & Maqoqa (2026)	Professional development improved access to assistive technology knowledge.	Teacher competence and confidence promoted technology acceptance.	Educators integrated assistive technologies into teaching practice.
19	Van der Westhuizen & Visagie (2025)	Assistive technology ecosystems improved service accessibility.	Stakeholder collaboration strengthened acceptance of assistive technology services.	Outcome measurement supported continuous improvement of inclusive services.
20	Veytia Bucheli et al. (2024)	Digital technologies increased accessibility in higher education.	Universal Design for Learning promoted positive perceptions of digital inclusion.	Digital technologies strengthened inclusive teaching and learning.
21	Mosala & Sefotho (2026)	Inclusive legal frameworks promoted equitable educational access.	Rights-based approaches strengthened institutional commitment to inclusion.	Legal frameworks guided inclusive educational practice.
22	Delubom et al. (2020)	Limited institutional resources constrained disability inclusion in TVET.	Leadership and management influenced institutional readiness.	Institutional strategies shaped implementation of inclusive education.
23	Muzite & Gasa (2024)	Students reported unequal access to support services and learning resources.	Institutional responsiveness influenced student experiences.	Technology and support services affected participation and success in TVET.
24	Mosalagae & Bekker (2021)	Access to TVET remained constrained for students with intellectual disabilities.	Institutional attitudes influenced inclusion.	Inclusive practices supported participation in vocational education.
25	Debele (2024)	Technology integration expanded access to inclusive learning environments.	Educator readiness supported technology acceptance.	Technology integration strengthened inclusive teaching and learning.
26	Shaw et al. (2025)	Inclusive employment initiatives expanded access to workplace opportunities.	Employer commitment promoted acceptance of disability inclusion.	Technology supported transition into inclusive employment.
27	Filippou et al. (2025)	Inclusive institutional policies strengthened equitable educational access.	Inclusive policy environments encouraged technology adoption.	Policy implementation supported inclusive higher education practices.

3.3 Technology Access: Availability and Accessibility of Digital and Assistive Technologies

Across the reviewed studies, technology access emerged as the foundation of disability-inclusive

vocational education. Rather than focusing solely on the availability of digital devices, access encompassed digital infrastructure, assistive technologies, institutional support, and contextual conditions that enabled students with

disabilities to participate effectively in teaching, learning, and assessment.

Three patterns were consistently identified. First, reliable digital infrastructure, including internet connectivity, accessible learning management systems, and digital learning environments, was essential for equitable participation. Second, assistive technologies such as screen readers, speech-to-text software, Braille technologies, and accessible mobile applications expanded educational opportunities when accompanied by appropriate technical support. Third, institutional arrangements including Disability Support Units, accessibility policies, funding mechanisms, and technical services played an important role in determining whether students could access available technologies.

Although the nature of access barriers varied across educational contexts, the evidence consistently demonstrated that meaningful technology access depended on coordinated institutional investment rather than technology provision alone. The detailed evidence supporting these patterns is summarised in Table2.

3.4 Technology Acceptance: Readiness, Confidence, and Engagement with Technology

Technology acceptance extended beyond individual willingness to use digital tools and was shaped by the interactions among student readiness, educator competence, and institutional commitment, as well as the perceived educational value of digital and assistive technologies. Furthermore, studies showed that access to technology did not automatically translate into its effective use.

Students were more likely to engage with technology when they possessed appropriate digital skills, received technical support, and experienced technologies that were accessible and responsive to their learning needs. Similarly, educators demonstrated greater willingness to integrate technology, with professional development opportunities strengthening their

competence in assistive technologies, accessible digital resources, and inclusive teaching practices.

Institutional commitment also influenced acceptance through leadership support, disability inclusion policies, and investment in accessible learning environments. Across the reviewed studies, positive educational experiences reinforced confidence in technology, whereas inaccessible systems, insufficient training, and limited institutional support reduced long-term engagement. These findings indicate that technology acceptance extends beyond individual attitudes and reflects the broader educational environment in which technology is introduced and supported.

3.5 Technology Application: Technology Integration in Vocational Education

Technology application represented the practical integration of digital and assistive technologies into vocational education. The included studies illustrated how digital and assistive technologies were applied across teaching, learning, assessment, vocational skills development, communication, and transition to employment.

Within teaching and learning, technology supports accessible instructional materials, flexible learning opportunities, communication, collaboration, and independent study. Digital assessment platforms and assistive technologies also contributed to more accessible assessment practices by enabling students to demonstrate knowledge and vocational competence through alternative formats and reasonable accommodations.

Several studies further highlighted the contribution of technology to work-integrated learning and transition to employment, where assistive technologies, workplace accommodations, and digital communication tools strengthened occupational participation and employability. More recent publications reported increasing use of artificial intelligence, adaptive learning systems, and accessible digital platforms, reflecting a shift towards integrated digital ecosystems that support disability inclusion across the educational journey. Collectively, the

reviewed studies demonstrate that technology application extends beyond classroom instruction to support broader educational participation and successful transition into employment.

4. Discussion

4.1 Interpreting the Findings

This review examined technology access, acceptance, and application among students with disabilities in vocational education. The findings indicate that these dimensions are closely interconnected. Access to technology provides the foundation for inclusion, but access alone does not ensure meaningful participation. Students and educators must also possess the skills, confidence, and institutional support necessary to integrate technology into teaching, learning, and assessment. Across the reviewed studies, institutions that combined accessible infrastructure with disability support services, professional development, and inclusive policies demonstrated more effective technology integration. These findings suggest that disability inclusion is influenced as much by institutional capacity as by the availability of technology itself.

4.2 Implications for Policy and Practice

The findings highlight the need for TVET institutions to adopt a coordinated approach to technology-enabled disability inclusion. Investment should extend beyond purchasing assistive technologies to include accessible digital infrastructure, staff development, technical support, and sustainable funding mechanisms. Disability Support Units should play a strategic role in coordinating technology provision, while institutional policies should promote digital accessibility as part of broader inclusive education initiatives. Strengthening these areas is likely to improve equitable participation and student success within vocational education.

4.3 Contribution of the TAAA Framework

This review demonstrates the value of the Technology Access, Acceptance, and Application (TAAA) framework as a lens for synthesising research on disability-inclusive technology. Rather than viewing technology adoption as a

single process, the framework shows that meaningful implementation depends on the interaction between access, user acceptance, and practical application. Organising the evidence around these three dimensions provides a structured understanding of technology use within vocational education and offers a conceptual foundation for future research and institutional practice.

4.4 Limitations of the Review

This review has several limitations. Only English-language, peer-reviewed publications were included, which may have excluded relevant evidence published in other languages or grey literature. The review also focused on studies published between 2020 and 2026, reflecting recent developments in digital and assistive technologies but excluding earlier research. In addition, the evidence was drawn from diverse educational and geographical contexts, which may limit the direct transferability of some findings to specific TVET systems. Despite these limitations, the review provides a comprehensive synthesis of contemporary evidence on the use of technology for students with disabilities in vocational education.

5. Conclusion

This scoping review synthesised current evidence on technology access, acceptance, and application among students with disabilities in vocational education. The findings demonstrate that technology contributes to disability inclusion when accessible infrastructure, assistive technologies, institutional support, and inclusive teaching practices are implemented in a coordinated manner. The review demonstrates that technology adoption is influenced by the interaction between technology access, user acceptance, and meaningful educational application rather than by technology availability alone.

The Technology Access, Acceptance, and Application (TAAA) framework provided a useful structure for organising and interpreting the evidence, highlighting the interdependence of

these three dimensions in promoting inclusive vocational education.

The review recommends that TVET institutions strengthen digital accessibility, invest in assistive technologies, expand professional development for educators, and embed disability inclusion

within institutional policies and support services. Future research should evaluate the long-term impact of emerging technologies, including artificial intelligence, on disability inclusion and student success in vocational education, particularly within under-researched TVET contexts.

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7. Acknowledgements (Optional)

- Prof. L Schlebusch as co-author and Doctoral supervisor for guidance and contribution on the PRISMA-ScR refinement.
- As the Corresponding Author has impairment (Dyslexia), the author acknowledges the use of Grammarly for language and grammar refinement. The content remains the author's original intellectual work.

8. Author Declaration

Author Contributions: Conceptualisation, literature review, methodology, analysis, drafting, and revision were undertaken by the author.

Funding: This research did not receive any external funding.

Conflicts of Interest: The author declares no conflict of interest.