TEVET Curriculum Adaptations Responsive To Skills Development for Students with Visual Impairment in TEVET Institutions in Zambia

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ABSTRACT

This study explored the responsiveness of Technical Education, Vocational and Entrepreneurship Training (TEVET) curriculum adaptations for students with Visual Impairment (VI) in Zambian institutions. Grounded in the Social Model of Disability and the Universal Design for Learning (UDL) framework, the research investigated how current

Findings reveal that while localized adaptations such as strategic seating, task analysis, and improvised tactile materials are practiced, they are largely driven by individual lecturer initiative rather than systemic policy. Implementation is significantly hindered by a "Disability Gap" characterized by unsuitable infrastructure, a critical shortage of standardized assistive technology, and rigid academic timelines that fail to account for non-visual processing. The study concludes that for TEVET in Zambia to be truly responsive, there must be a transition from adhoc improvisations to formalized, well-funded inclusive standards. Key recommendations include the establishment of a National TEVET Inclusive Resource Fund, mandatory inclusive pedagogy training for instructors, and the adoption of competency-based modularization to provide the temporal flexibility required by learners with VI.

Key Words: Curriculum, Curriculum adaptations, Skills Development, Responsiveness, Stakeholders, Visual Impairment

INTRODUCTION

Technical Education, Vocational and Entrepreneurship Training (TEVET) is an essential foundation for economic advancement and poverty alleviation globally. TEVET institutions facilitate the transition from education to the job market by imparting practical skills and competencies (International job Organization (ILO), 2020). To actualise the goal of "Skills for All," the curriculum must be comprehensive. In numerous developing countries, the shift from academic understanding to practical skill development poses a considerable challenge for students with impairments, especially those with Visual Impairment (VI) (UNESCO, 2021).

International frameworks, such the United Nations Sustainable Development Goal 4 (SDG 4) and the Convention on the Rights of Persons with Disabilities (CRPD), require governments to ensure inclusive and equitable quality education (United Nations, 2006; 2015). Notwithstanding these rules, pupils with visual impairments in Sub-Saharan Africa frequently encounter pedagogical isolation. This transpires when the curriculum initially intended for sighted students is not modified to include braille, tactile graphics, or assistive technologies, hence excluding visually impaired students from high-demand technical disciplines (Lamichhane, 2015).

The Zambian government has advanced through the TEVET Act No. 13 of 1998 and the National Policy on Education (Educating Our Future), which underscore the entitlement of every Zambian to vocational training access (Ministry of Education, 1996; TEVETA, 1998). Historically, the Zambian TEVET sector has been

focused on "able-bodied" learners. Students with visual impairments have challenges not just in physical access to campuses but also in instructional access (Kalabula, 2007).

In the majority of Zambian TEVET institutes, the curriculum is inflexible. Practical evaluations usually depend significantly on visual indicators, and instructional materials are largely print-oriented. Despite increasing recognition of the necessity for inclusion, empirical information about the adaptation of teaching techniques, assessment tools, and learning materials by lecturers to accommodate the special needs of visually impaired learners remains insufficient (Munalula, 2020). In the absence of tailored curriculum modifications, students with visual impairments may graduate possessing theoretical knowledge while lacking the practical skills essential for competing in the Zambian economy, resulting in ongoing marginalisation and unemployment.

Problem statement

The optimal framework for inclusive education in Zambia is based on the TEVET Act No. 13 of 1998 and the National Policy on Education, which obligate the government to ensure equitable vocational training for all (Ministry of Education, 1996; TEVETA, 1998). This goal is endorsed by international mandates such as SDG 4, which foresee a TEVET system where curriculum, examinations, and practical modules are effectively tailored to accommodate the tactile and auditory needs of students with visual impairments. In this optimal condition, training results are entirely congruent with both tailored learner assistance and the competency requirements of the local labour market.

A substantial disparity between rhetoric and reality persists, as TEVET courses are primarily tailored for sighted learners, relying heavily on visual instruction and print materials (Munalula, 2020). Educators frequently lack the requisite pedagogical expertise and resources to adjust technical modules, resulting in a deficiency of documented evidence regarding the execution of curriculum changes (Chiti & Musonda, 2021). This disconnection perpetuates the Medical Model of disability, which perceives the student's handicap as the issue instead of recognising the institution's inadequacy in offering an accessible and responsive learning environment (Kalabula, 2007).

Neglecting to address these deficiencies creates a skills gap paradox, wherein students may be physically present in classrooms yet remain cognitively and practically marginalised, ultimately resulting in elevated attrition and failure rates (UNESCO, 2021). This results in the issuance of "paper-only" certification certificates grounded in theory, yet devoid of the practical technical expertise demanded by the industry (International Labour Organization, 2020). As a result, graduates with visual impairments experience a cycle of economic marginalisation, poverty, and dependency, hence exacerbating the socio-economic burden on families and the state while reinforcing structural inequalities (Lamichhane, 2015). This study is crucial for systematically investigating, analysing, and documenting potential adjustments to the TEVET Curriculum that address skills development for students with visual impairments in TEVET institutions on the Copperbelt. The findings will furnish essential evidence to guide TEVETA and training institutions on optimal strategies for curriculum change that link training outcomes with the specialised support needed for students with visual impairment and the requirements of the local labour market.

The following objectives therefore, guided this study:

1. To explore stakeholders' conceptual understanding of TEVET curriculum adaptations designed for the skills development of students with visual impairment.

2. To identify the barriers hindering the implementation of a responsive TEVET curriculum for students with visual impairment.

3. To establish the practical strategies required to overcome barriers to inclusive curriculum implementation in TEVET institutions.

Theoretical Framework

This study is based on the Social Model of Disability, primarily formulated by Mike Oliver (1990), which reconceptualises disability as a social construct rather than a biological inevitability. The Social Model, in contrast to the conventional Medical Model that views impairment as a personal deficiency necessitating a remedy (Shakespeare, 2006), recognises systemic obstacles, negative attitudes, and institutional exclusion as the genuine debilitating elements. By employing this perspective, the study redirects the focus from the student's visual handicap to the systemic deficiencies of the TEVET framework. It asserts that a truly inclusive educational environment would completely neutralise disability, as the functional limitation of sight would no longer hinder participation (Oliver & Barnes, 2012; Mwange et al., 2023)

This model emphasises the environmental and physical obstacles that hinder learning for students with vision impairments within TEVET institutions. Physical infrastructures, such workshops tailored solely for sighted individuals with visual safety warnings or manual machinery lacking tactile signs, provide a debilitating environment (Terzi, 2004). This study employs the framework to assert that the exclusion of students is not an inherent outcome of blindness, but rather a direct effect of campus architecture and laboratory designs that favour a normative body while neglecting the imperative of universal accessibility.

Moreover, the framework encompasses curricular and pedagogical obstacles, characterising a "rigid curriculum" as a manifestation of institutional oppression. When TEVET programs predominantly depend on printed manuals, visual demonstrations, or sight-dependent evaluations without including Braille alternatives, screen-reading software, or tactile graphics, the curriculum itself becomes a debilitating factor (Haegele & Hodge, 2016). This study used the Social Model to analyse how vocational training frequently emphasises standardised instruction at the expense of adaptable learning pathways, thereby neglecting the varied functional requirements of students with visual impairments.

Ultimately, the Social Model highlights the attitudinal obstacles possessed by educators and administrators in the TEVET sector. Students with visual impairments are often dissuaded from engaging in technical trades due to "ableist" attitudes that perceive visual impairment as an intrinsic incapacity to operate equipment safely (Abberley, 1987). This study employs the framework to illustrate that these exclusionary practices are founded on social bias rather than actual technological infeasibility. By focusing on the Social Model, the research calls for a move toward Universal Design for Learning (UDL). This means that the school is responsible for making sure that all students may succeed by getting rid of the barriers it has always put in place.

REVIEW OF RELATED LITERATURE

The nature of TEVET Curriculum adaptations responsive to skills development for students with Visual Impairment in TEVET Institutions.

Worldwide, curriculum adaptation is acknowledged as the deliberate modification of teaching methods and resources to close the educational gap between sighted students and those with visual impairments (VI). International research underscores that although the fundamental content should align with that of sighted counterparts, the instructional approach must transition from "Natural Learning" (comprehending through holistic visual concepts) to "Mediated Learning" (gaining knowledge in discrete increments).

Global instructional tactics emphasise multi-sensory methods, using tactile graphics and detailed verbal representations of visual concepts (Koenig & Holbrook, 2000). Moreover, the incorporation of Assistive Technology (AT) such screen readers (JAWS) and refreshable Braille displays is regarded as the benchmark for facilitating autonomous access to digital material (Lewis & Doorlag, 2011).

The Expanded Core Curriculum (ECC) is a vital global standard that posits academic content should be enhanced with specialised skills such as Orientation and Mobility (O&M), compensating skills, and independent living skills (Hatlen, 1996). International evaluation processes have progressed to incorporate extra time, alternate formats (Braille/Audio), and performance-based evaluations to ensure that the measurement focuses on the student's knowledge rather than their impairment (McLinden & McCall, 2002). Notwithstanding these

comprehensive frameworks, the majority of international literature concentrates on general elementary and secondary education. There is a significant lack of research explicitly addressing the application of these adjustments in highly technical and safety-sensitive vocational workplaces (TEVET), where practical machinery operation and visual accuracy are conventionally emphasised.

In the African regional context, literature increasingly promotes the alteration of the physical environment to facilitate inclusion. This encompasses the regulation of light intensity, mitigation of glare, and optimisation of acoustics to support learners who depend significantly on aural information (Barraga & Erin, 2001). A regional movement is emerging to transition from "special schools" to inclusive vocational centres that employ economical tactile modifications and tangible items to develop technical concepts. The primary disparity regionally exists in the separation between implementation and resources. Although scholars recognise the necessity of technical support and environmental adjustments, there is a paucity of empirical evidence about the efficacy of these adaptations in African vocational colleges, which frequently encounter significant financial limitations and insufficient specialised teacher training.

The TEVET sector in Zambia is responsible for delivering inclusive skills development as mandated by the Technical Education, Vocational and Entrepreneurship Training Act No. 13 of 1998 and the National Policy on Education (Educating Our Future, 1996). Nonetheless, the practical implementation of curriculum adaptation for students with visual impairment (VI) remains predominantly unrecorded. Zambian legislation supports child-cantered learning; nevertheless, there is insufficient evidence on the implementation of instructional strategies, such as cooperative learning groups or strategic seating, in local workshops to optimise the residual vision of pupils (Muzata, 2017).

It is still unclear if Zambian TEVET institutions have effectively included contemporary Assistive Technology (AT), like screen magnification or digitally accessible formats, into their technical curricula. In Zambia, vocational training predominantly depends on printed manuals, posing a considerable obstacle for visually impaired students unless alternate forms are consistently made available (Kalabula, 1991; Ministry of Education, 2016). Kandimba, Mandyata, and Simalalo (2023) noted that the absence of accessible media frequently compels students into a "one-size-fits-all" educational setting, which undermines the objectives of the Persons with Disabilities Act No. 6 of 2012.

Moreover, the implementation of the Expanded Core Curriculum (ECC) and the utilisation of "audible meters" or tactile adaptations in Zambian science and technical laboratories remain unexamined. No documented evidence exists regarding the adaptation of evaluation procedures, specifically for practical skills that cannot be assessed through traditional paper-and-pencil methods, for visually impaired learners within the Zambian TEVET assessment framework overseen by the Technical Education, Vocational and Entrepreneurship Training Authority (TEVETA). In the absence of actual evidence, it is uncertain whether evaluations genuinely evaluate technical competence or simply the student's proficiency in manoeuvring an inaccessible examination format.

The primary deficiency in the Zambian setting is the absence of empirical research regarding the state of implementation. Theories of accessibility and safety, including the maintenance of predictable furniture arrangements and unobstructed walkways, are well-documented in international literature (Koenig & Holbrook, 2000); nevertheless, the degree to which these principles are implemented in Zambian TEVET facilities remains uncertain. This study aims to address this gap by examining the present condition of curricular and environmental modifications in these particular vocational contexts.

Challenges in Implementing a Responsive TEVET Curriculum for students with visual impairment

Globally, the principal obstacle in executing a responsive TEVET curriculum for students with Visual Impairment (VI) is the ongoing discrepancy between policy objectives and institutional implementation. The European Training Foundation (ETF, 2020) indicates that stakeholders, especially businesses, regard the program as excessively "bookish" and theoretical, lacking alignment with contemporary industry requirements. Moreover, the International Labour Organization (ILO, 2018) recognises a worldwide deficiency of qualified individuals proficient in Specialised Pedagogy and the integration of Assistive Technology (AT). This deficiency

of competence results in the belief that teaching approaches are inherently unsuitable for visually impaired learners.

International data from the ETF and ILO indicate that curriculum misalignment and workforce shortages contribute to adverse attitudes; however, there is insufficient study on how these worldwide trends explicitly emerge in Technical and Vocational Education as opposed to general academic education. The economic ramifications of not training specialised TEVET personnel, referred to as the "cost of inaction," remain insufficiently explored.

In the regional context of Eastern and Southern Africa, challenges predominantly focus on governance and resource equity. UNESCO-UNEVOC (2019) emphasises that stakeholders possess unfavourable perceptions owing to a persistent deficiency in infrastructure adhering to Universal Design principles. UNICEF (2016) cites significant governance issues regionally, including political involvement and corruption in the selection of students and the management of resources. These ethical shortcomings compromise the credibility of inclusive initiatives, fostering the idea that TEVET systems lack fairness and transparency.

While the UNICEF and UNESCO assessments indicate that governance and infrastructure present regional challenges, there exists a notable deficiency in research concerning the shift from identification to quantification. Literature acknowledges governance as an issue, although it does not measure the direct correlation between governance inadequacies and student attrition rates or the professional advancement of VI graduates in the region.

In Zambia, stakeholders encounter complex obstacles that extend beyond mere curriculum design into the domain of operational failure (Kandimba, Kalimaposo, Mandyata, Bwalya, Kabwe, & Kalunga, 2025). The Zambia Qualifications Authority (ZAQA, 2018) indicates that businesses recognise a skills mismatch, considering graduates to be deficient in practical competence. Nonetheless, this irrelevance frequently stems from a "policy-to-budget" failure; whereas the National Policy on Education (1996) and the MESVTEE (2013) strategic objectives underscore inclusivity, the funding allocated for Assistive Technology and customised workshop environments remains persistently inadequate.

Zambian research (Research Gate, 2018, 2020) emphasise that adverse impressions are linked to institutional integrity. Allegations of political interference in student admissions and the deficiency of qualified instructors at higher education institutions reflect the issues observed at the primary level. Nevertheless, the majority of Zambian study thus far has concentrated on the primary and secondary sectors, resulting in insufficient examination of the tertiary TEVET sector. The belief that the curriculum is overly theoretical frequently stems from instructors being compelled to teach in a "theoretical" manner due to the absence of practical tools and auditory instruments essential for hands-on education.

The significant research deficiency in Zambia is the necessity for evidence-based investment data. Contemporary literature simply indicates that resources are deficient or corruption is prevalent. There is an essential necessity for study that determines the extent to which material deficiencies, as opposed to mere content design, contribute to curriculum irrelevance. Moreover, a deficiency persists in quantifying the direct "student cost" of governance failures, which is essential for giving the concrete data required to urge the TEVET Authority to implement anti-corruption and inclusive policy measures.

Strategies for Implementing a Responsive TEVET Curriculum for Students with Visual Impairments

Globally, initiatives for overcoming curriculum barriers are based on the Universal Design for Learning (UDL) and the Expanded Core Curriculum (ECC). Global studies underscore that an adaptive curriculum should transcend conventional academics to systematically incorporate and evaluate "foundational life skills," including Orientation and Mobility (O&M) and Self-Advocacy (Hatlen, 1996; Spungin, 2002). Moreover, international best practices endorse Mandatory Multi-Sensory Methods, necessitating educators to transition from lecture-centric education to tactile and kinaesthetic learning utilising tangible objects, models, and specialised kits to facilitate skill transfer independent of visual input (Dixon, 2005).

Global plans prioritise Accessible Assessment Formats in their evaluation methods. The international objective is to guarantee that evaluations assess "genuine occupational competence" instead of the rapidity of visual processing. Although these tactics are extensively documented, worldwide literature frequently presupposes a foundation of ample resource availability, including reliable electricity and advanced software. A notable need exists in studies about the adaptation of high-tech techniques into "low-tech" or "frugal innovation" methodologies for vocational workshops in developing nations.

The emphasis is on establishing an accessible training environment, both physically and digitally. Research in Africa highlights the significance of Physical Accessibility in workshops, including the establishment of predictable paths and high-contrast marking, in accordance with O&M principles (UNESCO-UNEVOC, 2015). techniques in this region frequently prioritise Entrepreneurial Skills Focus, including self-employment techniques into the curriculum to address the elevated unemployment rates encountered by VI individuals in African labour markets (Mutua & Rono, 2017).

While regional literature delineates necessary actions, such as the provision of Braille guides and accessible signage, a persistent deficiency in Institutional Accountability remains. Local research underscores the necessity for instruction in Verbalisation and Descriptive Language for teachers, ensuring that all visual demonstrations in technical trades are communicated with clarity (Zambian Christian University Studies). Nonetheless, the execution of these initiatives remains disjointed.

While researchers (Research Gate, 2020; 2025) suggest the use of tactile kits and AT, there is no empirical evidence on the cost-effectiveness or the practical feasibility of these strategies within the current Zambian funding model. Research is needed to develop a localized strategy framework that moves beyond "stating the ideal" to providing a "step-by-step roadmap" for TEVET administrators.

METHODOLOGY

This research employed a qualitative approach grounded in a descriptive phenomenological design to explore the lived experiences of stakeholders regarding TEVET curriculum adaptations for students with VI in Zambia. Guided by the social model of disability, the study moved beyond quantitative metrics to examine the subjective meanings and systemic barriers within the vocational journey. The target population included students with VI, vocational lecturers, institutional administrators, and TEVETA officials, ensuring a comprehensive regulatory and instructional perspective. The study utilized a purposive sample of 30 participants to ensure data triangulation across the TEVET hierarchy. This included 12 students with visual impairment, 10 vocational lecturers, five administrators, and three TEVETA officials, a sample that Muzata, (2020) guides is adequate for qualitative studies. This diverse composition captured a holistic view of inclusive training, from national policy to practical workshop delivery. Data collection utilized semi-structured interview guides, focus group discussions (FGDs), and an observation checklist to physically verify workshop modifications and the use of assistive technology. The resulting data were processed using thematic analysis based on Braun and Clarke's (2006) six-step framework. This systematic process entailed transcribing interviews, developing initial codes for concepts such as resource scarcity and instructional mismatch, and refining potential themes to construct a coherent narrative regarding the nature, challenges, and strategies related to responsive curriculum implementation in Zambian TEVET institutions (Mwange et al., 2023; Mweene & Mwange, 2024).

Presentation of findings

The presentation of the findings is structured around three critical thematic pillars: the nature of TEVET curriculum adaptations, the systemic challenges hindering the implementation of a responsive curriculum, and the strategic interventions required to address these barriers for students with Visual Impairment (VI).

The nature of TEVET Curriculum adaptations responsive to skills development for students with Visual Impairment in TEVET Institutions

Stakeholders described the TEVET curriculum for skills development for students with Visual Impairment (VI) as a tailored curriculum because it successfully incorporated adaptations that directly met the unique needs of these learners. The study found this curriculum was responsive due to several crucial factors that align with the

principles of Universal Design for Learning (UDL), including user-friendly training environments, appropriate teaching methods, adequate teaching resources, appropriate assessment procedures, and the strategic management of time and content. These elements collectively demonstrated the curriculum's intentional design to facilitate equitable learning for students with visual impairment.

User-Friendly and Adapted Environment

Stakeholders described the TEVET curriculum as tailored primarily because lecturers actively modified the classroom environment to provide specific low-vision accommodations. These adjustments included implementing appropriate seating arrangements allowing short-sighted students to sit closer to the front and long-sighted students to sit at the back to optimize visual access to instructional materials. Furthermore, the environment was adapted by ensuring adequate lighting systems and well-ventilated classrooms, recognizing that optimal physical conditions minimize eyestrain and enhance concentration. One Principal participant from TEVET institution 1 affirmed this during interviews **<P1>** who confirmed that:

"The classroom environment is adjusted frequently. Lecturers modify classroom environment by providing appropriate classroom sitting arrangement; allow Short-sighted students to sit in front of the classroom and Long-sighted students to sit at the back of the classroom, provided adequate classroom lighting system and well-ventilated classrooms" (P1: 25.06.24).

One Special Education Lecturer participant from TEVET institution 1 also supported these findings during interviews **<SEL3 >** who asserted that:

"We also make the classroom for students more conducive by ensuring that there is adequate lighting system and ventilation in the classroom in order to promote learning for all learners" (SEL 3: 25.06.24).

Appropriate teaching methods

The curriculum was further described as tailored because lecturers utilized specialized teaching strategies such as cooperative learning, individualized instruction, pair work, storytelling, and role-play using audio learning. These methods allowed students to grasp vocational concepts through auditory and kinaesthetic means, moving beyond a reliance on sight. While lesson observations noted that some lecturers did not always fully modify these strategies to the specific capacity of every learner, the overall pedagogical approach was consciously adjusted to accommodate non-visual learning styles. These findings were evidenced in a response from one Special Education Lecturer participant from TEVET Institution 3 during interviews **<SEL8>,** who asserted that:

"Some of the curriculum adaptations I make in my class is making changes to instructional approaches based on capacity of learners. For example, I use a variety of adjusted teaching methods such as demonstration methods and question and answer to help the learners understand the concept" (12.06.24).

Contributing on the same, one Special Education Lecturer participant from TEVET institution 2 during interviews **<SEL6 >** who asserted that:

"In my class, I make changes to teaching strategies such as discussion, task analysis, cooperative learning, individualized learning, one to one learning, pair work, storytelling and role-play. Students grasp the concept easily and are able to access subject content" (SEL 6: 12.06.24).

Adding to the same discussion, one Special Education Lecturer participant from TEVET institution 2 during interviews **<SEL7 >**reported that:

"There is no single teaching technique, which fits all the students, so among the available teaching techniques I use in the classroom to make them learn include repetitions, coaching, hands-on and instructional prompts. When I do these adaptations, students are motivated to learn and perform much better" (SEL 7: 13.06.24).

During lesson observations, lecturers were seen using teaching strategies such as Cooperative learning; Individualized or one to one learning; Pair work; Story telling; and Role-play using Audio learning to teach the students. Although they did not adjust or modify these teaching strategies to meet the needs of the learners (Researcher, 25.06.24).

Adequate teaching resources

Participants cited the use of diverse and adapted teaching resources, such as multiple sensory aids and concrete objects, as a key factor in the curriculum's success. Lecturers practiced modifying resources by converting text to Braille or large print and creating "talking walls" to promote incidental learning outside of formal lesson time. However, a significant gap was identified during researcher observations, which revealed that all sampled TEVET institutions actually faced an inadequacy of standardized assistive devices like magnifiers or audio cassettes. Consequently, the "tailored" nature of the resources relied heavily on the initiative of lecturers who improvised and produced instructional materials from local resources to ensure that students with VI could still access the subject content. The above views were reflected in a response from one Special Education Lecturer participant from TEVET institution 3 during interviews **<SEL5 >** who asserted that:

"One of the instructional adaptations we make in my school is modifying the teaching and learning materials for students. Before using them in the lessons, we modify the available teaching and learning materials as well as real objects for easy understanding of content. In moments where there are inadequate instructional materials, we improvise and produce them using local materials" (SEL 5: 13.06.24).

One Special Education Lecturer participant from TEVET institution 1 during interviews **<SEL1 >** asserted that:

"Our role is produce modified teaching and learning materials for students. Therefore, we make sure that the teaching and learning materials are available, adapted and well simplified so that students have no difficulties when using them" (SEL 1:11.06.24).

Nevertheless, data collected from observation checklist to ascertain the availability of teaching resources in TEVET institutions, revealed that all the TEVET institutions had inadequate teaching and learning resources. It was observed that there were no teaching and learning aids and lecturers used their initiative to make these teaching aids, which they displayed as talking walls in the classroom to support delivery of the curriculum. Most of the teaching and learning materials used were not appropriate for students with VI. For example, the displayed as talking walls in the classroom to support delivery of the curriculum were not appropriate for students with VI who cannot benefit from visual presentation. The institutions had insufficient instructional materials such as the se of Braille, Large Print Magnified Devices and Audio Cassettes to provide students with VI an alternative learning mode (Researcher, 25.06.24).

Appropriate assessment procedures

The findings revealed that lecturers implemented crucial "access arrangements" in assessment procedures to ensure fairness and accurately gauge skill mastery rather than visual ability. These adaptations included the provision of learner-friendly tasks in Braille or tactile formats, the use of scribes and human readers, and the consistent provision of extra time (usually 25% of the normal examination time) to compensate for the slower processing speeds associated with assistive technology.

Agreeing with the findings above, one Special Education Specialist from the Ministry of Technology and Science during interviews **<MOTS 1>** said that:

"During assessment of students with VI in TEVET institutions, lecturers provide access arrangements such as extra time during the class tests and examination and provide rest or break time amidst examination time. Usually, learners are given 25 per cent of the normal examination time. This allows for compensation of any lost time" (MOTS 1: 18.06.24).

Adding to the same discussion, another Special Education Specialist from the Ministry of Technology and Science during interviews **<MOTS 2>** said that:

"We allow scribers to help students with writing difficulties during exam as well as Human Readers to read questions for students" (MOTS 2: 18.06.24).

Management of Learning Time

The management of learning time was identified as a critical adaptive strategy, with lecturers pacing instruction according to individual student abilities rather than rigid schedules. Strategies included allocating more overall learning time to cover content thoroughly, providing remedial work to address specific gaps in knowledge, and exercising patience to allow for latent responses to stimuli. In line with the above findings, one Special Education Lecturer participant from TEVET institution 3 during interviews **<SEL9 >** who asserted that:

"We increase the time for teaching and learning for students with VI because they take long to understand the concepts. We do this by pacing learning according to the students' abilities and setting student friendly tasks" (SEL9: 12.06.24).

The above views were reflected in a response from one Special Education Lecturer participant from TEVET institution 2 during interviews **<SEL4 >** who asserted that:

"As lecturers we allow enough time for the students to respond to visual stimuli, as there may be a latent response, we ensure student's visual preferences for colour, field of vision, and shape and size of objects. And avoid over stimulating the student through the introduction of too much clutter" (SEL 4: 11.06.24).

The above views were also reflected in a response from one Special Education Lecturer participant from TEVET institution 3 during interviews **<SEL8 >** who asserted that:

"Increased learning time and support by ensuring that learning was paced based on abilities, set learner friendly tasks, allocated more learning time, provided extra assessment time and remedial work. We also exercised patience and ensured that enough time was provided for students with VI who learnt at slow pace" (S el 8: 12.06.24).

In support of this view, one Special Education Lecturer participant from TEVET institution 2 during interviews **<SEL6 >** who asserted that:

"We are also forced to create special time for remedial work to support slow learners so that they move at the same pace with other learners" (SEL 6: 12.06.24).

Content adaptations

Stakeholders affirmed that the TEVET curriculum was tailored because lecturers actively modified the "what" of the instruction by simplifying learning content and reducing "bulkiness" to prevent cognitive overload. Through the use of task analysis, complex vocational skills were broken down into smaller, manageable steps that were easier for students to process and master. These findings were supported by one Special Education Lecturer participant from TEVET institution 2 during interviews **<SEL7 >** who asserted that:

"One example of content adaptations I make when am teaching students with VI include use of task analysis in teaching certain topics or skills. I do this by breaking down the content into small manageable tasks that are easily understood by learners with IDs without having difficulties" (SEL 7: 12.06.24).

In support of this, one Special Education Lecturer participant from TEVET institution 1 during interviews **<SEL2 >** who asserted that:

"some of the content adaptation I make in the class when am teaching are setting easy tasks, simplifying tasks on the topic and reducing content bulkiness when presenting a lesson" (SEL 2: 12.06.24).

Challenges Faced by Stakeholders in Implementing a Responsive TEVET Curriculum for Students with Visual Impairment

Inadequacy of Trained Personnel

The study identified a significant negative perception among participants regarding the implementation of the TEVET curriculum, primarily driven by a shortage of specialized personnel. Stakeholders argued that the curriculum's responsiveness is undermined by instructors who lack the requisite training to support students with VI effectively. The above views were reflected in a response from one Principal participant from TEVET institution 2 during interviews **<P2**> confirmed that:

"Sir, to the contrary, although the skills development TEVET Curriculum offered to students with VI is good, its negative side is inadequate trained personnel to train students, inappropriate teaching methods and strategies for differentiated teaching and learning" (P2: 10.06.24).

The above views were reflected in a response from one Special Education Lecturer participant from TEVET institution 1 during interviews **<SEL3 >** who asserted that:

"I have a slight different view point. I feel that skills development TEVET Curriculum offered to students with VI is not good because of inadequate teaching and learning material, unsuitable infrastructure and lack assistive technologies to accommodate students with VI" (SEL 3: 11.06.24).

Similar sentiments came from a female Student participant from TEVET institution 2 during Focus Group Discussion **<FGD 2 F>** who said that:

"To the contrary, I feel that that skills development TEVET Curriculum offered to students with VI is not good it because it does not address inadequate trained personnel to train students, inappropriate teaching methods and strategies, inadequate teaching and learning material, unsuitable infrastructure and lack assistive technologies to accommodate students with VI" (FGD 2 F: 12.06.24).

Unsuitable Infrastructure for Student Accommodation

A recurring theme in the findings was the inadequacy of physical infrastructure, which participants viewed as a major deterrent to an inclusive learning environment. The data suggests that TEVET facilities were not originally designed with the needs of students with disabilities in mind. The above views were reflected in a response from one Principal participant from TEVET institution 1 during interviews **<P1**> confirmed that:

"I feel that TEVET Curriculum when developers of TEVET Curriculum were developing the curriculum they did not have necessarily persons with disabilities, including students with VI, in mind. Therefore, TEVET Curriculum to skills development for students with VI in its current form or format does not consider persons with VI" (P1: 10.06.24).

Agreeing with the findings above, one Special Education Specialist from the Ministry of Technology and Science during interviews **<MOTS 2>** said that:

"I feel that these skills development TEVET Curriculum offered lack adequate physical and modern training facilities, such as furniture, classrooms, workshops and workshops, to cope with rapid technological change" (MOTS 2: 18.06.24).

The above views were reflected in a response from one Special Education Lecturer participant from TEVET institution 3 during interviews **<SEL8 >** who asserted that:

"In my honest opinion, the country's new direction focusing on skills development is commendable, but we need to take it a step further by including people with disabilities, including those with visual impairments, to ensure an inclusive approach." I believe an ideal curriculum should be inclusive, considering the needs of all stakeholders, including teachers, instructors, managers, and students, regardless of their abilities. To create a

responsive curriculum, we must involve representatives of people with disabilities, including visual, physical, and hearing impairments" (SEL 8: 12.06.24).

Agreeing with the findings above, one female Student participant from TEVET institution 1 during Focus Group Discussion **<FGD 1 M>** stated that:

"What I have observed is that students with VI learn at the same pace with the sighted students. I feel that the curriculum for the students with VI should be different from that of the sighted students. Each time students with VI have classes, they remain behind. This is evident from the feedback we give them from the tests and assignments we give them" (FGD 1 M: 12.06.24).

Inadequate Teaching and Learning Materials

The investigation revealed that a critical shortage of specialized instructional resources significantly hampers the curriculum's effectiveness. Participants expressed that the lack of adapted materials prevents lecturers from providing equitable instruction to both sighted and visually impaired students. The above views were reflected in a response from one Principal participant from TEVET institution 2 during interviews **<P2>** confirmed that:

"The TEVET Curriculum is good, the only challenge is lack of teaching and learning materials to carter for both so called normal and students with VI. Currently, lecturers are struggling when teaching students with VI as there are inadequate and learning materials" (P2: 10.06.24).

Agreeing with the findings above, one Special Education Specialist from the Ministry of Technology and Science during interviews **<MOTS 2>** said that:

"The greatest challenge in most TEVET institutions is inadequate teaching and learning materials especially for students with VI. Mostly, our institutions rely on internet" (MOTS 118.06.24).

In support of the findings above, one Lecturer participant during interviews **<SEL3>**, stated that:

"We have a challenge of inadequate teaching and learning materials for students with VI such as braille frames, papers and styluses. The use of assistive technology such as Screen Reader/Speech Synthesizer, Portable Electronic Braille Writer and Electronic Reading System enhances the learning of students with VI and enable them acquire necessary skills for survival. However, these materials are not available in most TEVET institutions" (SEL 3: 13.06.24).

Unsupportive and Inaccessible Learning Environment

The study found that the broader learning environment beyond just equipment was largely unsupportive. Findings indicated that classrooms were often overcrowded, lacked sufficient working space, and suffered from poor environmental controls. This negative view was reinforced by one female lecturer-participant **<SEL9>**, who observed that:

"Most of the classroom environments were not appropriate for students with VI because the classrooms had inadequate lighting and ventilation that promoted learning which affected efforts to adapt a curriculum" (SEL 9: 13/06/24).

In addition, during lesson observations, it was noted that the classroom layout in all the TEVET institutions were not appropriate for students with VI. For example, the sitting arrangement was not acceptable for students with VI. The classrooms were overcrowded with inadequate lighting and ventilation to promote learning. Further, the classrooms had few desks, which did not support learning of students with moderate VI. Generally, the learning environment were not appropriate for students with VI

Use of Inappropriate Teaching Methods and Incompetent Personnel

A major finding of this study is that the curriculum is perceived as "untailored" due to the application of inappropriate teaching methods by personnel who lack competency in special education. Many lecturers have

not been trained to adapt standardized content for non-visual learning. Contributing on the findings above, one Principal participant from TEVET institution 1 during interviews **<P1>** reported that:

"Limited skills among some lecturers in our TEVET institutions have affected the implementation of TEVET curriculum in classes for students with VI. Some lecturers are not trained in special education; therefore, they have limited teaching skills and are not able to adapt and implement TEVET curriculum for students with VI" (P1: 12.06.24).

Similarly, a male Student participant from TEVET institution 1 during Focus Group Discussion **<FGD 1 M>** reported that:

"Let me give an example, if a lecturer is not well prepared for TEVET curriculum adaptation, it increases pressure on such one when it came to adapting materials and strategies for students (FGD 1 M: 12.06.24).

Financial Constraints and Resource Scarcity

The findings suggest that the lack of funding is a root cause of the resource deficit in TEVET institutions. Stakeholders emphasized that curriculum adaptation cannot occur in a vacuum; it requires dedicated financial investment to procure and improvise aids. In support of these findings, one Special Education Lecturer participant from TEVET Institution 1 **<SEL2>** asserted during interviews that:

"There is lack of Technological Devices and inadequate teaching specialized materials such as of Braille to read and write, large print to allow students with low vision to maintain a constant reading at a comfortable distance without fatigue, magnifying devices to enhance the size of print on the page and to make the details in near and distant objects more visible and Audio Cassettes that provides the student with VI an alternative learning mode" (SEL 2: 12.06.24).

Similar sentiments came from a female Student participant from TEVET institution 2 during Focus Group Discussion **<FGD 2 F>** who said that:

"Curriculum adaptation cannot be done without resources and funding. For example, we need funding to purchase materials and improvise aids. We need learning materials such as adapted books that support the adaptation of the curriculum. However, there is no funding to do support such things in schools" (FGD 2 F: 12.06.24).

The above views were also reflected in a response from one Special Education Lecturer participant from TEVET institution 3 during interviews **<SEL7 >** who asserted that:

"There are insufficient instructional materials such as the se of Braille, Large Print Magnified Devices and Audio Cassettes to provide students with VI an alternative learning mode" (SEL 7: 12. 06. 24).

Time Limitations and Work Overload

The study unveiled that the rigid structure of the academic calendar and lecturer work overloads create a significant "time poverty" that prevents curriculum adaptation. There is a clear conflict between the need for "syllabus coverage" and the extra time required for VI instruction. In line with these findings, one Special Education Lecturer participant from TEVET Institution 2 **<SEL6>** revealed during interviews that:

"The time preparation for TEVET curriculum adaptation for students with VI in TEVET institutions was inadequate because we did not complete the syllabus coverage at college. We have a lot of work to do and the time perform all the activities and cover the syllabus is very limited" (SEL 6: 12.06.24).

Supporting the findings above, one Special Education Lecturer participant from TEVET institution 1 during interviews **<SEL3 >** lamented that:

"You know Sir; there is insufficient class preparation time for the lecturers in their effort to adapt a curriculum. More time is spent on learning how to adapt instructional approaches, simplifying learning content and modifying the learning environment" (SEL 3: 25.06.24).

In line with findings, one Special Education Lecturer participant from TEVET institution 3 during interviews **<SEL8 >** who asserted that:

"One of the challenges we face is limited time to prepare adapted lessons. Surely, we spend a lot of time to just get ready for teaching and less time to teaching and provide remedial work in my view" (SEL 8: 12.04.24).

Unmodified and Bulky Curriculum Content

Finally, the findings indicate that the content of the TEVET curriculum itself remains a barrier. Participants described the material as "bulky" and unadapted, lacking the task analysis necessary for students who process information non-visually.

Contributing to these findings, one Special Education Specialist from the Ministry of Technology and Science **<MOTS 2>** said during interviews that:

"I feel the TEVET Curriculum for skills development for students with VI is not a tailored Curriculum because the learning content for students with VI was still bulky and when lecturers are teaching the students do not task analyze the learning items. Further, the tasks given to students were not based on student's ability" (MOTS 2: 18.06.24).

This was affirmed by one Principal participant from TEVET institution 3 during interviews **<P3>** who confirmed that:

"Some lecturers still have poor demonstration skills and are insufficiently exposed to methodologies surrounding adapting curriculum for students with VI in TEVET institutions" (P3: 11.06.24).

Strategies to address the challenges faced by stakeholders in implementing a responsive TEVET Curriculum for students with Visual Impairment

Based on the study's findings regarding the implementation of a responsive TEVET curriculum for students with VI, several practical strategies emerged as essential for overcoming systemic barriers. These strategies transition the curriculum from a one-size-fits-all model to a tailored, inclusive framework.

Environmental and Spatial Optimization

The study highlights that high-impact, low-cost physical adjustments are the first line of defence against exclusion. Practical strategies include implementing flexible seating arrangements placing short-sighted students at the front and long-sighted students where their residual vision is most effective and ensuring classrooms have high-quality lighting and ventilation. These modifications reduce physical strain and create a "user-friendly" training environment that facilitates concentration. A primary participant from TEVET institution 1 expressed the aforementioned viewpoints during interviews.

"The classroom environment is adjusted frequently. Lecturers modify classroom environment by providing appropriate classroom sitting arrangement; allow Short-sighted students to sit in front of the classroom and Long-sighted students to sit at the back of the classroom..." (P1: 25.06.24).

A Lecturer participant **<SEL 3>** expressed the aforementioned viewpoints during interviews that:

"We also make the classroom for students more conducive by ensuring that there is adequate lighting system and ventilation in the classroom in order to promote learning for all learners" (SEL 3: 25.06.24).

Specialized Pedagogical Shifts

To overcome the barrier of visual-heavy instruction, lecturers must employ a variety of non-visual teaching methods. Findings suggest the use of task analysis, where complex vocational skills are broken down into smaller, manageable steps. Furthermore, incorporating storytelling, role-play, and peer-to-peer cooperative learning allows students with VI to acquire vocational competencies through auditory and kinaesthetic channels rather than relying on sight. These findings were supported by the views of the following Lecturer participants:

"In my class, I make changes to teaching strategies such as discussion, task analysis, cooperative learning, individualized learning, one to one learning, pair work, storytelling and role-play. Students grasp the concept easily and are able to access subject content" (SEL 6: 12.06.24).

"Some of the curriculum adaptations I make in my class is making changes to instructional approaches based on capacity of learners. For example, I use a variety of adjusted teaching methods such as demonstration methods and question and answer to help the learners understand the concept" (SEL 8: 12.06.24).

Strategic Resource Mobilization and Improvisation

In the absence of expensive assistive technology, the study found that local improvisation is a vital practical strategy. This includes the creation of "talking walls" for incidental learning and the use of real, concrete objects (tactile models) instead of abstract visual diagrams. Proactive conversion of standard text into Braille or large print before lessons ensures that students with VI can follow the curriculum in real-time alongside their sighted peers. In agreement with the findings above, the two lecturer participants stated that:

"One of the instructional adaptations we make in my school is modifying the teaching and learning materials for students... In moments where there are inadequate instructional materials, we improvise and produce them using local materials" (SEL 5: 13.06.24).

"Our role is produce modified teaching and learning materials for students. Therefore, we make sure that the teaching and learning materials are available, adapted and well simplified so that students have no difficulties when using them" (SEL 1: 11.06.24).

Implementation of Access Arrangements in Assessment

To ensure that assessments measure actual skill mastery rather than the degree of disability, institutions must implement "access arrangements." Practical steps include providing an additional 25% of the normal examination time to account for slower tactile processing, as well as the provision of Scribes and Human Readers. These adjustments ensure that the evaluation process is equitable and yields a fair representation of the student's vocational ability. Two Special Education Specialist from the Ministry of Technology and Science **<MOTS>** affirmed the previously indicated findings during interviews that:

"During assessment of students with VI in TEVET institutions, lecturers provide access arrangements such as extra time during the class tests and examination and provide rest or break time amidst examination time. Usually, learners are given 25 per cent of the normal examination time" (MOTS 1: 18.06.24).

"We allow scribers to help students with writing difficulties during exam as well as Human Readers to read questions for students" (MOTS 2: 18.06.24).

Temporal Flexibility and Remedial Support

Managing learning time is critical to overcoming the barrier of rigid academic schedules. Strategies include pacing instruction according to individual student abilities and providing dedicated remedial time. This extra support allows students with VI to bridge gaps in knowledge without the pressure of a latent response time, ensuring they master foundational concepts before moving on to advanced vocational tasks. Two special education lecturer participants directly expressed critical opinions during an interview, stating that:

"We increase the time for teaching and learning for students with VI because they take long to understand the concepts. We do this by pacing learning according to the students' abilities and setting student friendly tasks" (SEL 9: 12.06.24).

"We are also forced to create special time for remedial work to support slow learners so that they move at the same pace with other learners" (SEL 6: 12.06.24).

Content Simplification and Structural Modification

The findings suggest that reducing "content bulkiness" is essential for accessibility. By simplifying instructional materials and focusing on core vocational competencies through task-analyzed activities, lecturers make the curriculum more manageable. This structural modification ensures that the volume of information does not become an insurmountable barrier to learners who use non-visual modalities. These findings were articulated by two education lecturer participant during interviews who revealed that:

"One example of content adaptations I make when am teaching students with VI include use of task analysis in teaching certain topics or skills. I do this by breaking down the content into small manageable tasks that are easily understood..." (SEL 7: 12.06.24).

"...some of the content adaptation I make in the class when am teaching are setting easy tasks, simplifying tasks on the topic and reducing content bulkiness when presenting a lesson" (SEL 2: 12.06.24).

DISCUSSION OF FINDINGS

The discussion of the findings is structured around three critical thematic pillars: the nature of TEVET curriculum adaptations, the systemic challenges hindering the implementation of a responsive curriculum, and the strategic interventions required to address these barriers for students with Visual Impairment (VI).

In discussing the nature of TEVET curriculum adaptations, it is clear that the approach for students with VI is defined by highly localized and active modifications across environment, pedagogy, and assessment. By tailoring classroom lighting and seating and embracing multi-modal instruction such as storytelling and role-play stakeholders are effectively moving toward the framework of Universal Design for Learning (UDL). This shift aligns with the foundational work of Rose and Meyer (2002) on UDL and Mather's (2022) concept of reducing the "disability effect" through environmental adjustment. Mather's research and Kandimba *et al*. (2023) demonstrates that proactive changes, such as the strategic manipulation of lumens, acoustics, and flexible furniture, can effectively neutralize a physical space. These findings provide a vital theoretical basis for the modification of TEVET workshops, suggesting that when a lecturer optimizes lighting or seating, they are not merely granting a "favour" but are systematically dismantling the environmental stressors that produce the functional experience of disability. This is further bolstered by Thompson et al. (2023), who advocate for equitable assessment through provisions like 25% extra time to accommodate the specific cognitive demands of non-visual processing. Viewed through the lens of the Social Model, these adaptations represent a critical transition from "fixing" the student to removing the systemic and architectural barriers inherent in the institution. Consequently, the policy implications highlight a pressing need for a National Examination Protocol and standardized Infrastructure Accessibility Guidelines, while practice should prioritize Competency-Based Modular Structures to better accommodate diverse learning paces (Mwange et al., 2023).

Regarding the challenges of implementing a responsive TEVET curriculum, it becomes evident that despite well-intentioned aspirations, a profound "Disability Gap" persists because the system remains fundamentally anchored in sighted-centric structures. These systemic hurdles, which include untrained personnel, inaccessible infrastructure, and a dearth of assistive technology like Braille and screen readers, mirror the findings of Hadjikakou and Mnasonos (2023) regarding teacher efficacy. Their research suggests that when lecturers feel ill-equipped to translate visual content for students with sensory impairments, they often undergo a "pedagogical withdrawal" that effectively shuts these students out of core learning experiences. This implies that the "Disability Gap" is as much a psychological and skill-based barrier as it is a physical one, where an instructor's lack of confidence essentially becomes a secondary handicap for the learner. Furthermore, the material reality

of this issue is captured by Lynch et al. (2021) through the lens of resource poverty, which describes how a lack of specialized tools directly sabotages the transition from education to employment. While lecturer improvisation and "talking walls" are commendable, they are ultimately insufficient; without standardized assistive technology, students fail to develop the "industry-ready" competencies required to prove their professional worth in a competitive labour market. Viewed through the Social Model, these barriers represent "structural exclusion" and a systemic denial of the necessary tools of the trade. Consequently, policy must evolve to mandate Inclusive Pedagogy Credits for all instructors and establish a Centralized Assistive Technology Procurement Scheme, while institutional practice should prioritize Environmental Control Standards specifically for lighting and acoustics to ensure the learning environment no longer disables the student (Mwange et al., 2023).

Lastly, the strategies for addressing implementation issues indicate a transition to a rights-based approach that emphasises systemic reform rather than focusing on the perceived shortcomings of the learner. This method coincides with Mather's (2022) notion of spatial neutralisation by emphasising important interventions such as space optimisation, frugal innovation through the implementation of talking walls, and temporal flexibility. Mather asserts that a classroom is inherently biased; it either facilitates or hinders a student, and his research demonstrates that slight modifications in lighting (lumens), acoustics, and furniture arrangement can significantly mitigate the "disability effect" of a physical environment. In a TEVET setting, this indicates that although a student's handicap persists, the environment ceases to function as a barrier. This viewpoint is further supported by Thompson et al. (2023), whose research on the cognitive and temporal requirements of non-visual media processing demonstrates that pupils employing Braille or screen readers necessitate considerably more "tactile-cognitive time" than their sighted counterparts. They convincingly assert that conventional timed examinations frequently evaluate the rapidity of sensory retrieval rather than genuine occupational aptitude; hence, provisions such as 25% additional time are not "benefits" but necessary adjustments that facilitate fair evaluation. Under the Social Model, inflexible schedules and extensive content are acknowledged as environmental structures that require modification to embrace human variation. Thus, the policy implications advocate for the promotion of "Inclusion Innovation" grants and the engagement of experts in curriculum optimisation, while practice should focus on peer mentorship and the implementation of differentiated lesson plan templates to deconstruct complex tasks into manageable, tangible steps.

CONCLUSION AND RECOMMENDATION

This research highlights a notable conflict between the inclusive goals of the Zambian TEVET sector and the actual circumstances faced by students with visual impairments. It is clear that although instructors exhibit professional commitment through innovative "frugal innovations" and pedagogical adjustments, these initiatives function within a framework primarily intended for the sighted. This study, utilising the Social Model of Disability, indicates that the principal obstacles to skills development are not the visual impairments per se, but the "environmental handicaps" resulting from inaccessible workshops, cumbersome curricula, and the lack of standardised assistive devices. The transition to Universal Design for Learning (UDL) principles is now disjointed; although "Multiple Means of Representation" are developing through narrative and tactile modelling, they are devoid of the systemic support required for sustainability. The "Disability Gap" in TEVET institutions can only be closed when the responsibility for adaptation transitions from individual lecturers and students to the institutional and national policy framework. Based on the study findings, the following recommendations are proposed to enhance the responsiveness of the TEVET curriculum for students with VI.

1. The government must transition from a paradigm of individual lecturer improvisation to a structured, policy-driven framework. This entails the creation of a National TEVET Inclusive Resource Fund to acquire standardised assistive technologies and the formalisation of a National Examination Protocol that requires access arrangements such as additional time and scribes. By implementing a distinct funding model, the state can guarantee that the elevated expenses linked to inclusive vocational training are addressed through institutional support rather than philanthropy.

2. At the level of practice, TEVET institutions must focus on strengthening pedagogical capacity by integrating mandatory inclusive pedagogy credits into all TVET teacher-training programs. This shift ensures that lecturers are equipped with the skills to apply UDL through task-analyzed instructional guides that "de-bulk"

complex vocational content into manageable, non-visual steps. Implementing peer-to-peer mentorship programs would further allow specialized educators to guide technical instructors in translating trade-specific skills, such as carpentry or catering, into accessible formats.

3. The physical and temporal learning environment must be standardised for accessibility via compulsory infrastructure assessments and the implementation of adaptable academic frameworks. TEVET buildings must be upgraded to comply with environmental control standards for lighting and acoustics, eliminating the physical obstacles that presently hinder students.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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