



STAKEHOLDERS' PERCEPTIONS ON THE SKILLS DEVELOPMENT TEVET CURRICULUM FOR STUDENTS WITH VISUAL IMPAIRMENT IN TEVET INSTITUTIONS IN ZAMBIA

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Abstract:

This study explored stakeholders' viewpoints regarding the Technical Education, Vocational and Entrepreneurship Training (TEVET) curriculum for students with Visual Impairment (VI) in Zambia, namely in the Copperbelt region. The research employed a qualitative methodology, utilising the Social Model of Disability and the Universal Design for Learning (UDL) framework to examine the perspectives of instructors, administrators, and students. Research indicates that the current curriculum is predominantly vision-centric, necessitating that students depend on "borrowed sight" due to a lack of assistive technology and insufficient instructor proficiency in specialised pedagogical techniques like Braille and tactile instruction. While stakeholders generally have optimistic views of the potential for VI self-reliance, these sentiments are often undermined by widespread scepticism about institutional openness and resource allocation. The study distinguishes between "tailored" adaptations that facilitate independent mastering and untailored procedures that lead to educational marginalisation. The research indicates that authentic inclusion requires a shift from reactive modifications to proactive, accountability-focused policies and diverse instructional strategies. The report proposes four strategic initiatives to address the gap between policy and practice in the TEVET sector: curriculum standardisation, specialised capacity training, targeted resource allocation, and pedagogical reform.

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1. Introduction

The global initiative for inclusive vocational training is founded on the intersection of fundamental human rights and intentional economic progress. The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) mandates that signatory countries must implement an inclusive education system that includes vocational training with appropriate accommodations. The International Labour Organisation (ILO) designates Technical Education, Vocational and Entrepreneurship Training (TEVET) as crucial for achieving Sustainable Development Goal (SDG) 8, which promotes decent work and economic prosperity for all.

Despite these international frameworks, a pervasive systemic failure persists. Globally, individuals with disabilities experience significantly lower employment rates, often due to an interrupted school-to-work transition caused by inaccessible curricula (ILO, 2021). Zambia affirms its dedication to inclusion by ratifying the UNCRPD and enacting it via the Persons with Disabilities Act No. 6 of 2012. The Zambian government acknowledges TEVET as a crucial catalyst for poverty reduction and economic diversification. The integration of students with VI is both a social obligation and a strategic national necessity.

However, a considerable gap exists between legislative intent and institutional actuality. Research conducted by Simui (2018) and Zangi & Penda (2021) demonstrates that Zambian TEVET institutions often employ partial inclusion. In these situations, the curriculum is primarily vision-driven and unchanged. This educational stagnation is intensified by skill deficiencies, including inadequate instructor proficiency in Braille and curriculum adaptation; resource limitations, such as insufficient access to assistive technologies; and systemic inertia, marked by the failure to transition from general enrolment to meaningful participation.

While the current literature comprehensively examines challenges in primary and secondary education, there is a notable deficiency of data regarding the tertiary TEVET level. The effectiveness of inclusive vocational training is mostly contingent upon the viewpoints and skills of the stakeholders engaged in its implementation, such as educators, administrators, and policy enforcers. An exhaustive examination of stakeholders' perspectives regarding the existing skills development curriculum is important, as the particular deficiencies within the TEVET framework remain unclear. This study is essential to align Zambia's inclusive policy goals with the requisite, evidence-based adjustments to enable the transition of graduates with VI from the classroom to a competitive job market.

2. Problem Statement

Notwithstanding the strong legislative foundation provided by the Persons with Disabilities Act of 2012 and the UNCRPD (2008), a considerable implementation gap persists in Zambia's TEVET sector. Despite policy mandates for inclusiveness, the reality for children with visual impairments is a curriculum that remains mainly vision-centric, unmodified, and misaligned with their particular educational needs (Zangi & Penda, 2021). The crux of this matter lies in a substantial institutional inability to adapt. Recent vocational outcomes indicate that graduates with visual impairments are frequently placed in non-specialised or menial roles or remain unemployed due to inadequate skill acquisition (McDonnall & Tatch, 2021). This failure arises not only from inadequate resources but is profoundly rooted in the unclear viewpoints and limited capacities of key stakeholders, including educators and administrators, responsible for curriculum implementation.

Currently, there is a significant lack of evidence regarding the perceptions and interpretations of different stakeholders on the TEVET curriculum requirements for students with visual impairments. Without understanding these internal viewpoints, it is impossible to determine why particular abilities, such as Braille and assistive technology integration, are deficient in the classroom. If this study is not conducted, the subsequent impacts will persist. Students with visual impairments will persist in graduating without competitive vocational skills, hence worsening the employment discrepancy (ILO, 2021). As a result, politicians will persist in their inability to formulate evidence-based reforms, thus leaving infrastructural and pedagogical challenges unresolved. Thirdly, policy paralysis would occur, as the clear gap between Zambia's inclusive objectives and institutional practices would continue, rendering the TEVET system ineffective for social and economic integration. This study sought to thoroughly examine and document stakeholders' perceptions of the TEVET skills development program. This study resolves the knowledge deficit by supplying essential evidence to advocate for customised curriculum adaptations, so ensuring that the Zambian TEVET system fulfils its responsibility to provide equitable and effective vocational training for students with visual impairments.

The subsequent objectives guided the research:

- 1) To explore stakeholders' understanding of the attributes of the skills development TEVET Curriculum offered to students with visual impairments at TEVET institutions.
- 2) To establish stakeholders' viewpoints regarding the skills development TEVET Curriculum offered to students with visual impairments in TEVET institutions on the Copperbelt.
- 3) To recommend relevant TEVET Curriculum adaptations to improve skills development for students with visual impairments in TEVET institutions across the Copperbelt.

3. Theoretical Framework

The research was guided by two frameworks: The Social Model of Disability, proposed by Oliver (1990), and the Universal Design for Learning (UDL) paradigm, developed by the Centre for Applied Special Technology (CAST) (2011). The two frameworks cooperate to further the study's aims. The Social Model asserts that disability is a result of cultural and institutional barriers rather than personal shortcomings. The UDL framework concurrently provides a practical pedagogical roadmap for removing barriers by ensuring that the curriculum is flexible and accessible to all learners from the planning stage.

The Social Model of Disability is particularly appropriate for this study since it shifts the emphasis from the student's visual impairment to the institutional, environmental, and pedagogical barriers within the TEVET sector. This approach allows the research to identify the vision-centric curriculum, the restricted access to assistive technology, and conventional lecture-based teaching methods as the primary obstacles, rather than viewing a student's inadequate progress as a personal medical deficiency. This perspective supports your assertion that students face restricted inclusion not because of their visual impairments but owing to the educational environment's failure to transition from a standardised model to one that is inherently accessible. Consequently, the Social Model provides the necessary theoretical basis to claim that the solution lies in revising the curriculum through Universal Design for Learning (UDL) and institutional reform, rather than merely accommodating the student.

The research indicated that the Universal Design for Learning (UDL) framework, established by Rose and Meyer in the 1980s, served as the theoretical foundation for the study and facilitated a shift from passive accommodation to proactive, inclusive curriculum development. It was noted that, unlike traditional models that modified content retrospectively, UDL required the preliminary design of learning environments to address variability.

Within the context of TEVET, the curriculum was identified as the source of systemic rigidity rather than attributing student failure to their visual impairment. The study contended that by prioritising three essential principles: Representation, Action and Expression, and Engagement, Universal Design for Learning (UDL) provides a framework for transforming vocational training into an equitable system that fosters independent competence and economic self-sufficiency. The foundational concept, Multiple Means of Representation, seeks to alleviate the primary challenge of vision-centric technical knowledge by integrating non-visual modalities such as Braille, tactile graphics, and audio descriptions. This enhanced the accessibility of complex concepts, such as circuit diagrams, through multi-sensory tools. The second concept, Multiple Means of Action and Expression, is defined as providing various methods for students to exhibit proficiency, utilising alternative assessments such as oral examinations and adapted assistive technology like auditory measurement tools to support authentic skill demonstration. The study found that multiple means of engagement alleviated the

motivational barriers faced by students with visual impairments by matching the curriculum with their career goals and fostering self-determination through choice and autonomy. The study rigorously assessed the TEVET curriculum against established criteria, pinpointing instructional rigidities and suggesting modifications to offer students with visual impairments genuine opportunities to obtain essential vocational skills, thus facilitate substantial national development.

4. Review of Related Literature

The literature review examined the nature of the skills development TEVET Curriculum for students with visual impairments in TEVET institutions, stakeholders' perceptions of this curriculum, and the adaptations implemented to enhance skills development for these students.

4.1 The Nature of the Skills Development Curriculum Offered to Students with Visual Impairments at TEVET Institutions

Universal Design for Learning (UDL) is increasingly significant in the acquisition of new abilities by children with visual impairments globally. UDL advocates for curricula that are adaptable from inception rather than modified thereafter. The International Labour Organisation (ILO, 2021) asserts that an effective vocational curriculum must transition from conventional, visually orientated instruction to multi-sensory approaches incorporating auditory and tactile elements to ensure equitable learning opportunities for all individuals. In numerous industrialised nations, the Expanded Core Curriculum (ECC) supplements vocational training by imparting compensating skills, orientation, mobility, and assistive technology to facilitate students' transition from the classroom to the unique demands of the workplace (Sapp & Hatlen, 2010).

The integration of Assistive Technology (AT) has revolutionised international vocational training, with research indicating that when curricula mandate the use of screen readers, Braille embossers, and auditory devices like digital callipers, students with visual impairments can achieve competencies comparable to those of their sighted peers (McDonnall & Tatch, 2021). This alteration clarifies that impairment is frequently a result of an inaccessible environment (Kandimba, Kalimaposo, Mandyata, Bwalya, Kabwe & Kalunga, 2025). Nonetheless, a disparity in implementation persists, as vocational educators frequently lack the knowledge to modify practical evaluations, resulting in a curriculum that is inclusive in principle but not in practice (Sightsavers, 2018).

The Competency-Based Education and Training (CBET) framework legally directs the TEVET curriculum in Zambia; yet, it remains mostly aspirational and has undergone minimal alteration (TEVETA, 2022). "Partial inclusion" refers to a training scenario in which students attend workshops but lack the necessary materials for complete participation (Zangi & Penda, 2021). The situation is exacerbated by the lack of specialised training among many teachers, leading them to employ conventional chalk-

and-talk methods that are ineffective for instructing complex technical topics, such as circuit diagrams (Simui, 2018).

The scarcity of resources in Zambia necessitates that students with visual impairments depend on sighted classmates for visual tasks due to the absence of auditory assessment tools. This diminishes the capacity for independent learning and complicates employment opportunities for graduates (Ndhlovu, 2005; Mwaala, 2016). The Persons with Disabilities Act No. 6 of 2012 advocates for inclusion; yet, the lack of standardised criteria for tactile graphics and audio-described guides leads to inconsistent quality among institutions (Johnson & Muzata, 2019). Ultimately, predominantly written assessments, without alternative formats, constitute the final obstacle preventing students who have acquired skills from formally demonstrating their competence (Chimese, 2016).

4.2 Stakeholders' Views on the TEVET Curriculum for Students with Visual Impairments in TEVET Institutions on the Copperbelt that Helps Them Enhance Their Skills

Stakeholders worldwide view the TEVET curriculum for children with visual impairments from two perspectives, balancing a consensus on its transformative potential with concerns about its practical use. According to UNESCO (2017) and researchers such as Mutua and Rono (2017), vocational training is an effective means to achieve financial independence, alleviate poverty, and attain self-sufficiency. Nonetheless, a significant research gap remains in moving beyond these positive perceptions to quantifiable data regarding employment rates and the long-term viability of these benefits. Research in Turkey (Islek, 2016) and Kenya reveals a disconnect between the prescriptive national curriculum and the specific needs of visually impaired students, underscoring the pressing need for flexible programmes like the Expanded Core Curriculum (ECC) to teach essential independent living skills.

In Zambia, research indicates a comparable dual reality wherein systemic institutional deficiencies can obstruct ambitious aspirations for socio-economic advancement. Stakeholders regard the curriculum as a crucial tool for fostering financial independence and decreasing street begging. Successful graduates affirm that TEVET provides a direct route to employment (Zambian Christian University Studies, 2015). TEVETA data from 2016 to 2024 reveal that the curriculum does teach entrepreneurial skills. The result means that students with VI can learn how to start their businesses. Even if these are good points of view, more research is needed on how institutional issues, including not having enough specialist staff or skills mismatches, could break this promise of work and lead to underemployment. Conversely, unfavourable perceptions of the TEVET curriculum originate from persistent issues within the system and its operations.

The European Training Foundation (2020) and the ILO (2018) indicate that stakeholders frequently express dissatisfaction with curricula, deeming them excessively academic or "bookish", rendering them incompatible with contemporary business

requirements. In Zambia, this irrelevance is worsened by a lack of qualified workers who know how to use assistive technology (AT) and specialised pedagogy (Research Gate, 2020). These problems with the institutions make it almost impossible to learn, which has led to a common impression that the quality of education and training facilities is quite low. Finally, big problems with fairness and governance make stakeholders even less sure about the Zambian TEVET system.

UNICEF (2016) and the Zambia Qualifications Authority (ZAQA, 2018) assert that elements such as political interference, corruption in student admissions, and insufficient practical applicability undermine the credibility of the education system. Literature corroborates these governance challenges; yet, a critical study gap persists in estimating the exact costs linked to these shortcomings concerning student attrition and career progression. It is crucial to ascertain the precise impact of resource deficiencies and governance issues on the Zambian TEVET sector to facilitate targeted, evidence-based policy implementation and budget distribution.

4.3 The TEVET Curriculum Designed to Help Students with Visual Impairments Learn New Skills at TEVET Schools

The deliberate improvement of the curriculum, teaching techniques, tests, and learning environment is necessary to enhance TEVET for students with visual impairments. Evaluations of Zambian policies and global best practices show that these specific changes are necessary to ensure vocational independence. The Extended Core Curriculum (ECC) is a very important piece of specialised information that is necessary for vocational independence. To incorporate it, the curriculum must be updated in a big way. This shift is not just about schooling; it also includes crucial skills for employment and life. Skills that are holistically integrated emphasise that TEVET programs must officially incorporate and assess competencies such as orientation and mobility (O&M) for secure workplace navigation, independent living skills (including culinary and financial management), and self-advocacy training (Hatlen, 1996; Spungin, 2002). People do not think of these lessons as extras; they think of them as basic skills that are necessary for doing well at work. Also, for curriculum customisation to work, programmes need to be flexible and modular so that trainers can tailor trade-specific education to each student's level of visual loss and learning style, instead of employing rigid, standardised content (UNESCO-UNEVOC, 2015).

Zambia's economy also needs to focus on entrepreneurial skills. This entails making sure that self-employment methods work for individuals with VI (Mutua & Rono, 2017) and that trades don't become obsolete by examining them often (ZAQA Policy Framework). Being responsive means changing how teachers teach so that students can gain skills and talents without having to watch someone else do it (Kandimba, Mandiyata, and Simalalo, 2023). This means that teachers should cease utilising simple lectures and visual aids and start adopting active, hands-on, and interactive learning instead. This adaptation involves enhancing tactile learning through the use of physical objects, models, and specialised kits; auditory learning through

detailed audio descriptions of all processes; and kinaesthetic learning through organised physical practice in the workshop (Dixon, 2005; Research Gate, 2018).

For effective assistive technology (AT) integration, educators must adapt their instructional methods to enable students to utilise trade-specific AT, such as auditory measurement instruments, specialised tactile graphics software, or screen readers and magnifiers in computer-aided design (CAD) environments. It is also important to update the curriculum so that students know how to use these technologies (CAST, 2018). Lastly, students need to learn how to use descriptive language and talk about things. This means that teachers need to always use descriptive language and express out loud all the visual information, gestures, and procedures followed during demonstrations.

Responsive assessment changes make sure that the test genuinely measures a person's work skills and not just how well they can see or perform things quickly in everyday situations. This makes the test fairer. Accessible Assessment Formats are a big development that means we need to identify other ways to do tests without writing them down, such as oral exams, digital submissions, or using a scribe or computer. For practical skills, evaluation must incorporate tactile charts or raised-line drawings (Rose & Meyer, 2002; ZAQA Policy Framework). Process-orientated evaluation shifts the emphasis from rapid execution to the quality of skill application and the ultimate outcome. This method gives people enough time to do tasks that require longer because they have to utilise AT or process touch (World Health Organisation - WHO; Research Gate, 2020). In the end, you have to follow competency-based measures very rigorously. Graduates with visual impairment must fulfil the same industry standards as their sighted counterparts, albeit employing alternative tools and approaches. To enhance the usability and accessibility of the training environment, adaptations to the learning environment are necessary (Kandimba, Kalimaposo, Mandyata, Bwalya, Kabwe, & Kalunga, 2025). To enhance the physical accessibility of workshops and classrooms, it is essential to provide clear, predictable pathways, ensure tools are consistently located, use high-contrast labels, and provide easily legible signage. These adaptations adhere to O&M guidelines to enhance safety and facilitate independent mobility (UNESCO-UNEVOC, 2015; Research Gate, 2020).

Another big shift is resource provision, which implies that all instructional materials, such as manuals, handouts, and textbooks, must be ready in different versions (Braille, large print, audio, and electronic text) before the course starts. This aspect indicates that educators are not obligated to depend on resources that are not customised to their requirements (MESVTEE, 2013). Ultimately, TEVET institutions must establish dedicated resource centres staffed with experienced assistive technology and support personnel for visual impairments. It is essential to consolidate expertise and ensure that all students have equitable access to specialised equipment (Research Gate, 2025).

5. Methodology

This study used a qualitative research design, employing a phenomenological approach to clarify the lived experiences and subjective views of the participants. The qualitative method was selected for its ability to provide a comprehensive, contextual analysis of stakeholders' perceptions regarding the success and inclusivity of the TEVET program. The study sought to clarify the details of institutional barriers that quantitative statistics could overlook by focussing on the rationale and methods of curriculum delivery.

The research was conducted at three selected TEVET institutions on the Copperbelt, recognised for the enrolment of students with particular educational needs. The target population included TEVET teachers, school administrators, and students with visual impairments. Purposive sampling was used to select 18 individuals (6 teachers, 3 administrators, and 9 students with visual impairments) to ensure that the data obtained originated from individuals directly engaged with the curriculum and the associated challenges during its implementation.

The methods for data collection comprised semi-structured interviews and observations. Semi-structured interviews provided the flexibility to examine stakeholder viewpoints on curriculum responsiveness, while observations in workshops and classrooms allowed the researcher to assess the actual implementation (or absence) of assistive devices and modified instructional materials. This incorporation of data sources ensured the findings' trustworthiness.

The data was analysed thematically. The researcher wrote down everything that was said in the taped interviews and then coded it to uncover patterns that were related to the study's goals. After that, the codes were put into larger groups that match the UDL concepts of representation, action, expression, and engagement. This enabled the researcher to assess the curriculum's alignment with worldwide standards for inclusive vocational training.

6. Presentation of Findings

The presentation of the findings focused on the nature of the skills development TEVET Curriculum provided to students with visual impairments in TEVET institutions, stakeholders' perceptions of this curriculum, and the adaptations made to the TEVET Curriculum to accommodate skills development for students with visual impairments in TEVET institutions on the Copperbelt.

6.1 The Nature of Skills Development within the TEVET Curriculum Provided to Students with Visual Impairments in TEVET Institutions

6.1.1 The Curriculum's Vision-Centric and Unaltered Nature

The analysis revealed that while the curriculum is officially categorised under the Competency-Based Education and Training (CBET) framework, its actual execution is primarily visual. The lack of inherent flexibility confines students with visual

impairments to a state of restricted inclusion, where they occupy physical space in workshops but cannot interact with the learning material. In alignment with the above-described findings, a female student participant from TEVET Institution 1 stated during the focus group discussion that:

"Despite sharing the same workshop as sighted students, the content is not tailored for our needs. The manuals are solely in standard font, and the drawings on the board comprise lines that are imperceptible to me. "I feel like I'm just watching instead of taking part in the class." (FGD 1 F, 2024)

A special education lecturer participant from TEVET institution 1, presented the following perspective during interviews:

"The TEVETA framework prioritises industry skills; however, it lacks guidance on instructing individuals with visual impairments. I also follow the traditional curriculum designed for visual engagement, rather than tactile or auditory interaction." (SEL, 2024)

6.1.2 Educational Shortcomings and the Lecture-Centric Approach

The quality of training is significantly impaired by a substantial lack of specialised skills among educators. Instructors' inadequate proficiency in Braille and tactile teaching methods leads them to rely on traditional educational approaches that are inaccessible to students with visual impairment students. A participant, a special education lecturer from TEVET institution 2, articulated the aforementioned perspectives during interviews, stating that:

"I was trained to teach engineering, not Braille. In the realm of complex circuit schematics or designs, I prefer to utilise verbal communication and a chalkboard. I acknowledge that the visually impaired learner faces a disadvantage; nonetheless, I do not possess the necessary skills to convert visual concepts into tactile formats." (SEL, 2024)

A primary participant from TEVET institution 2 expressed the aforementioned viewpoints during interviews.

"We have teachers who are very good at what they do, but they don't know much about special education." This makes the teaching style very one-sided, with only "chalk and talk" being used, which helps the sighted but not the blind. (P2, 2024)

6.1.3 The Borrowed Vision Method and Reduced Independent Proficiency

The lack of Assistive Technology (AT), such as auditory digital callipers or tactile gauges, has changed how people learn new skills from doing them on their own to having someone else help them do it. Students with visual impairments are required to rely on their sighted peers to do technical activities. A female student participant from TEVET

Institution 2 articulated similar sentiments during the focus group discussion, asserting that:

"I could not independently assess the components due to a lack of suitable instruments. I need to ask my friend, "What does the gauge say?" I am not getting skills to become a mechanic; I am learning to witness another person execute the role of a mechanic. This "borrowed sight" makes me worried about getting a job." (FGD 2 F, 2024)

One special education lecturer participant at TEVET Institution 3, made the following statement during an interview:

"The kids with visual impairments are exceptional, although limited resources constrain their advancement. Without tactile tools, they have to rely on their coworkers to do the "visual" job for them. They understand the theory, but they don't have the skills to do it on their own" (SEL8, 2024)

6.1.4 Systemic Inconsistency and Lack of Adaptation Standards

The results show that the Persons with Disabilities Act of 2012's aim has not been reflected in the requirements set by institutions. Consequently, curricular change relies on the personal effort of educators rather than being a mandated structural requirement. In line with the previous findings, a participant from TEVET institution 1, designated as a special education lecturer, said during interviews:

"There are no clear, written rules from the authorities about how to change a technical manual for a student who is blind or has low vision. The inclusion in this setting depends on the kindness or creativity of each teacher, which is not a good way to run a national programme." (SEL3, 2024)

One special education lecturer participant from TEVET institution 3, said something similar during interviews. They said:

"I try to explain things in an audio-visual way whenever I can, but I'm just guessing." Without clear standards for tactile graphics, my classroom practices could be very different from those at other schools." (SEL7, 2014)

6.1.5 Evaluation as a Barrier to Professional Accreditation

The way that TEVET institutions assess their students is still very difficult. Most tests are based on text and do not have many different formats, which makes it hard for students to show off what they have learnt. A female student from TEVET Institution 3 said something similar in a focus group discussion:

"I know the material well, but when the test comes, it feels like a huge stack of papers. There is no oral or tactile practical test. The system assumes I don't know how to read the print if I can't, even though I can do the job by hand." (FGD 3 F, 2014)

A key participant from TEVET Institution 3 confirmed this in interviews, saying: *"Our evaluation methods are exclusionary. We are judging their vision instead of their ability to do the job."* *"Even if a student is very talented, the print-heavy format of final exams is often the last thing that keeps them from graduating."* (P3, 2024)

The analysis above, highlights a substantial discrepancy between Zambia's comprehensive legal aims and the actual circumstances inside TEVET institutions, where the curriculum continues to be mostly vision-centric and static. This systemic failure is due to teachers not being knowledgeable enough about specialised teaching methods like Braille and tactile education. As a result, they rely on "chalk-and-talk" methods that leave out pupils with visual impairments. Furthermore, the ongoing absence of assistive technology forces these pupils to depend on sighted peers, obstructing their achievement of independent proficiency. The lack of established adaptation standards and evaluation models that rely heavily on printed materials makes the problems with teaching and resources even worse. This makes it hard for students to formally show off their professional skills. Ultimately, these situations result in students with visual impairments experiencing partial inclusion, where they are physically present but pedagogically excluded from the learning process.

6.2 Perceptions of Stakeholders About the Skills Development TEVET Curriculum Provided to Visually Impaired Students in TEVET Institutions on the Copperbelt

The study found two types of perceptions regarding stakeholders' views on the effectiveness of the TEVET curriculum in developing skills for students with visual impairments in TEVET institutions. These included both positive and negative perceptions.

6.2.1 Positive Views on the Skills Development: The TEVET Curriculum is Offered to Students with Visual Impairments at TEVET Institutions

The consensus derived from the systematic data coding process indicated that stakeholders primarily regarded the skills development TEVET curriculum for students with visual impairments in TEVET institutions favourably. This optimistic viewpoint was attributed to several significant outcomes and expectations. The curriculum was positively evaluated, as it led to a quantifiable increase in the enrolment of visually impaired students in TEVET institutions, demonstrating that the program successfully addressed an unmet educational and social need. A notable demand for skills development courses was evident among students with visual impairment, suggesting that the curriculum was relevant and desired by the target audience. Additionally, a key advantageous aspect was the curriculum's guarantee of self-employment upon

graduation, providing a viable pathway to economic independence and entrepreneurship for graduates with visual impairments. Stakeholders recognised the guarantee of formal employment following course completion as a substantial benefit, positioning the curriculum as a vital tool for assimilation in the traditional labour market. The curriculum was viewed as a mechanism for securing improved lives for VI individuals, offering a tangible approach to achieving better social and economic outcomes. A principal participant from TEVET institution 2 expressed the aforementioned thoughts during interviews, stating that:

"The skills development TEVET curriculum offered to visually impaired students at TEVET institutions has increased their enrolment in these institutions. The curriculum also includes students with visual impairments." (P2, 2024)

Another participant from TEVET Institution 3 during the interview remarked that:

"Our college is presently overwhelmed by the number of students with visual impairments enrolled in skills development TEVET programmes. This is a significant benefit of this curriculum. All individuals, particularly those who are marginalised, are viewed in this way. All individuals, particularly those who are marginalised, are viewed in this way." (P3, 2024)

A participant, a special education lecturer from TEVET institution 1, articulated during interviews that:

"The classrooms are overcrowded with students participating in the skills development course. This indicates that there is a demand for skills development courses. The classes are too crowded, resulting in students vying for seating arrangements." (SEL3, 2024)

A male student participant from TEVET institution 2 articulated similar sentiments during the focus group discussion, claiming that:

"The demand for the courses has increased. The number of students enrolled in TEVET colleges has increased. Upon entering the classrooms, one witnesses' numerous students." (FGD 2M, 2024)

A special education lecturer participant from TEVET institution 1, expressed the following during interviews:

"Indeed, Sir, I concur with my colleague, as these skills are advantageous. They will promote the employment of individuals with vision impairments in professional environments. Furthermore, upon obtaining these skills, students with visual impairments will be assured self-employment upon finishing the training programme." (SEL3, 2024)

A female student participant from TEVET institution 3 confirmed these findings during a focus group discussion, stating:

"Despite the challenges faced by students with visual impairments, the TEVET curriculum is beneficial, as it equips them with practical skills for earning a livelihood after completing their training." (FGD 3 F, 2024)

A student participant in the focus group discussion affirmed the findings by stating:

"Indeed, Sir, I concur with my associates. A multitude of students with visual impairment are begging on the streets. The TEVET Curriculum for visually impaired pupils aims to reduce street begging by providing essential skills for sustainable employment." (FGD 1 M, 2024)

A participant, a special education lecturer from TEVET institution 2, expressed the following viewpoint during interviews:

"The TEVET curriculum for skills development improves the livelihoods of individuals with disabilities, particularly those with visual impairments." The bulk of our kids exhibit capabilities that promote their autonomy." (SEL 4, 2024)

A female student participant from TEVET institution 3 articulated similar sentiments during the focus group discussion, asserting that:

"These skills are advantageous as they improve our lives by allowing us to operate autonomously without dependence on others in society." (FGD 3 F, 2024)

The findings indicate that stakeholders viewed the skills development TEVET curriculum for visually impaired students in TEVET institutions positively, as it led to increased enrolments and greater demand for skills development courses. Students were assured self-employment upon completion of the course, guaranteed official employment, and improved livelihoods.

6.2.1.1 Negative Perceptions Regarding the Skills Development TEVET Curriculum Provided to Students with Visual Impairments at TEVET Institutions

The findings indicated that a portion of stakeholders had a negative perception of the skills development TEVET curriculum offered to students with visual impairments at TEVET institutions. Multiple stakeholders asserted that the skills development TEVET curriculum offered to students with visual impairment in TEVET institutions was influenced by political motives. Lecturers with lower qualifications had challenges; some institutions prioritised profit, corruption affected student admissions, there was a

deficiency of properly trained staff, infrastructure was substandard, and educational resources were inadequate. A participant, a special education lecturer from TEVET institution 3, voiced the aforementioned perspectives during interviews, asserting that:

"Indeed, Sir, I contend that the skills development TEVET curriculum offered to visually impaired students in TEVET institutions is shaped by political motivations. The continuation of this may be compromised when a different political party comes to power." (SEL 10, 2024)

A special education lecturer participant at TEVET institution 1, articulated during interviews that:

"Some students are challenging to instruct. While we recognise the existence of this alleged CDF, we are under considerable pressure as teachers of these pupils. Indeed, some students are difficult to manage." (SEL 2, 2024)

A participant from TEVET institution 2, functioning as a special education lecturer, confirmed in interviews that:

"The grade nine students who have failed present significant instructional challenges. Notwithstanding the availability of free education through CDF, difficulties remain; certain learners struggle to express themselves in fundamental English." (SEL 6, 2024)

One special education lecturer participant at TEVET Institution 3, directly expressed critical opinions during an interview, stating that:

"In my opinion, numerous institutions prioritise profit over fulfilling the requirements of students.' students.' The classrooms are overcrowded, lacking adequate space and desks for all students" (SEL 8, 2024)

"Lesson observations revealed that numerous classrooms were excessively crowded, especially in institutions 1 and 2. Students were arranged three per desk. This validated the claims presented by other stakeholders during interviews and focus group discussions. Some colleges prioritise profits over fulfilling students' needs." (Researcher, 2024)

A Principal participant from TEVET institution 2 expressed during interviews that:

"While the TEVET Curriculum for skills development for visually impaired students is commendable, it lacks sufficiently trained instructors and appropriate pedagogical methods and strategies for differentiated instruction." (P2, 2024)

A female student participant from TEVET institution 2 articulated comparable sentiments during the Focus Group Discussion, asserting that:

“Conversely, I contend that the skills development TEVET Curriculum offered to students with visual impairments is deficient, as it does not adequately address the scarcity of properly trained personnel, ineffective pedagogical methods and strategies, inadequate teaching and learning resources, inappropriate infrastructure, and the lack of assistive technologies for accommodating students with visual impairments.” (FGD 2 F, 2024)

A Special Education Specialist from the Ministry of Technology and Science affirmed the previously indicated findings during interviews:

“The TEVET Curriculum for skills development is inadequate in modern physical training facilities, such as furniture, classrooms, and workshops, to successfully respond to rapid technological improvements.” (MOTS 2, 2024)

A Lecturer participant during interviews stated:

“We encounter a difficulty with the inadequacy of teaching and learning resources for visually impaired students, such as braille frames, papers, and styluses. Assistive technologies, such as Screen Readers, Speech Synthesizers, Portable Electronic Braille Writers, and Electronic Reading Systems, enhance the educational experience for students with visual impairments and support the development of crucial survival skills. However, these materials are predominantly inaccessible at most TEVET institutions.” (SEL 3, 2024)

Certain interviewees explicitly exhibited an unfavourable assessment of the skills development TEVET Curriculum offered to students with visual impairments at TEVET Institutions. This unfavourable viewpoint was directly associated with the assertion that specific universities lacked suitable teaching and learning tools designed for students with visual impairments. This limitation encompasses a lack of essential resources, including Braille textbooks, tactile models, accessible laboratory equipment, and sufficient specialized Assistive Technology. This deficiency severely hampers the successful execution of the curriculum, highlighting a basic failure to provide an equitable and accessible learning environment essential for students with visual impairments to develop occupational skills.

6.3 TEVET Curriculum Adaptations to Address Skills Development for Students with Visual Impairments in TEVET Institutions Throughout the Copperbelt

The study indicated that the modifications to the TEVET curriculum, designed to improve skills development for visually impaired students in TEVET institutions on the Copperbelt, encompassed a user-friendly training environment, appropriate pedagogical

methods, ample teaching resources, suitable assessment procedures, and necessary adjustments in time and content. These characteristics collectively demonstrated the curriculum's intentional design to foster equitable learning for children with visual impairments. A principal participant from TEVET institution 1 supported these findings during interviews.

"The teaching environment is frequently altered. Instructors modify the classroom environment by establishing appropriate seating configurations; they allow short-sighted students to sit in the front and farsighted students in the back, dependent on enough lighting and sufficient ventilation in the classroom." (P1, 2024)

A participant, a special education lecturer from TEVET institution 2, stated during interviews:

"In my class, I employ adaptations to instructional strategies such as discussion, problem analysis, cooperative learning, individualised instruction, one-on-one learning, pair work, storytelling, and role-play. Students clearly grasp the concept and can access the subject matter." (SEL 6, 2024)

A participant from TEVET institution 1, who holds the position of special education lecturer, articulated during the interviews:

"Our function is to provide customised educational resources for learners. Therefore, we guarantee that the educational materials are accessible, customised, and sufficiently simplified to eliminate any difficulties for students in their utilisation." (SEL 1, 2024)

A special education specialist from the Ministry of Technology and Science affirmed the previously indicated findings during interviews.

"In assessing students with visual impairments in TEVET institutions, instructors provide accommodations such as extended time for tests and examinations, along with rest breaks during examination periods." Students are often allotted 25 per cent of the usual examination time. This enables compensation for any time lost" (MOTS 1, 2024)

In alignment with the above-described findings, a participant from TEVET institution 3, designated as a Special Education Lecturer, articulated throughout the interviews:

"We prolong the instructional period for students with visual impairments because of their extended understanding of concepts." We accomplish this by connecting education with students' abilities and presenting challenges that foster their engagement." (SEL 8, 2024)

Another special education lecturer from TEVET institution 2, confirmed these findings during interviews, stating that:

"An instance of content adaptation I implement when instructing students with visual impairments involves the application of task analysis in teaching specific topics or skills." I achieve this by breaking down the material into short, manageable tasks that are easily understandable for learners with intellectual disabilities, guaranteeing they face no challenges." (SEL 7, 2024)

The findings revealed that the adaptations to the TEVET curriculum designed for the skills development of visually impaired students in TEVET institutions on the Copperbelt included a user-friendly training environment, optimised lighting, appropriate pedagogical methods such as audio learning, and adequate instructional resources like multi-sensory aids. Furthermore, it was characterised by appropriate assessment techniques, including scribes, extended time, efficient time management, and the integration of changed content such as simplified and task-analysed materials.

7. Discussion of Findings

7.1 The Nature of Skills Development TEVET Curriculum Offered to Students with Visual Impairment in TEVET Institutions

The findings regarding the skills development within the TEVET curriculum for students with VI in TEVET institutions correspond with the Social Model of disability, which posits that disability is not merely a medical deficiency but rather a consequence of environmental and structural obstacles. The significant disparity between legislation and practice in Zambia reflects the worldwide discourse on the implementation gap in Sub-Saharan Africa, where legislative frameworks such as the UN Convention on the Rights of Persons with Disabilities (UNCPRD) sometimes exist as mere symbols rather than functional entities. The examination of a vision-centric curriculum corroborates prior research on the concealed curriculum of exclusion, wherein the design of educational materials automatically advantages sighted pupils. Moreover, the dependence on a borrowed perspective, particularly through peer influence, is recorded in educational literature as a substantial impediment to the cultivation of self-efficacy and autonomous vocational identity, both of which are essential for a successful transition into the labour market.

The findings indicate that Zambia's existing inclusive education regulations are deficient in accountability mechanisms required for institutional compliance. To rectify the educational marginalisation of students with visual impairments, policy must transcend general statements of desire and implement compulsory Documented Adaptation Standards expressly for the TEVET sector. A pressing necessity exists for a national policy transformation that incorporates Universal Design for Learning (UDL) into the accreditation standards for vocational institutions. The findings indicate that

TEVETA must amend its funding formulae to allocate resources explicitly for the procurement of assistive AT and the conversion of print-intensive exams into accessible formats.

The change from partial inclusion to active participation necessitates a fundamental transformation in instructor professional development. Instructors must possess functional proficiency in Braille, tactile graphics, and verbal description approaches to transcend the restrictive chalk-and-talk style. In the classroom, practice should incorporate multimodal instruction, where occupational skills are exhibited through practical mastery rather than dependence on visual activities. Institutions must emphasise the establishment of resource rooms to eradicate the borrowed sight phenomenon, equipping visually impaired students with the necessary tools for autonomous mastery of their skills, thus matching classroom practices with the requirements of an inclusive workforce.

7.2 Perceptions on the Skills Development TEVET Curriculum for Students with VI

The discovery that stakeholders possess a combination of positive and negative perspectives substantiates Muzata's (2017) claim that the efficacy of any educational intervention is inherently connected to the attitudes of its implementers. Positive perceptions of self-reliance and employment opportunities correspond with Chileshe (2019), corroborating the notion that when vocational skills are viewed as instruments of empowerment, stakeholders are more inclined to support inclusion. However, comparing these results with those of Islek (2016) reveals a significant discrepancy. Islek underscores the significance of responsive educators in developing an Expanded Core Curriculum (ECC) for independent living; yet, your research indicates that in the Zambian TEVET environment, these initiatives are frequently compromised by systemic scepticism. The unfavourable perceptions, particularly the belief that programs are politically motivated, indicate a deficiency in institutional trust that is less evident in international literature but crucial in the local context. The findings indicate that, despite the curriculum's technical validity, adverse stakeholder attitudes concerning corruption and resource constraints serve as a psychological impediment to its implementation.

The findings, in accordance with UDL, offer a nuanced application of the UDL concept of Multiple Means of Engagement (the rationale for learning). Favourable stakeholder perceptions serve as a catalyst for engagement; when lecturers recognize the tangible professional benefits and significance of the curriculum, they cultivate a stimulating environment that enhances student self-efficacy. Your work reveals a significant theoretical tension regarding the perceived universality of UDL. Although UDL aspires to be a proactive design solution, its vagueness may result in stakeholder uncertainty, inadvertently contributing to negative perceptions of the program as unstructured or arbitrary. To address the negative perceptions, including the notion that the program is only a political formality, UDL must be employed to transcend mere presence in the classroom and foster intentional engagement. Through the optimization of choice and the demonstration of tangible, high-quality results, UDL may transform the

stakeholder discourse from a focus on expensive retrofitting to one centred on comprehensive, universal excellence.

The principal policy implication of these findings is that legislative mandates for inclusion are inadequate unless supplemented by perception management and transparency frameworks. To mitigate adverse perceptions of political motivation and corruption, policy must implement explicit, meritocratic, and transparent procedures for student selection, subject to audits by independent advocacy organizations for the visually impaired. The results show that TEVETA needs a Communication and Sensitization Policy. This approach must transcend the training of educators in technical competencies and emphasize attitudinal reorientation, enabling stakeholders to perceive children with visual impairments as valuable assets rather than encumbering additions with inferior qualifications. Ultimately, the resource deficiency highlighted by stakeholders indicates that policy must associate inclusion targets with guaranteed funding, ensuring that the demand for heightened enrolment is consistently accompanied by the necessary physical and human resources to support it.

The favourable agreement among numerous parties establishes a basis for the creation of mentorship and peer-to-peer learning networks. Practice should formally incorporate VI alumni who are effectively self-employed into the instructional team; this serves as evidence that can challenge the unfavourable assumptions held by more sceptical personnel. To rectify the identified practical weaknesses, particularly the challenges faced by students with limited qualifications, teachers must incorporate Scaffolded instruction into their UDL toolset, thereby bridging basic gaps while maintaining the rigor of vocational training. Administrators must prioritize navigability and infrastructure issues as essential safety requirements rather than seeing them as secondary projects. By establishing a "predictable and safe" atmosphere, institutions can effectively validate the program's legitimacy, transforming negative criticism into affirmative, evidence-based endorsement.

7.3 Adaptations of the TEVET Curriculum Addressing Skills Development for Students with Visual Impairments at TEVET Institutions on the Copperbelt

This study's differentiation between tailored and untailored curriculum adjustments corresponds with the wider academic discussion regarding the Social Model of Disability. Literature indicates that an unadapted curriculum serves as an environmental obstacle, converting a physical impairment into a functional disability via exclusion. The results regarding the sighted-centric nature of Zambian TEVET align with Simalalo (2017), affirming that vocational education in Southern Africa continues to be one of the most resistant areas to inclusive reform. Markowitz (2016) highlights general differentiation strategies; however, findings of this study indicate that such strategies are inadequate for the visually impaired context. Instead, a highly specialized and tailored array of sensory-specific adaptations, including Braille, tactile cues, and audio feedback, is necessary. This finding indicates that inclusion in TEVET is not solely an educational decision but a structural imperative to avert what you termed pedagogical sidelining.

These findings, in alignment with UDL, provide robust empirical validation of the UDL framework, particularly the transition from reactive accommodation to proactive design. The customized strategy recognized by stakeholders aligns directly with the three UDL pillars: Multiple Means of Representation, which dismantles visual-only barriers by offering content through audio, Braille, and tactile models; Multiple Means of Action and Expression, which accommodates diverse assessment formats and extended time to recognize that non-visual mastery necessitates varied temporal and physical pathways; and Multiple Means of Engagement, which cultivates a predictable, secure, and navigable workshop environment to promote the autonomy essential for vocational persistence. In contrast, the unmodified curriculum exemplifies a distinct violation of UDL principles, as a uniform design naturally marginalizes learners with visual impairments, compelling them into a reliance on external visual aids that undermines the core UDL objective of fostering independent, proficient learners.

These findings have policy consequences. The findings necessitate a shift from generic inclusion to accountability-driven policy. There is an immediate necessity for a Personnel and Training Policy that requires certified expertise in specialized visual impairment pedagogies for all TEVET instructors. Policy must progress beyond mere encouragement and establish mandatory specialization training as a prerequisite for institutional accreditation. Secondly, the government must implement a Procurement Policy for Assistive Technology to guarantee that devices like talking micrometers and Braille displays are considered regular workshop equipment rather than exceptional luxuries. Ultimately, policy must institutionalize consultative structures, guaranteeing that VI advocacy organizations possess a legally acknowledged role in curriculum monitoring, thus transforming the power dynamic from institutional convenience to student-centred rights.

These findings require a shift towards tactile pedagogy and the sensory separation of technical tasks. Educators must transcend the traditional lecture style, implementing a practice where each visual instruction is accompanied by a tactile or audio counterpart. This entails conducting practical workshop audits to substitute visual indicators, such as warning lights, with haptic or audio messages. Moreover, the unaddressed dangers, including safety threats in inaccessible workshops, indicate that Orientation and Mobility (O&M) Specialists must be essential members of the TEVET instructional team. Practitioners must reconsider time as a variable; in an inclusive workshop, competency should be assessed based on the quality of the "measure, assemble, or repair" activity rather than the rapidity of visual processing, thereby allowing students with visual impairments to exhibit genuine professional proficiency.

8. Conclusions and Recommendations

The study reveals that the existing TEVET environment for students with VI in Zambia exhibits a significant disparity between legal objectives and actual classroom conditions. By adopting a vision-centric perspective, the TEVET sector unintentionally converts

physical handicap into a functional disability, consigning students to the role of passive observers instead of active participants in vocational training. The results highlight that just general inclusion is inadequate; without targeted tactile teaching methods, effective evaluation frameworks, and advanced assistive technology, achieving independent professional proficiency remains unattainable. Moreover, the endurance of adverse stakeholder views underscores that systemic reform must tackle not just physical and pedagogical obstacles but also the fundamental challenges of institutional trust and attitudinal prejudice. Ultimately, connecting the TEVET curriculum with UDL principles is not only a pedagogical improvement but also a structural need to guarantee that students with visual VI can acquire the occupational skills necessary for economic self-sufficiency and national contribution. In light of the above-mentioned findings, the following recommendations were proposed:

- 1) TEVETA should establish explicit standards for curriculum adaptation, necessitating that all educational materials be provided in Braille, tactile, and audio formats. Accessibility should be an essential criterion for program accreditation, not merely an optional enhancement.
- 2) The Ministry of Technology and Science should mandate accreditation for instructors in specialized pedagogies, encompassing Braille and assistive technology (AT). This should be underpinned by specialized incentives to attract and retain expert individuals.
- 3) The government must allocate designated funding for the acquisition of specialized vocational tools, such as talking micrometers and haptic gadgets. This primary funding system will ensure a consistent supply of resources and eliminate reliance on unpredictable municipal budgets.
- 4) TEVET institutions ought to implement UDL as the benchmark for proactive instructional design. This entails transitioning to multimodal delivery, eliminating solely visual indicators from vocational assignments, and adopting flexible assessments such as tactile skills evaluations in place of text-intensive examinations.

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Conflict of Interest Statement

The authors declare no conflicts of interest.

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