Assessing the Readiness and Capacity of TEVET Institutions in Zambia to Implement Open, Distance, and Flexible Learning (ODFL) Programs

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Abstract

The Technical Education, Vocational and Entrepreneurship Training (TEVET) sector in Zambia is undergoing transformation to improve access and flexibility in educational delivery. Open, Distance, and Flexible Learning (ODFL) is emerging as a promising model to address the growing demand for skills development. This study assessed the readiness and capacity of TEVET institutions to implement ODFL programs, focusing on technological, infrastructural, human resource, and policy-related dimensions. A mixed-methods approach was adopted, comprising a quantitative survey of TEVET institutions and qualitative interviews with institutional leaders and educators. From a total of 435 accredited institutions, a proportionate sample of 30 was selected, ensuring representation across all institutional grades. The grading system ranges from Grade 1 to Grade 3, with Grade 1 institutions meeting all accreditation requirements, Grade 2 institutions meeting most requirements with minor gaps, and Grade 3 institutions meeting only the basic requirements necessary for accreditation. Institutions falling below this threshold are not accredited to offer training. Quantitative data were analysed using frequencies and graphical presentations, while qualitative data were analysed thematically. The analysis identified key strengths, gaps, and barriers affecting institutional readiness to implement ODFL programs. The findings revealed varying levels of preparedness, with significant challenges including limited access to technology, inadequate educator training, and underdeveloped digital infrastructure. Based on insights from the ongoing ODFL pilot project, the study proposes a strategic framework that prioritizes policy reform, capacity building, and investment in digital technologies. These recommendations aim to enhance the capability of TEVET institutions to deliver flexible and inclusive training. The findings provide valuable guidance for policymakers and educators in advancing vocational education through innovative and accessible learning modalities in Zambia.

Keywords: Technical Education, Vocational and Entrepreneurship Training, Open, Distance, and Flexible Learning, Institutional readiness

Introduction

Background

The demand for technical and vocational education in Zambia has surged, driven by the imperative to equip the workforce with relevant skills. Open, Distance, and Flexible Learning (ODFL) has appeared as a pivotal strategy to broaden educational access, overcoming barriers like geographical remoteness and resource limitations. Recognizing this, the TEVET policy (MoHE, 2020) acknowledges ODFL as a crucial approach to expanding TEVET accessibility in Zambia.

Aligned with Zambia's Vision 2030 and the eighth National Development Plan (8NDP), there is a heightened emphasis on cultivating skills essential for key economic sectors. This recognition has spurred intensified efforts and partnerships, such as collaboration with the Commonwealth of Learning (COL), aimed at standardising accreditation processes for trainers and institutions offering programs through ODFL.

This study assessed the preparedness and ability of TEVET institutions to integrate ODFL into their educational delivery systems, reflecting the evolving landscape of vocational education in Zambia.

Objectives of the Study

The study was guided by the following objectives: (a) To assess the level of awareness and understanding of ODFL among TEVET institutions in Zambia. (b) Assess the technological and infrastructural readiness of TEVET institutions for ODFL implementation. (c) Evaluate the capacity of human resources in TEVET institutions to deliver ODFL programmes. (d) Analyse policy frameworks supporting ODFL in Zambia. (e) Identify gaps and barriers in ODFL implementation. (f) Propose strategic recommendations for successful adoption of ODFL in the TEVET sector.

Methodology

This study employed an embedded design of mixed-methods research with a survey design complimented by narratives. The mixed-methods approach was particularly suitable as it provided a comprehensive understanding by complimenting numerical assessments with detailed contextual insights. The approach also offered contextual depth, capturing nuances that may not have been clear in survey responses alone. Furthermore, it enhanced the study's policy relevance by generating evidence-based recommendations for TEVET stakeholders, supporting informed decision-making on ODFL adoption. Given the evolving nature of ODFL in Zambia, the mixed-methods design provided the flexibility needed to explore emerging issues while keeping structured data collection.

Population and Sample

The population was all TEVET accredited institutions in Zambia. Institutions are graded in three categories: Grade 1, for institutions that meet all accreditation requirements; Grade 2, for those meeting most requirements; and Grade 3, for institutions meeting only the basic requirements. At the end of third quarter of 2024, 435 institutions were accredited (TEVETA, 2024); distributed as follows: 30 in Grade 1, 131 in Grade 2, and 273 in Grade 3. Geographically, 384 institutions were in urban, while only 51 were in rural areas.

To ensure representativeness in this study, a stratified random sample of 30 institutions—being approximately 7% of the total population—was selected. The sample was proportionally distributed by accreditation grade and geographic location, comprising 2 institutions in Grade 1, 9 in Grade 2, and 19 in Grade 3; 28 were urban-based, and 2 were in rural areas. This sampling approach ensured that the study captured the diversity of institutional ability and readiness across both accreditation levels and geographical settings.

Table 1: Population and Sample Segregated by Grade Level

	Population	***Sample***
Grade 1	30	2
Grade 2	131	9
Grade 3	273	19
Total	**435**	**30**

Table 2: Population and Sample Segregated by Location

	Population	Sample
Urban	384	28
Rural	51	2
Total	**435**	**30**

Data Collection Methods and Analysis

Data collection involved the use of a questionnaire to gather quantitative data, structured interviews with institutional leaders and focus group discussions (FGDs) with trainers to capture qualitative perspectives. The questionnaire was designed to assess key indicators such as institutional preparedness, availability of infrastructure, digital literacy levels, and beliefs of ODFL among TEVET trainers and administrators. The quantitative data was analysed using descriptive statistics. This statistical approach helped establish trends, patterns, and variations in institutional readiness for ODFL implementation.

The structured interviews and FGDs provided an opportunity to discuss experiences, beliefs, and challenges related to ODFL adoption offering deeper insights into institutional support, pedagogical adjustments, technological barriers, and the effectiveness of current training programs. The qualitative data was analysed thematically, where emerging themes were identified, categorized, and interpreted. This approach facilitated a deeper understanding of subjective experiences, adding context to the quantitative results.

Findings

Quantitative data collection recorded a 97% response rate with 29 out of the 30 sampled institutions responding to the questionnaire. Qualitative insights were gathered through 16 interviews with institutional leaders and 8 focus group discussions (FGDs) with trainers. The results show that approximately 21% of the programs were delivered through ODFL.

Quantitative Findings

The quantitative findings examined the availability of tools and resources essential for the implementation of ODFL. The results follow in the respective subheadings.

Implementation of ODFL

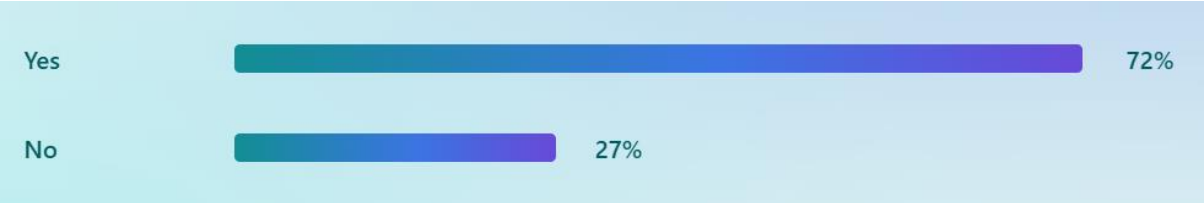
As shown in Figure 1, more than half of the institutions were implementing *training using* ODFL. However, a substantial proportion of 45% were not implementing ODFL at the time of the study.

Figure 1: Institutions Implementing ODFL

Availability of Reliable Internet

All the institutions reported having internet connectivity, with the majority indicating that the connections were reliable, as reflected in the high percentage who responded “yes” in Figure 2. However, 28% of the institutions had unreliable internet access.

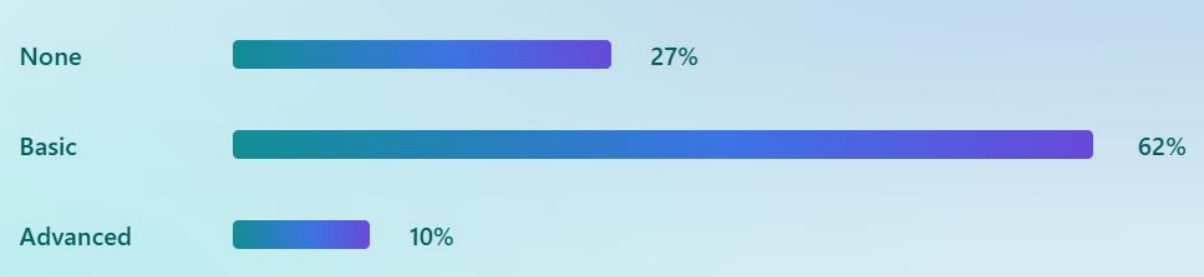
Figure 2: Reliable Internet Connectivity



Availability of Digital Infrastructure

A significant number of institutions (62%) had basic digital infrastructure, typically consisting of a limited number of desktop computers. Only 10% were well-equipped with modern computer laboratories, digital classrooms, and learning management systems. Notably, 27% of the institutions had no digital infrastructure in place as depicted in figure 3.

Figure 3: Digital Infrastructure to Support ODFL



Technical Support for Students and Staff

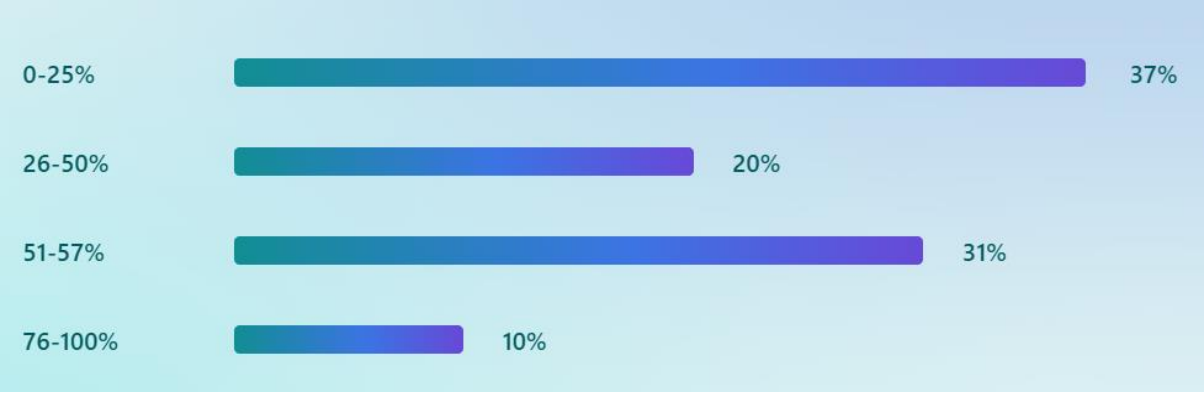
As shown in Figure 4, less than half of the institutions *had* technical support or a help desk for students and staff. The majority *(51%) had no support for* both staff and students.

Figure 4: Availability of Technical Support or Help Desk

Staff Trained in ODFL Methodology

As illustrated in Figure 5, only 10% of the institutions reported having more than 76% of their staff with formal training in ODFL methodology. For 31% of institutions, at least half of their staff were trained, while for the rest only a small proportion of staff were trained.

Figure 5: Percentage of Staff Trained in ODFL Methodology



CPDs for Staff on ODFL Methodology

Continuous Professional Development (CPD) in ODFL methodology was being implemented in 37% of the institutions as shown in Figure 6. The majority had no plans to offer CPD.

Figure 6: Provision of CPDs in ODFL Methodology

Institutional Support for ODFL

As illustrated in Figure 7, half of the institutions reported receiving satisfactory institutional support for ODFL implementation, while the other half indicated that the support provided was inadequate.

Figure 7: Institutional Support for ODFL

Availability of Dedicated Office or Personnel for ODFL

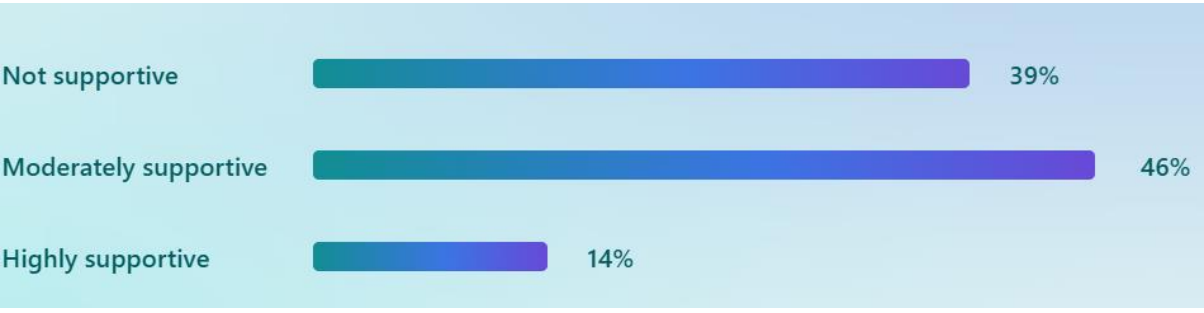
A significant number of institutions had a dedicated office and personnel responsible for coordinating ODFL activities. However, 44% had no dedicated office as depicted in figure 8.

Figure 8: ODFL Office and Personnel

National Policies' Support for ODFL

About national policies, 46% of respondents felt they were moderately supportive of ODFL implementation, while 14% showed that the policies were highly supportive. Interestingly, a considerable proportion of 39% felt that the national policies were not supportive at all. Figure 9 shows the details.

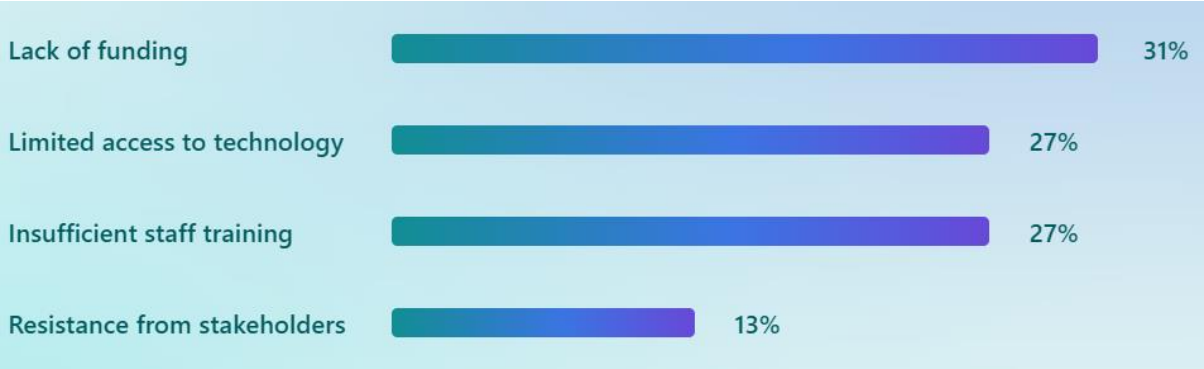
Figure 9: Support of National Policies Towards ODFL



Challenges to Implement ODFL

The primary challenge identified by institutions was the lack of funding. Other were limited digital infrastructure and insufficient opportunities for staff to receive training in ODFL methodologies. Although less prominent, resistance to change was also noted as shown in Figure 10.

Figure 10: Challenges in Implementing ODFL



Confidence in Institutional Ability to Implement ODFL in Next 5 Years

Most institutions expressed confidence in their ability to implement ODFL within the next five years, as shown in Figure 11. Only a small percentage were doubtful about their capacity.

Figure 11: Confidence to Implement ODFL in Next 5 Years

Qualitative Data

The qualitative data was derived from interviews with heads of institutions and focus group discussions.

Interviews with Heads of Institutions

The analysis of interview produced four main themes: institutional vision and strategic outlook on ODFL, Challenges in Implementing ODFL, Opportunities for ODFL Expansion and Policy and Governance Issues.

Institutional Vision and Strategic Outlook on ODFL. Institutions expressed a strong commitment to expanding access to education through flexible learning. Most of them aim to capture learners who cannot attend traditional in-person classes due to work commitments, geographical limitations, or financial constraints. Institution 2 highlighted that flexible learning was crucial to "accommodating the busy lives of learners who may not have time to sit in class the whole day." Institution 3 described its vision as ensuring that "our training programs reach as many people as possible, especially those in rural and underserved areas." Institution 15 emphasised the importance of mobile technology, saying that "Internet is found in most of the places, especially through phones… We think of programming the kind of learning that can be accessed by our youth using mobile gadgets." Institution 16 envisioned a model where students "can acquire skills that sustain them financially and benefit their families and communities." Overall, all institutions recognised the need for ODFL to broaden their reach, increase student enrollment, and adapt to changing educational needs.

Challenges in Implementing ODFL. The same challenges highlighted in quantitative data were also reported by institutional leaders. On lack of reliability of the internet, one leader reported: "The network is down most of the time, which makes it difficult to implement online learning." Another leader revealed: "The computers we have are very old… we need stable internet, but we don't have the equipment to support it."

On financial challenges, one leader lamented: "We are trying with little income… every time we try to implement something; we face financial roadblocks." Another leader said: "We need support for acquiring the right equipment, but we don't have the funding."

In terms of training, one leader said: "We have the willingness, but our instructors need training in using digital tools effectively." Another leader highlighted a readiness issue: "The staff have the desire to teach online, but they need to be trained first." Institution 16 suggested that a dedicated Information and Communication Technology (ICT) specialist should be employed to train instructors and manage digital learning platforms.

Opportunities for ODFL Expansion. Despite the challenges, institutions see enormous potential in implementing flexible learning, especially in specific sectors and targeting unique groups.

Many institutions identify workers in industries such as hospitality, agriculture, and ICT as potential beneficiaries of flexible learning. One leader saw an opportunity in the hospitality sector: "We have a lot of workers in lodges and hotels who need training but cannot leave their jobs… ODFL would allow them to learn while working." Another leader highlighted demand among computer science students who need certification but cannot attend regular classes.

Policy and Governance Issues. As reported in quantitative data, institutional leaders acknowledged the existence of policies that support ODFL, but implementation gaps hindered their effectiveness. One leader said that: "Policies are well-written, but there are gaps in how they are executed." Another raised an important concern: "Inspection policies need to evolve… TEVETA officials expect to see physical equipment, but ODFL means students can learn from home."

Focus Group Discussion

The discussions from eight focus groups generated the following themes: Differences between traditional and distance learning, Teaching Methods and Pedagogical Adjustments, Challenges in ODFL Implementation and Structured Student Engagement Strategies.

Differences Between Traditional and Distance Learning. One of the most striking observations from the focus groups was the clear distinction between traditional classroom teaching and ODFL. While traditional students benefit from constant engagement with lecturers, structured schedules, and face-to-face interaction, distance learners often struggle with independent study and limited access to immediate guidance. A lecturer from FG5 captured this difference succinctly when they described how traditional students engage with content over an extended period, while distance learners must absorb the same information within a compressed period. They said: "For the normal students, yes. OK. What we taught, the content is equivalent to what we teach in a whole year, then we compress it into two weeks." This highlights the challenge of delivering extensive curricula in short bursts of face-to-face interaction, often placing added pressure on both students and instructors.

Moreover, while traditional learning allows for continuous monitoring, ODFL relies heavily on students' ability to self-direct their learning. As one participant in FG8 noted: "Normally, we just give them the materials and hope they study on their own." However, the expectation that students will effectively engage with self-study materials is not always met, leading to gaps in knowledge and reduced comprehension.

Teaching Methods and Pedagogical Adjustments. Given the limitations of ODFL, educators have adopted various strategies to facilitate learning. One of the most common approaches is the use of structured self-study modules, which serve as the primary learning resource for students. As a participant from FG8 explained: "What is helping us now is the issue of modules themselves; when introduced, they actually help them a lot." Despite this, reliance on modules alone has proven insufficient, prompting educators to explore alternative methods such as practical demonstrations.

In FG7, one facilitator expressed frustration over the lack of adequate teaching tools: "If we had a projector, students could see what I am doing on the screen instead of crowding around desktops." Additionally, technology plays an increasing role in ODFL, with many instructors utilizing WhatsApp and Zoom to bridge the gap between physical contact sessions. A participant from FG7 described how WhatsApp groups serve as interactive learning spaces: "We've also created a WhatsApp group where students can ask questions and discuss topics with each other." However, while such platforms provide convenience, they also come with challenges, including distractions and misuse.

Challenges in ODFL Implementation. Several challenges affecting the implementation of ODFL were highlighted. A recurring issue across the discussions was the difficulty in keeping distance learners engaged when they are off campus. Many facilitators noted that students often do not take responsibility for their own learning. As one lecturer in FG8 lamented: "We give them modules, but when they return, it's clear they have not read anything." This issue is compounded by the shifting demographics of distance learners. Initially, many ODFL students were working professionals with a personal stake in their studies. However, as one FG8 participant pointed out, there has been an influx of younger students with lower levels of self-discipline: "Unlike before when distance students were working professionals with motivation, today's learners lack self-drive."

The evaluation of distance learners presents added challenges, as many struggle to meet assessment requirements. One lecturer in FG4 questioned how fairness in grading could be ensured when students spend most of their learning time off-campus: "How do we ensure fairness in assessment when students are off-campus most of the time?" Additionally, some students only show up for exams without having engaged in the learning process, making it difficult to evaluate their true understanding of the material.

Discussion of Findings

The discussion of the findings is presented in relation to the study objectives, contextualized within existing literature on ODFL in TVET.

Awareness and Understanding of ODFL Among TEVET Institutions

The first objective sought to assess the level of awareness and understanding of ODFL among TEVET institutions. The findings show that most institutions were aware of ODFL and recognize its value in enhancing access to skills training, especially for rural and working populations. Institutional leaders consistently expressed a strategic vision that included reaching underserved learners and increasing enrolment through flexible modes of delivery. These insights resonate with UNESCO's (2015) advocacy for open and distance learning as a mechanism to improve equity and inclusion in education. However, despite the awareness, the study revealed that implementation knowledge is still limited, particularly in pedagogical strategies and instructional design—issues echoed by Asunka (2008), who highlighted gaps in practical knowledge among African educators.

Technological and Infrastructural Readiness for ODFL Implementation

Objective two examined the technological and infrastructural readiness of institutions. Although 62% of institutions had some form of digital infrastructure, 28% reported having none. Common challenges included obsolete computers, limited access to reliable internet, and frequent power outages. These infrastructure deficits hindered institutions' ability to deliver consistent, quality ODFL programs. This aligns with findings from Tull et al. (2020), who reported similar infrastructure challenges in TVET institutions across Southern Africa. The adaptive use of mobile technologies like WhatsApp and Zoom shows innovation within constraints but also highlights the digital divide between institutions and learners (Brown & Czerniewicz, 2010).

Human Resource Capacity to Deliver ODFL

The third objective focused on evaluating the capacity of TEVET educators to deliver ODFL. Most instructors expressed willingness to adopt digital tools but admitted to lacking formal training in online instruction, curriculum design, and student assessment within an ODFL environment. These results confirm prior research showing that teacher competence is a critical success factor in distance learning (Farrell & Isaacs, 2007; Jung & Latchem, 2012). The findings further underscore the importance of continuous professional development in digital pedagogy, a gap which, if unaddressed, can undermine the quality of ODFL programs (Ivala et al., 2013).

Policy Frameworks Supporting ODFL

Objective four analysed policy and regulatory frameworks. The study found that while national development plans such as Zambia's Vision 2030 and the 8NDP support flexible and inclusive education models, institutional feedback revealed misalignment between policy intent and implementation. Respondents pointed out that existing inspection and accreditation frameworks prioritize physical infrastructure, which is at odds with the remote and digital nature of ODFL. These governance issues mirror concerns raised by Powell et al. (2012) and the Commonwealth of Learning (2020), who advocate for adaptive policies to accommodate new education models.

Gaps and Barriers in ODFL Implementation

The fifth objective identified several barriers which included digital exclusion among students without devices or connectivity, low learner engagement, particularly among younger students with limited self-directed learning skills, Inadequate assessment strategies and concerns about academic integrity, and resource constraints, especially in public and rural institutions. Such challenges are consistent with Dlodlo (2009) and Tait (2000), who stress that learner support, infrastructure, and quality assurance systems must be in place for ODFL to succeed. Student disengagement was also a theme in studies from Nigeria and Kenya, where lack of support mechanisms led to high attrition rates in ODFL programs (Aderinoye et al., 2007; Ng'ambi et al., 2013).

Strategies for Enhancing ODFL Adoption

The final objective proposed strategic interventions to enhance ODFL adoption. The study recommends upgrading digital infrastructure and ensuring power reliability, training instructors in online teaching and assessment methods, reforming policy frameworks to align with ODFL realities, fostering partnerships with industry and tech firms, and providing student support, including access to gadgets and learner tracking systems. These strategies reflect international best practices as recommended by UNESCO (2015) and COL (2020) and are essential to ensure that Zambia's TEVET sector can deliver accessible, inclusive, and market-relevant training through ODFL.

Recommendations

The recommendations for enhancing ODFL in TEVET institutions focus on improving institutional ability, infrastructure, and policy alignment. First, digital pedagogy training should be developed for TEVET instructors, ensuring ongoing professional development through a national framework. ICT support staff must be recruited to manage platforms and assist with content creation. Institutions also need substantial upgrades in ICT infrastructure, including modern computers, learning management systems, and reliable power solutions, particularly in under-resourced areas.

Student access to digital devices should be facilitated through affordable programs, alongside targeted digital literacy training. To improve student engagement, support mechanisms like digital help desks and peer mentoring should be set up. Additionally, TEVETA's accreditation standards should be revised to accommodate flexible learning methods, while inter-ministerial collaboration is needed to align policies on ICT, education, and energy.

Curricula must be redesigned for blended learning, integrating online modules with in-person or workplace training. Financial support, such as an ODFL Transition Support Fund, should be created to help institutions with digital upgrades. An effective monitoring and evaluation framework will ensure continuous improvement. Finally, awareness campaigns and stakeholder dialogues are crucial for building trust in ODFL.

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