

TECHNIQUES USED BY INTERPRETERS IN INCLUSIVE CLASSROOMS AT HIGHER LEARNING INSTITUTIONS IN ZAMBIA: A CASE STUDY OF KITWE COLLEGE OF EDUCATION

Abstract

This qualitative study employs a phenomenological design to explore the implementation of interpretation techniques aimed at fostering inclusivity in education, particularly in settings marked by linguistic diversity and resource constraints. Drawing on a sample of 15 participants—including three teacher educators, two interpreters, and ten students—the study utilizes focus group discussions (FGDs), lesson observations, and interviews to examine strategies such as sign language interpretation, simplified language, peer assistance, visual aids, and bilingual instruction. The findings reveal that these techniques significantly enhance the learning experiences of students with disabilities and language challenges. However, systemic challenges, such as limited resources, a shortage of trained interpreters, inconsistent practices, and negative cultural attitudes, undermine their effectiveness. Time constraints faced by educators and linguistic diversity within classrooms further complicate the implementation of inclusive practices. The study emphasises the importance of addressing these barriers through increased investment in resources, professional development for educators, and the establishment of standardized policies. Practical implications include the need for educational institutions to adopt comprehensive strategies that ensure consistency and accessibility in teaching practices. By doing so, they can create an equitable learning environment that supports diverse student populations.

Keywords: phenomenology, inclusive education, interpretation techniques, linguistic diversity, sign language, resource constraints, peer assistance, visual aids, bilingual instruction.

1. Introduction

Inclusive education is a key pillar of modern educational philosophy, advocating for the equal participation of all learners regardless of their diverse needs. It recognizes that every student, whether they face physical, language, or cognitive barriers, should have the opportunity to thrive in an environment that supports their unique requirements (UNESCO, 2017). This approach is essential for fostering diversity, promoting equity, and ensuring that all students have access to

high-quality education. Inclusive education has garnered increasing attention in recent years, particularly in higher learning institutions where the presence of students from diverse linguistic, cultural, and physical backgrounds is common (Booth & Ainscow, 2011). At the heart of this process is the role of interpretation techniques, which serve as vital tools in facilitating communication and ensuring that lessons are accessible to everyone, including those with disabilities or language barriers (Marschark & Knoors, 2017). According to Chishiba and Lunda (2024), the interpreter's role is to ensure that the communication barriers are removed by the interpreter's intervention so as to allow communication flow between the interlocutors.

Interpretation techniques play a crucial role in enhancing inclusivity within classrooms, particularly in settings where students face challenges such as language differences or physical disabilities. These techniques encompass a variety of methods, including sign language, assistive technology, and language translation, all of which aim to bridge communication gaps and foster an environment where no student is left behind (Kissau, 2019). By making lessons accessible, interpretation techniques ensure that students with diverse needs can engage fully in the learning process, thereby promoting inclusivity. While the global significance of these techniques is well-documented, there remains limited research on their application within the Zambian context, particularly in higher education institutions.

Kitwe College of Education, located in Zambia's Copperbelt Province, provides an ideal setting for investigating the application of interpretation techniques in inclusive classrooms. As a prominent institution focused on teacher training, Kitwe College of Education has been committed to ensuring that its programs are inclusive, accommodating students with various needs, including those with disabilities and language barriers (Zambia Ministry of Education, 2020). The college's ongoing efforts to integrate inclusive practices into its curriculum make it a valuable case study for understanding the effectiveness of interpretation techniques in higher learning institutions in Zambia. By exploring the ways in which these techniques are implemented at Kitwe College, this study aims to provide critical insights into how inclusive education can be enhanced through more effective communication strategies.

The justification for this study lies in its potential to address significant gaps in existing research and practice. Despite growing recognition of the importance of inclusive education, educators in

Zambia face persistent challenges in creating environments where all students can succeed. Language barriers, cultural differences, and physical disabilities continue to undermine efforts to promote equity in education. While interpretation techniques are widely recognized as effective tools for overcoming these challenges, little is known about their implementation and efficacy in Zambian higher education institutions, particularly in teacher training colleges. The lack of empirical data on this subject has hindered the development of targeted strategies to improve inclusivity. By focusing on Kitwe College of Education, this study not only fills a critical gap in the literature but also provides actionable recommendations to inform policy and practice. The findings have the potential to contribute to the broader agenda of ensuring equitable and high-quality education for all in Zambia.

This study aims to address the following research questions to deepen understanding and improve practices related to inclusive education in Zambia:

1. What interpretation techniques are currently employed at Kitwe College of Education to promote inclusive education?
2. How effective are these techniques in addressing the needs of students with disabilities and those facing language barriers?
3. What challenges do educators and administrators encounter in implementing interpretation techniques at Kitwe College?
4. What strategies can enhance the application of interpretation techniques to foster inclusivity in Zambia's higher education institutions?

2. Literature Review

2.1 Broad Discussion

Inclusive education has emerged as a transformative approach in global education reform, emphasizing the need for equitable access to learning opportunities for all students, irrespective of their physical, cognitive, linguistic, or cultural differences. Grounded in the principles of equality and social justice, inclusive education seeks to dismantle barriers that hinder the participation and achievement of learners with diverse needs. UNESCO (2017) defines inclusive education as a process that ensures the inclusion of all learners by accommodating a wide range

of learning needs within mainstream education systems. This vision aligns with the Sustainable Development Goal (SDG) 4, which aims to ensure inclusive and equitable quality education for all.

While the concept of inclusive education initially focused on integrating students with disabilities into regular classrooms, its scope has expanded to address broader diversity, including linguistic and cultural differences. In higher education, the implementation of inclusive practices is particularly vital due to the diverse backgrounds of students and the critical role these institutions play in shaping future leaders and professionals. However, achieving inclusivity in higher education often requires specialized strategies, including interpretation techniques, to bridge communication barriers that might otherwise impede student participation and success.

2.2. Existing Studies

The theoretical and practical foundations of inclusive education have been extensively studied. Ainscow and Booth (2002) contend that inclusive education goes beyond physical integration, emphasizing the importance of adapting teaching strategies and fostering a sense of belonging among all learners. Booth and Ainscow (2011) further highlight the persistent gap between policy and practice in achieving inclusivity, noting structural, financial, and pedagogical barriers as significant challenges, particularly in higher education settings.

Interpretation techniques have been recognized as crucial tools in fostering inclusivity by addressing communication barriers. These techniques encompass a range of methods, including sign language interpretation, real-time captioning, speech-to-text technologies, and visual aids (Marschark & Knoors, 2017). Stout (2018) underscores the importance of interpretation techniques in enhancing the participation of students with hearing impairments, while other scholars highlight the necessity of specialized training for interpreters to ensure accurate and effective communication.

Despite these advances, the practical implementation of interpretation techniques varies widely. Robinson et al. (2019) explore the role of digital technologies in supporting inclusive education, noting that while tools such as screen readers and captioning software have revolutionized accessibility, their integration into higher education remains inconsistent. This challenge is

particularly pronounced in developing countries, where resource constraints and limited training opportunities often hinder the effective adoption of these technologies (Mumba & Chirwa, 2021).

In the Zambian context, inclusive education is emphasized in national policies, but its implementation in higher education institutions faces significant challenges. Chirwa and Mumba (2022) identify inadequate resources, limited access to assistive technologies, and a shortage of trained interpreters as major barriers. Kamwendo (2018) highlights the additional complexity of linguistic diversity, with over 70 languages spoken across Zambia, necessitating interpretation techniques that account for both linguistic and cultural nuances. (Same are your findings...)

2.3. Identification of Unexplored Areas

While existing research provides valuable insights into the role of interpretation techniques in inclusive education, critical gaps remain, particularly in the context of Zambian higher education. Much of the available literature focuses on developed countries, with limited attention to the unique cultural, linguistic, and infrastructural challenges faced by institutions in Zambia. This gap is especially evident in teacher training colleges, such as Kitwe College of Education, which play a pivotal role in preparing future educators to implement inclusive practices. Furthermore, there is a lack of empirical research evaluating the effectiveness of interpretation techniques in fostering inclusivity in resource-constrained environments. Existing studies often overlook the practical realities of implementing these techniques in contexts where financial and infrastructural limitations are prevalent. Additionally, the interplay between cultural and linguistic diversity and the effectiveness of interpretation techniques remains underexplored.

2.4. Theoretical Frameworks

The study of inclusive education and interpretation techniques is underpinned by several theoretical frameworks. The social model of disability provides a critical lens for understanding the barriers that impede access to education for students with disabilities, emphasizing the need for systemic changes to create inclusive environments. This model contrasts with the medical model, which focuses on individual impairments, by advocating for structural and attitudinal changes within educational institutions (Oliver, 1990). Missing in the references

Vygotsky's sociocultural theory also informs the discussion on inclusive education by highlighting the importance of social interaction and cultural context in learning. This theory underscores the role of language and communication in shaping learning experiences, making interpretation techniques a vital component of inclusive education. Additionally, the Universal Design for Learning (UDL) framework provides a practical approach to inclusivity by advocating for flexible teaching methods and materials that cater to diverse learning needs (Meyer, Rose, & Gordon, 2014).

2.5. Research Gaps

Despite the growing recognition of inclusive education and the importance of interpretation techniques, significant research gaps remain. In Zambia, the limited availability of localized studies hampers the development of context-specific strategies for implementing inclusive practices. The effectiveness of interpretation techniques in addressing the needs of linguistically and culturally diverse students in Zambian higher education institutions remains largely unexplored. Additionally, there is a need for research that examines the practical challenges faced by educators and interpreters in implementing these techniques, particularly in resource-constrained environments. The impact of systemic factors, such as funding, policy support, and institutional capacity, on the adoption and effectiveness of interpretation techniques also warrants further investigation. By addressing these gaps, future research can contribute to the development of evidence-based strategies for fostering inclusivity in higher education institutions like Kitwe College of Education.

3. Methodology

This section outlines the research methodology adopted to investigate the interpretation techniques employed in inclusive classrooms at Kitwe College of Education. The methodology includes the research design, the study population, sampling techniques, data collection methods, and data analysis procedures. The objective was to gain in-depth insights into the lived experiences and perceptions of participants regarding the application, effectiveness, and challenges of interpretation techniques in fostering inclusivity for diverse learners.

3.1 Research Design

The study employed a phenomenological qualitative research design, which is particularly suitable for exploring the lived experiences of individuals in specific contexts. This design enabled the researcher to understand how participants perceive, experience, and make sense of the interpretation techniques used in inclusive classrooms. Phenomenology was chosen because of its focus on capturing the essence of participants' experiences, shedding light on the complexities of implementing these techniques in practice (Moustakas, 1994). By prioritizing the voices of participants, this design allowed for the collection of detailed and meaningful data. It facilitated the identification of patterns, themes, and nuances in the experiences of educators, interpreters, and students regarding the role of interpretation techniques in promoting inclusivity. This approach ensured that the findings were grounded in the real-world experiences of those directly involved in inclusive education.

3.2 Population and Sampling

The study's target population consisted of educators, interpreters, and students at Kitwe College of Education who were actively involved in inclusive education practices. This population was selected to ensure the study captured diverse perspectives from individuals with direct experience in applying and benefiting from interpretation techniques. To achieve this, the study employed purposive sampling, a qualitative sampling technique designed to intentionally select participants who could provide the most relevant and insightful information about the research problem (Patton, 2002). This approach was particularly suitable for this study because it ensured that the participants had significant knowledge and experience related to the use of interpretation techniques in inclusive classrooms.

The sample included three groups of participants. First, three (3) educators were selected based on their active involvement in teaching in inclusive classrooms. These lecturers were chosen for their firsthand experience working with diverse student populations, including those with disabilities and language barriers. Their insights were critical in understanding the strategies used to integrate interpretation techniques and the challenges they faced.

Second, two (2) interpreters were included in the study. These interpreters were responsible for facilitating communication for students with hearing impairments, language barriers, or other challenges. Their inclusion was essential for understanding the technical and contextual aspects

of interpretation techniques and their effectiveness in addressing communication needs in inclusive classrooms.

Finally, ten (10) students were selected using a stratified purposive sampling technique. This ensured representation of various student groups, including those with hearing impairments, language barriers, and other disabilities. Stratification allowed the study to explore the diverse needs and experiences of students who relied on interpretation services, capturing their unique perspectives on the effectiveness of these techniques. The relatively small and focused sample size was consistent with qualitative research principles, prioritizing depth of insight over breadth (Creswell, 2013). The purposive and stratified sampling techniques ensured that the study provided a comprehensive understanding of the phenomenon, highlighting the voices of those most directly impacted by interpretation techniques in inclusive education. Table 1: gives the details of the participants.

Table 1: Summary of Participants

Participant Group	Pseudonyms	Role/Description	Number of Participants
Educators	Educator E1, Educator E2, Educator E3	Lecturers actively involved in teaching in inclusive classrooms, working with diverse student populations.	3
Interpreters	Interpreter X, Interpreter Y	Facilitators of communication for students with hearing impairments, language barriers, or other challenges.	2
Students	Student S1 to Student S10	Diverse students with varying needs, including hearing impairments, language barriers, and other disabilities.	10
Total	-		15

3.3 Data Collection Methods

The study used multiple methods of data collection to ensure triangulation and enhance the reliability and validity of the findings. These methods included semi-structured interviews, focus group discussions (FGDs), and classroom observations.

Semi-structured interviews were conducted with the three lecturers and two interpreters to explore their experiences with interpretation techniques in inclusive classrooms. These interviews were designed to be flexible, allowing the interviewer to ask follow-up questions based on the responses of the participants. The interview questions focused on the types of interpretation techniques used, their perceived effectiveness, and the challenges faced in implementing these techniques (Adams, 2015). The semi-structured format allowed participants to express their views freely while still covering essential aspects of the study.

Ten students participated in a focus group discussion. The FGDs provided an opportunity for students to share their experiences with interpretation techniques and discuss how these techniques impacted their learning. The group setting facilitated the sharing of ideas, allowing participants to reflect on and build upon each other's responses (Krueger & Casey, 2015). The discussion aimed to capture the diverse experiences of students with disabilities and those from different linguistic backgrounds in relation to the interpretation services provided in their classrooms.

The researcher conducted direct observations of inclusive classrooms to assess the real-time application of interpretation techniques. An observation checklist was used to record the types of techniques employed during lessons, how frequently they were used, and how they supported students' participation and comprehension. The observations also allowed the researcher to note any challenges faced by interpreters or educators during the use of these techniques (O'Donoghue, 2007). This method provided valuable contextual data on the practical application of interpretation techniques.

3.4 Data Analysis

The data analysis for this study was conducted using qualitative methods, focusing on identifying patterns, themes, and insights from the participants' experiences and perspectives. A systematic and rigorous approach was adopted to ensure accuracy, depth, and credibility in analyzing the data.

3.4.1 Data Preparation

The initial step in the analysis involved preparing the collected data for review. Audio recordings from interviews and focus group discussions were transcribed verbatim to capture the exact words of participants, along with their tone and emphasis. These transcripts were carefully reviewed for accuracy and completeness. Additionally, notes taken during classroom observations and the review of institutional documents were organized into categories to complement the transcriptions. To maintain confidentiality, pseudonyms were assigned to all participants, ensuring their identities remained protected.

3.4.2 Thematic Analysis

The primary method of analysis employed in this study was thematic analysis, which is well-suited for exploring qualitative data. This approach allowed the researcher to systematically identify recurring patterns and themes across the data. Thematic analysis was conducted in several steps.

First, the researcher familiarized themselves with the data by reading and rereading the transcripts and observation notes. This step provided a holistic understanding of the participants' experiences and highlighted preliminary ideas. Next, the data were segmented into smaller units of meaning by assigning codes to specific phrases, sentences, or paragraphs. For instance, codes such as "challenges in interpretation," "Translation strategies," and "barriers to inclusivity" were assigned to relevant data segments.

Following this, the codes were grouped into broader themes that reflected the underlying patterns in the data. Key themes that emerged included "effectiveness of interpretation techniques," "challenges to inclusivity," "role of interpreters," and "recommendations for improvement." These themes were then reviewed and refined to ensure they accurately represented the data. Redundant or overlapping themes were merged, and sub-themes were created for more nuanced insights, such as breaking down "challenges to inclusivity" into "resource constraints," "policy gaps," and "cultural attitudes." Lastly, the themes were defined and named to clearly represent their significance and relevance to the study's research questions. Each theme was accompanied by a detailed description to ensure consistency in interpretation.

3.4.3 Triangulation

To enhance the validity of the findings, the researcher employed triangulation by cross-verifying data from multiple sources. This included comparing information obtained from interviews, focus group discussions, classroom observations, and document analysis. Triangulation ensured that the themes were well-supported and consistent across the different data sets, thereby strengthening the credibility of the findings.

3.4.4 Narrative Development

The final step involved synthesizing the identified themes into a coherent narrative that addressed the research questions. This narrative integrated the participants' experiences with insights from observations and document reviews. Direct quotes from participants were used to illustrate key findings and add authenticity to the analysis. Additionally, connections between individual experiences and institutional practices were highlighted, offering a comprehensive understanding of the phenomenon under study.

3.4.5 Reflexivity and Credibility

Throughout the data analysis process, the researcher maintained a reflexive approach, critically examining personal assumptions and biases to ensure objectivity. Regular consultations with peers and other educators were conducted to validate the coding process and interpretations, further enhancing the credibility of the findings.

3.5 Ethical Considerations

Ethical considerations were a fundamental part of this study, ensuring that the research process was conducted with respect, fairness, and integrity. These considerations addressed the rights and welfare of participants, as well as the ethical principles of research, including informed consent, confidentiality, and minimizing harm.

3.5.1 Informed Consent

To ensure that participants voluntarily agreed to take part in the study, an informed consent process was rigorously implemented. Each participant received a detailed information sheet explaining the purpose of the study, the procedures involved, and their rights as participants. This document outlined the voluntary nature of participation, the option to withdraw at any time

without penalty, and the confidentiality measures in place. Participants were given the opportunity to ask questions and seek clarification before signing consent forms. For participants with disabilities or language barriers, interpreters were available to explain the information and facilitate understanding, ensuring inclusivity in the consent process.

3.5.2 Confidentiality and Anonymity

The confidentiality of participants was a top priority. Pseudonyms were used to protect participants' identities in all data collection, analysis, and reporting phases. No identifiable information was linked to the data or included in the study's findings. All electronic data, including interview transcripts and observation notes, were securely stored on password-protected devices, and hard copies were kept in locked storage. Access to the data was limited to **the researchers**. Furthermore, findings were reported in a way that prevented the identification of specific individuals **or institutions**, ensuring anonymity.

3.5.3 Avoidance of Harm

The study was designed to minimize any potential harm to participants. Interviews and focus group discussions were conducted in safe and comfortable environments to ensure participants felt secure and at ease while sharing their experiences. Care was taken to frame questions in a sensitive and non-intrusive manner, avoiding any language that could cause discomfort or distress. Additionally, participants were informed that they could decline to answer specific questions or terminate their participation at any point.

3.5.4 Respect for Diversity and Inclusion

Given the focus on inclusive education, the study emphasized respect for diversity among participants. Efforts were made to ensure that participants from various backgrounds, including those with disabilities, felt valued and respected throughout the research process. Accommodations such as accessible venues, assistive technologies, and the presence of interpreters were provided as needed. This inclusive approach aligned with the study's objectives and the ethical principle of justice, ensuring equitable treatment of all participants.

3.5.5 Transparency and Feedback

Participants were informed that they would have the opportunity to review and validate the findings related to their contributions, ensuring transparency in the research process. They were also assured that a summary of the study's findings would be shared with them upon completion. This fostered trust and demonstrated respect for their involvement. Thus, ethical considerations were integral to every stage of this research, ensuring the study was conducted responsibly and respectfully. By adhering to principles of informed consent, confidentiality, avoidance of harm, and inclusion, the researcher safeguarded the rights and welfare of participants while maintaining the integrity of the study.

4. Findings

The findings of this study provide a revealed three key themes; namely types of of interpretations translation techniques, the effectiveness of the translation techniques, and the challenges encountered in translations. These findings were derived from semi-structured interviews with teacher educators and interpreters, focus group discussions with students, and classroom observations. Several key patterns emerged regarding the interpretation techniques employed, their effectiveness, challenges faced, and recommendations for improving these practices.

4.1 Types of Interpretation Techniques Used

On this overarching theme, the study identified several interpretation techniques employed by educators and interpreters to ensure inclusivity for all students, particularly those with disabilities or language barriers. These techniques included sign language, simplified language, peer assistance, visual aids, and bilingual instruction.

4.1.1 Sign Language Interpretation

Sign Language was one of the primary techniques used to support students with hearing impairments. Interpreters worked alongside educators to ensure that these students could participate fully in lectures and academic activities. The role of interpreters was not only to convey the verbal content in sign language but also to interpret the nuances of the classroom, including non-verbal cues, tone, and emotional expressions. As noted by Participant II,

My job is to bridge the communication gap for students who cannot hear. I interpret everything the lecturer says into sign language, but sometimes it's overwhelming because there are not enough of us to cover all classes. (Interpreter X, interview 2024).

This statement highlights a common challenge in sign language interpretation: the lack of sufficient trained interpreters, a situation which can limit the accessibility of education for students with hearing impairments. The need for more interpreters to ensure that all classes are adequately covered was a recurring theme throughout the interviews, pointing to the need for more resources and support in this area. (Isn't that a universal truth?)

4.1.2 Simplified Language

Another widely used technique was the adjustment of language by Teacher Educators, who often simplified their language or broke down complex concepts into more understandable parts. This approach was particularly beneficial for students who struggled with academic language, including those whose first language was not English. As Educator E2 shared,

I use simple language when teaching. For example, instead of using technical terms, I give examples that relate to everyday experiences. This helps students who struggle with English understand better. (Educator 2, Interview, 2024)

This method not only benefits students with limited English proficiency but also aids those with cognitive disabilities or learning difficulties, ensuring that all students can access the curriculum. Simplifying language by using familiar examples and avoiding jargon fosters a more inclusive learning atmosphere, where students feel less overwhelmed and more capable of grasping challenging content.

4.1.3 Peer Assistance

Peer networks played a critical role in informal interpretation and support. These peer networks were especially valuable for students who faced challenges in understanding course material or who encountered language barriers. Students were able to rely on their classmates for clarification and guidance, often in local languages, which further facilitated comprehension. Student S3 remarked,

When I don't understand something, my friends explain it to me in our local language. It's very helpful because they know how to explain it in a way I can relate to. (Student 3, FGDs, 2024)

Peer assistance, in this sense, became a key resource for enhancing understanding, as students were able to communicate more comfortably and expressively in their local languages. Additionally, peers who had a stronger grasp of certain concepts could bridge gaps in understanding, creating a collaborative learning environment that empowered students to support one another.

4.1.4 Visual Aids

Charts, diagrams, and multimedia presentations were frequently employed as complementary tools to reinforce verbal instruction. This approach was especially beneficial for students who faced auditory or linguistic challenges, as it provided an alternative means of accessing information. Visual aids helped to clarify abstract or complex ideas and catered to different learning styles. Educator E3 remarked,

I find that using visuals like charts and videos captures students' attention and helps them understand abstract concepts. (Educator 3, Interview 2024) {Very Obvious}

The use of multimedia presentations, such as videos and animations, was also identified as a helpful technique to make lessons more engaging and accessible. For students who had difficulty processing verbal information alone, visual aids provided a more concrete and engaging way to comprehend content, ensuring that learning remained dynamic and multifaceted.

4.1.5 Bilingual Instruction

To address language barriers, some educators employed bilingual instruction, using both English and local languages during their lessons. (What were those local languages and what was the subject??) This dual-language approach allowed students who were less proficient in English to follow lessons more easily and feel included in the learning process. Bilingual instruction also facilitated a deeper understanding of course material by connecting abstract concepts in English to familiar terms in students' local languages. As Student S7 commented,

When the lecturer switches to our local language, I feel included, and it makes the lesson easier to follow. (Student 7, FGDs 2024)

The use of local languages in academic settings helped bridge the gap between academic content and students' everyday linguistic experiences, providing a more inclusive environment where all students could participate and engage meaningfully with the material. This technique not only supported students with limited English skills but also acknowledged the importance of cultural and linguistic diversity in the classroom.

Briefly, the techniques outlined above—sign language, simplified language, peer assistance, visual aids, and bilingual instruction—reflect a commitment to inclusivity, with educators and interpreters working to meet the diverse needs of students. These strategies ensure that all students, regardless of their disabilities or language proficiency, can access the curriculum and fully participate in academic activities.

4.2. Effectiveness of Interpretation Techniques

The interpretation techniques employed in the study were generally effective in enhancing students' learning experiences, as they helped to address various learning barriers and facilitated greater inclusivity in the classroom. However, their overall impact varied significantly depending on several factors, including the availability of resources, the frequency of application, and the individual needs of students. While these techniques provided essential support for many learners, their effectiveness was sometimes hindered by inconsistent implementation and insufficient resources, which often created disparities in how students experienced and benefitted from them.

4.2.1 Sign Language Interpretation

Students with hearing impairments reported positive experiences when interpreters were available. The presence of an interpreter enabled these students to follow the lectures and participate more fully in classroom activities. As Student S1 shared,

The interpreter makes it possible for me to follow the lecture, but when they're not around; I feel left out and struggle to catch up. (Student 1, FGDs, 2024)

This statement illustrates the critical role that interpreters play in ensuring that students with hearing impairments can engage with the content and feel included in the learning process. However, the absence of an interpreter, whether due to resource limitations or scheduling conflicts, left these students feeling isolated and excluded, unable to fully access the material being presented. This highlights the importance of consistently providing interpreters and the need for more resources to ensure that sign language interpretation is available at all times.

4.2.2 Simplified Language

The use of simplified language was another technique that proved to be particularly effective for bridging language gaps. Educators who made an effort to simplify complex concepts or use relatable examples helped students better grasp the material, especially those who faced difficulties with academic language. As Student S4 explained,

I like it when the lecturer uses examples I can relate to. It makes things easier to understand, even if the subject is complicated. (Student 4, FGDs, 2024)

Simplifying language helped students connect new information to their own experiences, making abstract concepts more tangible and accessible. However, while this approach was generally effective, its success was often dependent on the educator's ability to simplify content without diluting key concepts. Some students found that while simplified language improved understanding, it sometimes compromised the depth of information being conveyed. (How do you substantiate this sweeping statement?)

4.2.3 Peer Assistance

Peer assistance was valued for its immediacy and relatability, with students benefiting from the support of classmates who could provide explanations in a way that was more familiar to them. This method was especially helpful for students who struggled to understand certain topics, as it provided an informal, supportive environment for learning. However, as Student S9 remarked,

My friends are a great help, but sometimes they also struggle to understand the topic, and that limits how much they can assist. (Student 9, FGDs, 2024).

This statement underscores a limitation of peer assistance—its effectiveness was often contingent upon the knowledge and understanding of the peers involved. When peers themselves struggled with the material, they could not provide the level of support needed, which sometimes led to confusion rather than clarity. Therefore, while peer assistance was valuable, its impact was variable and often dependent on the academic abilities of the students offering help.

4.2.4 Visual Aids

The use of visual aids, such as charts, diagrams, and videos, was widely appreciated for its effectiveness in improving students' comprehension. Visual aids helped to reinforce verbal explanations, providing students with alternative ways of processing information, particularly for those who faced auditory or linguistic challenges. Student S6 noted,

Videos and charts make the topics interesting and easier to grasp, especially when the lecturer explains them alongside the visuals. (Student 6, FGDs, 2024)

This feedback reflects how multimedia tools can enhance engagement and understanding, particularly for visual learners. The combination of verbal and visual cues allowed students to better conceptualize abstract ideas, making complex topics more accessible. However, the availability and quality of visual aids varied across classes, and in some instances, students noted that the absence of these resources hindered their ability to fully engage with the material.

4.2.5 Bilingual Instruction

Bilingual instruction was highly effective for students with limited English proficiency, as it helped bridge the language gap and made the material more accessible. (What is the official medium of instruction of the program/institution?) The use of both English and local languages in the classroom allowed students to understand key concepts more easily and feel included in the learning process. As Student S7 observed,

When the lecturer uses both English and our local language, I understand much better and feel more confident participating in class. (Student 7, FGDs, 2024). (You have quoted the same student differently on page 15)

This dual-language approach helped students who were less proficient in English to follow the lecture and feel more comfortable expressing themselves. However, the effectiveness of bilingual instruction was contingent upon the educator's proficiency in both languages and their ability to switch between languages fluidly. In some instances, students reported that the use of local languages was inconsistent or limited, which reduced the overall impact of this approach.

Despite the successes of these techniques, inconsistencies in their application and shortages of resources often undermined their effectiveness. For example, the availability of sign language interpreters was sometimes limited due to a lack of qualified professionals, and the use of visual aids depended on the availability of equipment and technological support. Furthermore, the frequency of application of certain techniques, such as bilingual instruction or simplified language, varied across educators, leading to differences in how effectively students were supported. These inconsistencies highlighted the need for more structured and widespread implementation of inclusive teaching practices, as well as the need for greater investment in resources to ensure that all students, regardless of their individual needs, had equal access to the learning experience.

4.3. Challenges Encountered

The study highlighted several challenges that educators and interpreters faced in implementing interpretation techniques, which impeded the full potential of these strategies in creating an inclusive learning environment. These challenges were multi-faceted, ranging from resource limitations to workload pressures, and cultural perceptions that impacted both educators' and students' attitudes toward inclusive education. (What were those attitudes? And were they negative or positive?) Each of these challenges posed significant barriers to the effective use of interpretation techniques, which, when addressed, could lead to better outcomes for students with diverse learning needs.

4.3.1 Limited Resources

A recurring issue throughout the study was the insufficient number of interpreters and the lack of essential assistive technologies to adequately support students. This shortage of resources made it difficult to maintain consistent and effective support for students with hearing impairments and other learning challenges. Participant I2 expressed the urgency of addressing these gaps, stating,

We urgently need more interpreters and equipment like hearing aids or captioning tools to support students effectively. (Educator 3, Interview, 2024).

This shortage often led to situations where students with hearing impairments were unable to fully engage with lessons, particularly in larger classes where the demand for interpreters was greater than the available supply. Additionally, the lack of assistive technologies such as hearing aids, captioning tools, or audio amplification devices further compounded the difficulties faced by these students. As a result, educators and interpreters struggled to ensure that all students received equal access to the curriculum, highlighting the need for greater investment in these resources to facilitate inclusion.

4.3.2 Workload and Time Constraints

Educators also faced significant challenges in balancing their regular workload with the additional effort required to adapt lessons for inclusive classrooms. The need to prepare and deliver lessons that catered to students with diverse needs often placed an extra burden on teachers, leading to stress and burnout. Educator E1 shared,

Preparing for inclusive classrooms takes a lot of time. You have to plan for visuals, simplify content, and sometimes even learn basic sign language. It's rewarding but exhausting. (Educator 1, FGD, 2024)

This sentiment reflected the reality for many educators who, despite their dedication to creating an inclusive environment, found the preparation and adaptation of lessons time-consuming and overwhelming. The need to incorporate various teaching methods, such as creating visual aids, simplifying complex language, and learning alternative communication strategies like sign language, added additional layers of complexity to their already demanding responsibilities. The

time constraints and workload pressures often resulted in the inconsistent application of inclusive teaching practices, which affected the overall quality of student support.

4.3.3 Lack of Standardization

Another challenge that emerged was the lack of standardized guidelines for inclusive teaching within the institution. Without a clear, institution-wide framework for inclusive practices, educators were left to develop their own methods for supporting students, leading to inconsistencies across classes and departments. Educator E3 observed,

Each lecturer does things differently. Some focus on visuals, others on language, but there's no clear standard we all follow. (Educator 3, Interview, 2023)

This lack of standardization resulted in a fragmented approach to inclusion, where students received different levels of support depending on the individual educator's knowledge, skills, and commitment to inclusivity. The absence of institutional guidelines or a coordinated strategy for inclusive teaching meant that some students benefitted from well-structured support, while others struggled due to the ad hoc nature of the accommodations provided. Establishing a unified set of standards and practices could ensure more equitable and effective support for all students.

4.3.4 Language Barriers

Managing linguistic diversity in classrooms with students from varied language backgrounds posed another significant challenge. For many educators, balancing multiple languages during a lesson, especially in classrooms with students who were not fluent in English, was difficult. Participant II commented,

Balancing multiple languages in a single session is tough, especially when there are no additional resources to support us. (Educator 1, Interview, 2024)

This challenge was particularly prevalent in multilingual environments, where the lack of supplementary resources, such as bilingual materials or translation services, made it difficult for educators to effectively communicate with all students. Students with limited English proficiency often found themselves at a disadvantage, as they struggled to keep up with the lesson content

and fell behind in their understanding. The lack of sufficient linguistic support further widened the gap in educational outcomes for students from diverse language backgrounds.

4.3.5 Cultural Attitudes

Cultural attitudes toward disabilities and inclusive education also posed a barrier to the successful implementation of interpretation techniques. Some students and staff held negative perceptions about disabilities, which created an unwelcoming environment for students with special needs and discouraged the full integration of inclusive practices. Student S5 shared,

Not everyone understands the challenges we face. Some people think students like me shouldn't even be here. (Student 5, FGDs, 2024)

These cultural attitudes often led to a lack of empathy or understanding from peers and staff, which contributed to the marginalization of students with disabilities. Negative stereotypes and stigmatization further compounded the challenges faced by these students, making it harder for them to feel accepted and valued within the academic community. Overcoming these cultural barriers requires not only the implementation of inclusive techniques but also a shift in attitudes towards disability and a greater emphasis on fostering a supportive and respectful learning environment for all students.

5. Discussion

This section discusses the findings of the study, offering explanations, comparing them with existing literature, and discussing the implications. Furthermore, it evaluates the limitations of the study, presenting both its strengths and weaknesses, while also suggesting areas for future research.

5.1 Interpretation techniques and their effectiveness

The study found that the use of sign language interpreters was a common technique for supporting students with hearing impairments. While this technique allowed students with hearing disabilities to follow lectures, the study revealed its effectiveness was limited by the inconsistent availability of trained interpreters. This observation aligns with previous studies that highlight the global shortage of trained sign language interpreters, especially in sub-Saharan

Africa (Marschark & Knoors, 2012). Specifically in Zambia, the limited pool of qualified interpreters poses a significant challenge to fully realizing the potential of sign language as an inclusive tool. As highlighted by UNESCO (2017), the availability of well-trained interpreters is crucial for effective communication and participation in education for students with hearing impairments.

Moreover, simplified language was utilized to make complex academic concepts more accessible to students with limited proficiency in English. This strategy proved particularly effective for students from linguistically diverse backgrounds, as it reduces cognitive load and aids in better comprehension of core concepts (Sweller, 2011). Indeed, this finding aligns with research supporting the use of language modification as an essential strategy to enhance accessibility in diverse educational settings (Sweller, 2011). In multilingual contexts like Zambia, where English is often not the first language for many students, simplified language plays a critical role in bridging linguistic gaps.

Additionally, peer assistance networks were employed to support students with disabilities or language challenges. Although peer assistance proved helpful in immediate situations, its effectiveness varied depending on the expertise of the assisting peers. This limitation is echoed in existing literature, which suggests that peer assistance works best when peers possess the necessary knowledge and skills (Kamens, 2019). The effectiveness of this technique, therefore, depends significantly on the training and preparedness of students to support their peers in academic tasks. Furthermore, Kamens (2019) emphasizes that peer-mediated learning should be structured and supported with proper training to ensure its success.

In parallel, visual aids, such as charts, diagrams, and multimedia presentations, were frequently used to complement verbal instructions. The study found that these aids significantly enhanced comprehension, particularly for students with limited language proficiency or those who are visual learners. Notably, the importance of visual aids in improving learning outcomes has been well-documented (Sweller, 2011), especially in supporting learners with diverse learning styles. As reinforced by research from Mayer (2009), visual aids help reduce cognitive load by providing visual representations of abstract concepts, thus improving retention and understanding.

Lastly, bilingual instruction, which incorporates local languages alongside English, emerged as particularly beneficial for students with limited English proficiency. The study emphasized that bilingual education helped students grasp complex academic material by providing explanations in their native languages. This approach resonates with research supporting bilingual education as a strategy to improve learning outcomes in multilingual contexts (Cummins, 2000). In the Zambian context, where multiple languages are spoken, bilingual instruction not only facilitates curriculum accessibility but also advances the broader goals of inclusivity in education.

5.2. Challenges Encountered

The study identified several challenges that impeded the full implementation of interpretation techniques. These included limited resources, time constraints, lack of standardized practices, linguistic diversity, and negative cultural attitudes toward students with disabilities.

A key challenge was the shortage of trained interpreters and the lack of assistive technologies, which significantly constrained the effectiveness of interpretation techniques. This finding aligns with other studies that identify resource constraints as a major barrier to implementing inclusive education (UNICEF, 2017). Specifically, the lack of funding and infrastructure to support these techniques creates significant hurdles in establishing a fully inclusive learning environment.

Moreover, educators reported significant time constraints when adapting lessons to meet the needs of students with disabilities or language challenges. The time required to modify materials, provide additional support, and ensure inclusivity often added to their already heavy workload. This challenge is well-documented in literature. Loreman (2007) highlights the pressure placed on educators in inclusive settings, noting that without adequate support and time allocation, teachers may struggle to provide the necessary accommodations for all students. Therefore, systemic support, such as smaller class sizes and the addition of teaching assistants, is crucial to alleviate the burden on educators.

In addition, the absence of standardized guidelines for implementing interpretation techniques led to inconsistent practices across different departments. This lack of uniformity undermines inclusivity, as Florian (2014) emphasizes the importance of clear policies and guidelines in

fostering inclusive practices. Without such frameworks, the effectiveness of interpretation techniques can vary, resulting in unequal learning experiences for students.

Furthermore, the linguistic diversity of the student population posed considerable challenges in terms of communication and curriculum accessibility. In a multilingual country like Zambia, where students often speak several local languages in addition to English, this diversity creates additional complexities for educators and interpreters. This observation aligns with Cummins (2000), who argues that multilingual education strategies must account for the variety of languages spoken by students to ensure equal access to learning opportunities.

Lastly, cultural attitudes toward students with disabilities were identified as a significant barrier to inclusivity. Negative attitudes and stigmas about disability can undermine efforts to create an inclusive educational environment (Hughes & Mertens, 2014). In Zambia, as in many other contexts, these cultural attitudes contribute to a lack of understanding and support for students with disabilities, thereby making it more difficult to implement inclusive education practices effectively.

6. Conclusion

This study has shed light on the implementation of interpretation techniques in fostering inclusivity within educational settings, particularly in contexts marked by linguistic diversity and resource limitations. The findings emphasise both the **promise** and challenges of these techniques. While methods such as sign language interpretation, simplified language, peer assistance, visual aids, and bilingual instruction have demonstrated their potential to enhance learning experiences, their effectiveness is often hindered by systemic challenges, including limited resources, inconsistent practices, and cultural barriers. The recurring themes of resource scarcity and negative cultural attitudes highlight the pressing need for structural reforms and greater investments in inclusive education. Addressing these challenges requires a comprehensive approach: expanding the pool of trained interpreters, standardizing inclusive teaching practices, and fostering a culture of acceptance and equity within educational institutions. Equally, empowering educators through professional development and providing the necessary tools and support will ensure that inclusive practices are not only implemented but sustained.

7. Limitations of the Study

While the study provides valuable insights, there are several limitations that should be considered when interpreting the findings. To begin with, the study was limited to Kitwe College of Education, restricting its generalizability (Your title suggests generalizing) to other higher education institutions in Zambia or elsewhere. If a larger sample size and a more diverse range of institutions had been included, the findings would have offered a broader perspective on inclusive education practices, enhancing their applicability across different contexts.

Additionally, although the study incorporated classroom observations and included the voices of students alongside educators and administrators, certain biases may still have influenced the findings. Self-reported data, for instance, may reflect what participants believe is expected or socially acceptable. While the inclusion of student perspectives added depth to the findings, future research could further enrich these insights by employing a broader range of data collection methods, such as longitudinal studies or focus group discussions, to capture more nuanced experiences. Furthermore, the study's scope was limited to identifying challenges and effectiveness within the observed context, without a detailed exploration of systemic factors such as institutional policies or broader socioeconomic conditions that might influence inclusive education practices. Expanding the focus to include these systemic factors would provide a more comprehensive understanding of the barriers to and facilitators of inclusive education.

In brief, while the study's integration of classroom observations and diverse participant voices strengthens its contributions, addressing these limitations in future research would enhance the scope, depth, and generalizability of its findings.

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