

Unveiling the barriers to academic achievement among learners with hearing impairment in Tanzania: Experience from Njombe Viziwi Secondary School

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ABSTRACT

This study explored barriers to academic achievement among learners with hearing impairment in Tanzania. The study was motivated by the recognition that academic difficulties among learners with hearing impairment may arise not only from hearing loss itself but also from communication, instructional, technological, interpersonal, assessment, and environmental conditions within the school. The study was informed by Social Model of Disability. A qualitative research approach guided by a phenomenological design was employed to obtain an in-depth understanding of participants' lived experiences and interpretations of barriers affecting learning and academic achievement. The study was conducted at Njombe Viziwi Secondary School, which was purposively selected because it provides secondary education to learners with hearing impairment. Participants were purposively selected from learners with hearing impairment secondary schools, teachers, and school administrators based on their direct experience and knowledge of the phenomenon, with recruitment guided by data saturation. Data were collected through semi-structured in-depth interviews, including appropriate communication support such as Tanzanian Sign Language where necessary. The interviews explored participants' experiences concerning communication, classroom participation, teaching practices, learning resources, assistive technologies, teacher preparedness, assessment, learning environments, and institutional support. Data were analysed thematically using Braun and Clarke's six-phase framework, while ethical principles of informed consent, voluntary participation, confidentiality, anonymity, privacy, and the right to withdraw were observed. The findings generated five main interconnected barriers: limited access to effective communication and sign language, inadequate learning resources and assistive technology, limited teacher competence in inclusive pedagogy, communication barriers with peers and teachers, and inaccessible assessment and learning environments. The findings demonstrate that learners may understand academic content but still experience difficulty accessing instruction, participating in classroom interaction, communicating their knowledge, and demonstrating achievement when educational practices remain predominantly auditory or insufficiently adapted. The study therefore concludes that meaningful inclusion cannot be achieved through physical placement alone. It requires accessible communication, competent inclusive pedagogy, adequate assistive technologies and visual resources, supportive peer interaction, and accessible classroom and assessment environments. The study recommends an integrated institutional response involving strengthened sign-language support, improved provision and utilisation of assistive technologies, continuous teacher professional development, inclusive peer interaction, accessible assessment procedures, improved classroom conditions, adequate funding, and regular monitoring to ensure that inclusive education is translated into everyday practice and meaningful academic participation.

Keywords: Academic Achievement, Barriers, Hearing Impairment, Learners, Tanzania

I. INTRODUCTION

Academic achievement is a fundamental indicator of the extent to which learners benefit from educational opportunities, yet learners with hearing impairment often encounter barriers that extend beyond the effects of hearing loss itself. Meaningful academic participation requires accessible communication, effective teaching practices, appropriate learning resources, supportive teachers, and an environment that enables learners to interact effectively with the curriculum (Costantine et al., 2025). International frameworks, including the Salamanca Statement, the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), and Sustainable Development Goal 4 (SDG 4), emphasise equitable access to quality education for all learners regardless of disability (Elfert, 2015; Huang et al., 2020). For learners with hearing impairment, communication is particularly important because difficulties in accessing spoken instruction may affect classroom interaction, curriculum access, literacy development, and academic participation (Schafer & Wolfe, 2010). Sign language has consequently been recognised as an important language of communication and instruction for deaf learners, while assistive technologies such as hearing aids, FM/DM systems, speech-to-text applications, captioning, and visual learning resources can further support access to

instructional information (Senjam & Manna, 2024). However, the availability of such mechanisms does not automatically translate into academic achievement. Their educational contribution depends on teacher competence, appropriate pedagogical integration, accessibility, functionality, and the broader learning environment (Borg et al., 2012; Senjam & Manna, 2024). Therefore, academic achievement among learners with hearing impairment needs to be understood in relation to the educational conditions and barriers surrounding the learner rather than being attributed to hearing impairment alone.

In Tanzania, the government has demonstrated commitment to improving educational opportunities for learners with disabilities through the Persons with Disabilities Act of 2010, the National Strategy on Inclusive Education (2009–2017), and the Education and Training Policy of 2014, which advocate equitable access to quality education (Kapinga, 2014). The expansion of special and inclusive education has consequently increased opportunities for learners with hearing impairment to attend secondary schools (Costantine et al., 2026). Nevertheless, access to schooling does not necessarily guarantee equitable academic achievement. Previous studies have identified several challenges affecting the education of learners with hearing impairment, including shortages of teachers proficient in Tanzanian Sign Language, inadequate teaching and learning materials, limited assistive technologies, insufficient teacher professional development, and weak institutional support (Kapinga, 2014; Mbunda, 2017). Other evidence indicates that unsuitable classroom environments, limited access to hearing aids and FM systems, inadequate teacher preparation, and financial constraints may further restrict learning opportunities for learners with hearing impairment (Jullu & Wandela, 2025; Ndibalema, 2025). Similarly, studies on assistive technology indicate that its educational benefits depend not simply on availability but also on appropriate selection, functionality, teacher involvement, technical support, and effective integration into teaching and learning (Borg et al., 2012; Senjam & Manna, 2024). These conditions suggest that the academic difficulties experienced by learners with hearing impairment may emerge from multiple and interconnected barriers involving communication, teachers, instructional practices, resources, technology, classroom environments, and institutional support.

Despite the growing body of literature, an important empirical gap remains. Existing Tanzanian studies have largely focused on broad issues such as inclusive education implementation, educational policy, teacher attitudes, access to education, infrastructure, and general challenges affecting learners with disabilities (Mutatembwa et al., 2024; Omoro & Possi, 2024). Other studies have examined particular issues, including sign language instruction, teacher competence, classroom communication, and assistive technology (Kapinga, 2014; Mbunda, 2017; Ntombela, 2022). Although these studies provide important evidence, they give comparatively limited attention to how multiple barriers interact within the everyday school environment to influence the academic achievement of learners with hearing impairment. In particular, there is insufficient context-specific evidence on how communication barriers, teacher preparedness, instructional practices, learning resources, assistive technology, assessment practices, classroom participation, and institutional conditions collectively shape learners' academic experiences (Mbunda, 2017). Furthermore, previous research has provided limited evidence from specialised secondary schools for learners with hearing impairment concerning how learners themselves experience and navigate these barriers. Thus, the key knowledge gap is not simply whether barriers to education exist, but how specific and interconnected barriers are experienced within the school context and how they constrain learners' opportunities to achieve academically (Ndibalema, 2025). Addressing this gap requires an investigation that brings together the instructional, communicative, technological, environmental, and institutional dimensions of learners' educational experiences rather than examining these factors in isolation.

Against this background, Njombe Viziwi Secondary School provides an important context for examining the barriers that may influence academic achievement among learners with hearing impairment. A school-specific investigation can provide a deeper understanding of the actual conditions under which learners access instruction, communicate with teachers and peers, use learning resources and assistive technologies, participate in classroom activities, undertake assessments, and pursue academic goals (Msumanje, 2025).

The study therefore focuses on unveiling the barriers that may constrain academic achievement rather than assuming that hearing impairment itself is the direct cause of poor academic outcomes. The limited empirical understanding of how interconnected communication, instructional, teacher-related, technological, resource-related, environmental, and institutional barriers are experienced by learners with hearing impairment and how these barriers affect their academic achievement (Shafer et al., 2020) within a Tanzanian secondary-school context. This gap is particularly important because evidence concerning general inclusive education or disability cannot fully explain the experiences of learners in specialised schools where communication needs, instructional arrangements, and learning environments may differ. Therefore, the study seeks to generate context-specific evidence that can contribute to improved teacher preparation, instructional practices, provision and utilisation of learning resources and assistive technologies, school-level support, and educational interventions aimed at improving academic opportunities for learners with hearing impairment in Tanzania.

1.1 Research Objective

The focus of this study was to examine the barriers that contribute to academic underachievement among learners with hearing impairment at Njombe Viziwi Secondary School in Tanzania,

II. LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Social Model of Disability

The study is informed by the Social Model of Disability that provides the most appropriate framework for understanding the Barriers to Academic Achievement among Learners with Hearing Impairment in Tanzania. The model emerged from the disability rights movement in the 1970s, particularly through the work of British disability activist Mike Oliver, who formally developed and popularised the term Social Model of Disability in 1983, drawing substantially on earlier ideas developed by the Union of the Physically Impaired Against Segregation (UPIAS) in 1976. The model was developed in response to the traditional medical model, which tends to locate disability primarily within an individual's impairment.

The central assumption is that impairment and disability are not synonymous: impairment refers to a person's physical, sensory, or other condition, whereas disability is substantially produced when social, institutional, environmental, communicative, and attitudinal barriers prevent the person from participating fully in society. Applied to this study, the model assumes that hearing impairment alone should not be regarded as the direct explanation for learners' academic difficulties; rather, academic disadvantage may emerge when the school environment fails to provide accessible communication, appropriate instructional practices, competent teachers, suitable learning materials, functional assistive technologies, accessible assessment procedures, supportive classroom environments, and adequate institutional support. Practically, the model therefore directs the study to examine how learners with hearing impairment experience communication barriers, such as inadequate access to Tanzanian Sign Language; teacher-related barriers, including limited competence in communicating and teaching deaf learners; instructional barriers, such as teaching approaches that depend heavily on spoken communication; resource and technological barriers, including inadequate or poorly functioning assistive devices and visual learning materials; environmental barriers, including classroom arrangements that restrict visibility and interaction; assessment barriers, where assessment procedures may not adequately accommodate learners' communication needs; and institutional barriers, such as inadequate personnel, support services, or implementation of inclusive-education provisions. Importantly, the model does not imply that every learner with hearing impairment will experience these barriers in the same way; instead, its application to this phenomenological study is to explore how learners themselves experience, interpret, and navigate these barriers in their everyday schooling and how such experiences influence their opportunities to participate, access the curriculum, learn, and achieve academically. Thus, the model shifts the analytical focus from asking what is "wrong" with the learner to examining what barriers exist within the educational environment, how those barriers are experienced, and how removing or reducing them could improve academic opportunities for learners with hearing impairment.

2.2 Empirical Review

Empirical studies have consistently shown that learners with hearing impairment experience multiple barriers that can constrain academic achievement, particularly where communication, teaching practices, learning resources, and school support are inadequate. Studies in Tanzania have reported shortages of teachers proficient in Tanzanian Sign Language, inadequate teaching and learning materials, limited assistive technologies, and insufficient professional preparation among teachers (Kapinga, 2014; Mbunda, 2017). Evidence further indicates that classroom conditions, limited access to hearing aids and FM systems, inadequate teacher competence, and financial constraints can restrict learners' opportunities to access instruction effectively (Jullu & Wandela, 2025; Ndibalema, 2025). Similarly, international evidence suggests that assistive technologies can improve access to educational information, but their presence alone does not necessarily translate into improved academic outcomes because their contribution depends on functionality, accessibility, teacher competence, technical support, and integration into classroom practices (Borg et al., 2012; Senjam & Manna, 2024). These findings are important because they challenge explanations that locate academic difficulties primarily within learners' hearing impairment and instead point to barriers created by the educational environment. However, much of the existing evidence tends to examine barriers separately, for example, focusing on sign language, teacher competence, assistive technology, or inclusive education, making it difficult to understand how these barriers interact in learners' everyday academic experiences. Moreover, studies addressing learners with disabilities more broadly may not adequately capture the distinctive communication and instructional demands of learners with hearing impairment. Thus, while existing studies establish the existence of significant

barriers, they provide less explanation of how multiple barriers simultaneously restrict classroom participation, curriculum access, learning, and ultimately academic achievement.

The Tanzanian literature also reveals a contextual and experiential gap concerning how learners with hearing impairment themselves experience these interconnected barriers within secondary-school environments. Studies such as Mutatembwa et al. (2024) and Omoro and Possi (2024) have contributed evidence on inclusive education, policy implementation, and educational challenges, while Kapinga (2014), Mbunda (2017), and Ntombela (2022) have examined issues related to sign language, teacher competence, and communication. Nevertheless, relatively limited empirical attention has been given to the combined influence of communication barriers, teacher preparedness, instructional practices, learning materials, assistive technology, classroom environment, assessment practices, and institutional support on learners' academic experiences in specialised secondary schools. This limitation is particularly significant because the availability of educational provision does not necessarily mean that learners experience effective access to learning or equal opportunities for academic achievement. The existing evidence therefore leaves unanswered questions about which barriers learners encounter in their daily schooling, how these barriers are interconnected, and how learners navigate them while pursuing academic goals (Omoro & Possi, 2024). In this respect, Njombe Viziwi Secondary School provides a context in which these experiences can be examined in depth. The present study consequently extends previous research by shifting attention from the general existence of educational barriers to learners' lived experiences of how interconnected barriers within communication, instruction, resources, technology, classroom participation, assessment, and institutional support constrain their academic achievement. Such evidence can provide a more context-sensitive understanding of the educational conditions surrounding learners with hearing impairment and inform interventions aimed at improving their academic opportunities in Tanzania.

III. METHODOLOGY

3.1 Research Approach

This study adopted a qualitative research approach to explore the barriers to academic achievement among learners with hearing impairment at Njombe Viziwi Secondary School in Tanzania. The qualitative approach was appropriate because the study sought to obtain an in-depth understanding of how learners with hearing impairment, teachers, and school administrators experience and interpret the educational conditions that may constrain academic achievement. Rather than measuring barriers numerically, the study focused on participants' lived experiences, perceptions, meanings, and explanations regarding communication, teaching and learning practices, teacher preparedness, learning resources, assistive technologies, classroom environments, assessment practices, and institutional support. In practical application, the approach enabled the researcher to explore how these barriers are experienced in everyday school life, how they affect learners' access to instruction and classroom participation, and how learners and teachers respond to or navigate such challenges. The approach was therefore suitable for generating rich contextual evidence on the educational barriers surrounding learners with hearing impairment rather than attributing academic difficulties solely to hearing impairment itself.

3.2 Research Design

The study employed a phenomenological research design because phenomenology focuses on understanding and interpreting the meanings individuals attach to their lived experiences of a particular phenomenon. In this study, the phenomenon was the experience of barriers to academic achievement among learners with hearing impairment. The design enabled the researcher to explore how learners experience communication difficulties, teaching practices, availability and use of learning resources, assistive technology, classroom interaction, assessment procedures, and institutional support in their everyday educational lives. Teachers and school administrators were included to provide complementary perspectives on the conditions that influence learners' academic experiences. Practically, the phenomenological design allowed the researcher to move beyond identifying whether barriers exist to understanding how such barriers are experienced, how they interact, and how learners perceive their influence on learning and academic achievement. This design was particularly relevant because the study sought to give prominence to the voices and experiences of learners with hearing impairment within their actual school context.

3.3 Study Area

The study was conducted at Njombe Viziwi Secondary School in Njombe Region, Tanzania. The school was purposively selected because it provides secondary education to learners with hearing impairment and therefore offers a relevant setting for examining the educational barriers experienced by this group of learners. The school provided an appropriate context for exploring how communication, instructional practices, teacher preparedness, learning materials, assistive technologies, classroom conditions, assessment practices, and institutional arrangements influence

learners' educational experiences. In practical terms, the school enabled the researcher to examine these barriers within the natural setting in which teaching and learning take place and to obtain firsthand accounts from learners and education personnel who interact with these conditions on a daily basis. Focusing on one specialised secondary school also allowed the researcher to develop a contextually rich and detailed understanding of the phenomenon rather than generalising statistically across schools. The study area was therefore appropriate for generating in-depth evidence about the specific educational realities surrounding learners with hearing impairment in Tanzania.

3.4 Target Population

The target population comprised teachers, and school administrators at Njombe Viziwi Secondary School. Teachers were included because they interact directly with learners during teaching and learning and possess practical knowledge concerning communication practices, instructional strategies, availability and use of learning resources, assessment, and challenges encountered in supporting learners with hearing impairment. School administrators were included because they provide information concerning institutional support, staffing, resources, school-level arrangements, and measures undertaken to address barriers affecting learners' academic achievement. Collectively, these participants provided complementary perspectives that enabled the researcher to develop a deeper understanding of the barriers experienced within the school environment.

3.5 Sampling Procedure and Sample Size

The study employed purposive sampling to select participants who had direct experience and relevant knowledge of the educational experiences of learners with hearing impairment. Participants were selected from among learners with hearing impairment, teachers, and school administrators based on their ability to provide rich and relevant information about barriers to academic achievement. Learners were selected to represent firsthand experiences of the phenomenon, while teachers and administrators were selected to provide complementary perspectives concerning instructional, communicative, resource-related, technological, environmental, assessment, and institutional barriers. The sample size was determined progressively according to the principle of data saturation, whereby participants were recruited until further data collection no longer generated substantially new experiences, meanings, or themes relevant to the study. This approach was appropriate for phenomenological inquiry because the purpose was not statistical representation but obtaining sufficiently rich descriptions of the phenomenon. Practically, purposive sampling enabled the researcher to engage participants who could provide detailed accounts of the actual barriers encountered in the school and how these barriers influence learners' participation, access to instruction, learning experiences, and academic achievement.

3.6 Data Collection

Data were collected primarily through semi-structured in-depth interviews with selected learners with hearing impairment, teachers, and school administrators. The interviews provided participants with an opportunity to describe their experiences in their own terms while allowing the researcher to probe issues emerging from their responses. With learners, the interviews focused on their experiences of communication with teachers and peers, classroom participation, teaching and learning practices, availability and use of learning materials, assistive technologies, assessment, learning difficulties, and institutional support. Where necessary, interviews with learners were facilitated through an appropriate communication mode, including Tanzanian Sign Language, with suitable support to ensure that participants could express their experiences clearly. Teachers were asked about their experiences in teaching learners with hearing impairment, including their preparedness, communication competence, instructional practices, learning resources, assessment approaches, and challenges encountered. School administrators were interviewed concerning school-level support, staffing, resources, assistive technologies, teacher development, and institutional strategies for addressing barriers to learners' academic achievement. The semi-structured format ensured consistency across participants while allowing the researcher to explore unexpected experiences and context-specific issues in depth.

3.7 Data Analysis

The collected qualitative data were analysed using thematic analysis guided by Braun and Clarke's (2006) six-phase framework: familiarisation with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. The analysis began with repeated reading or viewing of interview transcripts to gain familiarity with participants' accounts, followed by systematic coding of statements describing experiences of barriers to academic achievement. Related codes were subsequently grouped into broader themes, which could include communication barriers, teacher-related barriers, instructional barriers, learning-resource barriers, assistive-technology barriers, environmental barriers, assessment barriers, and institutional barriers. The analysis also examined how these barriers interacted and how participants perceived their influence on learners' classroom participation, curriculum access, learning experiences, and academic achievement. In keeping with the

phenomenological orientation, interpretation focused not merely on identifying the existence of barriers but on understanding the meanings and lived experiences participants attached to those barriers. The analysis therefore generated contextualised evidence that could inform improvements in teacher preparation, communication practices, instructional strategies, learning resources, assistive technology, assessment, and institutional support for learners with hearing impairment.

3.8 Ethical Considerations

The study observed key ethical principles throughout the research process, including informed consent, voluntary participation, confidentiality, anonymity, privacy, and the right to withdraw. Participants were informed about the purpose of the study, the procedures involved, the expected nature of their participation, and the intended use of the information before consent was obtained. Particular attention was given to ensuring that learners with hearing impairment could understand the study information and communicate their consent through an accessible communication mode. Participation was entirely voluntary, and participants were informed that they could decline to answer any question or withdraw from the study without negative consequences. Confidentiality and anonymity were maintained through the use of participant codes or pseudonyms rather than names in transcripts and reporting. Interviews were conducted in settings that provided appropriate privacy, while recorded data and transcripts were securely stored and accessed only for research purposes. These measures were particularly important because the study explored participants' personal experiences of educational barriers and academic challenges. Ensuring accessible and respectful participation helped create a safe environment in which learners with hearing impairment, teachers, and administrators could freely describe their experiences, thereby strengthening the credibility, authenticity, and trustworthiness of the findings.

IV. FINDINGS & DISCUSSION

4.1 Findings

4.1.1 Barriers to Academic Achievement among Learners with Hearing Impairment

Understanding barriers to academic achievement among learners with hearing impairment is crucial because it helps educators, schools, and policymakers identify why these students struggle academically and what specific supports they need. Barriers such as limited access to instructional content, insufficient sign language interpretation, lack of assistive technologies, communication breakdowns, and negative attitudes can affect learning, participation, and confidence. When these challenges are recognized early, schools can provide appropriate accommodations, improve learning outcomes, and promote equity—ensuring learners with hearing impairment are not disadvantaged but are given fair opportunities to succeed.

Table 1

Barriers to Academic Achievement among Learners with Hearing Impairment

Main themes	Codes	Participants responses
Limited access to effective communication and sign language	Limited sign-language skills; inadequate interpretation; communication difficulties; lack of accessible instructions	Sometimes the teacher explains the lesson orally, but I cannot understand everything unless someone uses sign language. When there is no interpreter, it becomes difficult for me to follow what is being taught.
Inadequate learning resources and assistive technology	Shortage of hearing aids; lack of captioning; inadequate visual materials; limited assistive devices	We do not always have the devices we need to support learning. Some lessons would be easier if we had more visual materials and assistive technology.
Limited teacher competence in inclusive pedagogy	Limited teacher knowledge; inappropriate teaching methods; inadequate adaptation; insufficient inclusive training	Some teachers know that we have hearing difficulties, but they are not always able to change their teaching methods. Teachers need more training on how to teach learners with hearing impairment effectively
Communication barriers with peers and teachers	Peer interaction difficulties; social isolation; limited classroom participation; misunderstanding	It is sometimes difficult to participate in group discussions because most students communicate by speaking. I may know the answer, but communicating with other students makes it difficult to contribute."
Inaccessible assessment and learning environments	Auditory-based instructions; unsuitable assessment; classroom noise; poor seating arrangements; limited visual access	During examinations, instructions given orally can be difficult for us to follow." Where the classroom is noisy or I cannot see the teacher clearly, following the lesson becomes difficult

Limited Access to Effective Communication and Sign Language: The first theme was Limited access to effective communication and sign language as an important barrier to academic achievement among learners with hearing impairment. This is because communication is central to understanding instruction, asking questions, participating in classroom discussions, completing learning activities, and interacting with teachers and peers. When learners have inadequate access to sign language, interpreters, or other appropriate communication support, they may struggle to understand lesson content and express their ideas effectively. This can reduce classroom participation, limit access to educational information, and create difficulties in assessment situations. One of the participants had this to say;

P2:We do not always have the devices we need to support learning.” This response indicates that inadequate access to assistive devices, such as hearing aids and other supportive technologies can make it difficult for learners with hearing impairment to access classroom instruction effectively. The shortage of appropriate devices may limit their participation and understanding of lessons (P2 on 27 August 2026).

In similar vein, another participant demonstrated;

P6:Some lessons would be easier if we had more visual materials and assistive technology to assist learners. This response highlights the importance of visual learning materials and assistive technology in making lessons more accessible to learners with hearing impairment. Their limited availability may make it difficult for learners to follow explanations, engage in learning activities, and achieve expected academic outcomes (P6 on 28th August 2026).

The findings indicate that inadequate learning resources and assistive technology constitute a significant barrier to the academic achievement of learners with hearing impairment. Participants indicated that lack of of hearing aids and other supportive technologies can restrict learners’ access to classroom instruction, participation, and understanding of lesson content. Taken together, these responses suggest that when appropriate devices and visual resources are unavailable, learners with hearing impairment may experience difficulties in following explanations, participating in classroom activities, and demonstrating their academic abilities. Thus, adequate provision and effective use of assistive technology and accessible learning materials are important for creating an inclusive learning environment that supports the academic achievement of learners with hearing impairment.

Inadequate Learning Resources and Assistive Technology: The second theme was inadequate learning resources and assistive technology, which is important because the availability of appropriate devices and accessible learning materials directly affects the ability of learners with hearing impairment to access classroom instruction, participate in learning activities, and demonstrate their academic abilities. This was demonstrated by one of the participants, who had the following to say;

P3:Some teachers know that we have hearing difficulties, but they are not always able to change their teaching methods. This response suggests that although teachers recognise the learning needs of learners with hearing impairment, limited knowledge of inclusive pedagogical strategies may prevent them from adapting instruction effectively. This can affect learners’ understanding, classroom participation, and academic progress (P3 on 27th August 2026).

Another participant had this to say;

P7:Teachers need more training on how to teach learners with hearing impairment effectively. This response highlights the need for professional development in inclusive education, particularly in sign language, visual teaching strategies, classroom communication, and differentiated instruction. Improved teacher competence could enhance learners’ participation and access to academic content(P7 on 28th August 2026).

The findings indicate that limited teacher competence in inclusive pedagogy can hinder the academic achievement of learners with hearing impairment. Responses of the respondents show that although teachers recognise learners’ hearing difficulties, some may lack the skills to adapt their teaching methods appropriately, this emphasises the need for further teacher training, suggesting that inadequate preparation in sign language, visual teaching strategies, communication, and differentiated instruction may limit learners’ understanding, participation, and access to academic content, ultimately affecting their academic progress

Limited Teacher Competence in Inclusive Pedagogy: Teachers’ knowledge and skills determine how effectively they adapt instruction, communication, learning activities, and assessment to meet the needs of learners with hearing impairment. Examining this barrier helps to identify gaps in teacher preparation and highlights the need for professional development that can improve classroom participation, access to learning content, and academic achievement. One of the informants had this to say;

P3:Some teachers know that we have hearing difficulties, but they are not always able to change their teaching methods. This suggests that teachers recognise the needs of learners with hearing impairment but may lack the skills or strategies to adapt their instruction effectively. Consequently, learners may

experience difficulties in understanding lessons and participating fully in classroom activities (P3 on 27th August 2026).

Similarly, another participant demonstrated;

P7:Teachers need more training on how to teach learners with hearing impairment effectively. This highlights the need for additional teacher training in inclusive teaching practices, particularly sign language, visual teaching strategies, and appropriate classroom communication. Such training could improve teachers' ability to support learners' participation and academic learning (P7 on 28th August 2026).

The findings indicate that limited teacher competence in inclusive pedagogy remains a barrier to the academic achievement of learners with hearing impairment. Response shows that some teachers recognise learners' hearing difficulties but are unable to adapt their teaching methods effectively, while another participant emphasises the need for further teacher training. Together, the responses suggest that gaps in teachers' inclusive teaching skills may limit learners' understanding, classroom participation, and access to academic content, thereby affecting their academic progress.

Communication Barriers with Peers and Teachers: Understanding communication barriers with peers and teachers is important because effective communication enables learners with hearing impairment to participate in classroom discussions, seek clarification, collaborate with peers, and build supportive relationships. Examining this barrier helps to identify how difficulties in communication may reduce classroom participation, limit access to learning opportunities, and ultimately affect learners' academic achievement. One of the participants had this to say;

P5:It is sometimes difficult to participate in group discussions because most students communicate by speaking. This response shows that reliance on spoken communication can make it difficult for learners with hearing impairment to participate actively in group discussions. As a result, they may have fewer opportunities to exchange ideas, ask questions, and contribute to collaborative learning (P5 on 26th August 2026).

Also, another participant recommended;

P8:I may know the answer, but communicating with other students makes it difficult to contribute. This suggests that communication difficulties may prevent learners from expressing their knowledge even when they understand the lesson. Such barriers can reduce classroom participation and limit their opportunities to demonstrate their academic abilities(P8 on 28th August 2026).

The findings indicate that communication barriers with peers and teachers can limit the academic participation of learners with hearing impairment. This shows that reliance on spoken communication makes it difficult for learners to participate in group discussions, while P8 indicated that communication difficulties may prevent learners from expressing answers even when they understand the content. These findings suggest that inadequate communication opportunities can reduce learners' interaction, collaboration, and ability to demonstrate their academic knowledge, thereby affecting their academic achievement.

Inaccessible assessment and learning environments: The last theme was inaccessible assessment and learning environments is important because unsuitable classroom conditions and assessment practices can restrict learners with hearing impairment from fully accessing instruction and demonstrating their knowledge. Examining this barrier helps identify challenges such as poor seating arrangements, excessive classroom noise, and reliance on oral instructions, which may reduce participation, comprehension, and fair assessment, ultimately affecting academic achievement. One of the participants had this to say;

P9:During examinations, instructions given orally can be difficult for us to follow. This response indicates that reliance on spoken instructions during assessments may disadvantage learners with hearing impairment. Limited access to examination instructions can create difficulties in understanding tasks and demonstrating their knowledge accurately (P9 on 29th August 2026).

Similarly, other participants demonstrated;

P10:Where the classroom is noisy or I cannot see the teacher clearly, following the lesson becomes difficult. This response highlights the importance of an accessible classroom environment. Excessive noise and poor visibility can interfere with visual communication and make it difficult for learners to follow explanations, participate in lessons, and understand learning content (P10 on 29th August 2026).

The findings indicate that inaccessible assessment and learning environments can hinder the academic achievement of learners with hearing impairment. The response shows that oral examination instructions may create difficulties in understanding assessment requirements, while another participant highlighted how classroom noise and poor visibility can interfere with learners' ability to follow lessons. Overall, the findings suggest that unsuitable assessment practices and classroom conditions may restrict learners' access to instruction, participation, and fair demonstration of their academic knowledge.

4.2 Discussion

The findings reveal that learners with hearing impairment experience interconnected barriers that affect their access to instruction, participation, and demonstration of academic knowledge. These barriers are not limited to the learners' hearing impairment itself but are also associated with communication systems, availability of resources, teacher preparedness, peer interaction, and the accessibility of classroom and assessment environments. This interpretation is consistent with Ndibalema (2025), who discusses barriers to learning opportunities among deaf children in Tanzania, and with Borg et al. (2015), who emphasize that appropriate support technologies can create opportunities for education, inclusion, and participation. The findings therefore suggest that academic difficulties may emerge when the educational environment does not adequately accommodate learners' communication and learning requirements.

First, limited access to effective communication and sign language emerged as a major barrier to academic achievement. Participants indicated that oral explanations were difficult to understand when sign language or interpretation was unavailable. This finding is supported by Mutatembwa et al. (2024), who highlight the importance of language comprehension in the educational development of deaf learners in Tanzania. Similarly, Kayombo and Walubita (2026) emphasize the importance of appropriate teaching and learning strategies when English is used as a medium of instruction for deaf students. The present finding therefore suggests that when learners cannot access instructional communication in a form they understand, they may have difficulties following explanations, asking questions, and expressing their understanding. In this sense, the finding extends the argument that educational inclusion requires more than physical placement in a classroom; it requires meaningful access to communication and instruction.

Second, inadequate learning resources and assistive technology were found to restrict learners' access to educational content and participation. Participants referred to shortages of devices, visual materials, and other assistive technologies. This finding strongly supports Borg et al. (2015), who argue that assistive technology can create opportunities for education, inclusion, and participation among children with disabilities. It is also consistent with Schafer and Wolfe (2010), who discuss hearing assistance technology as an important consideration in supporting children with hearing difficulties. In the Tanzanian context, Jullu and Wandela (2025) similarly draw attention to the availability of educational facilities for students with hearing impairments in inclusive secondary schools. The present findings consequently suggest that where appropriate assistive devices and accessible learning materials are insufficient, learners may have reduced opportunities to access instruction and demonstrate their academic abilities. Rather than viewing technology simply as an additional resource, the findings indicate that it can form an important part of the conditions required for meaningful educational participation.

Third, limited teacher competence in inclusive pedagogy was identified as another important barrier. Participants explained that some teachers recognised their hearing difficulties but were not always able to modify their teaching methods, while others called for additional teacher training. This finding is consistent with Kapinga (2014), whose work examined teachers' knowledge and preparedness for inclusive education in Tanzania. It also relates to Omoro and Possi (2024), who examine teachers' self-efficacy and beliefs about inclusive practice, suggesting the importance of teacher-related factors in the implementation of inclusive education. More directly, Stanislaus (2026) examines the influence of teachers' inclusive pedagogical practices on the academic participation of learners with hearing impairment in Tanzanian public secondary schools. The current findings therefore reinforce the view that recognising learners' needs is not sufficient if teachers lack the practical knowledge and skills to adapt instruction, communication, learning activities, and assessment. The findings do not necessarily indicate unwillingness among teachers; rather, they point to a possible gap between awareness of hearing impairment and the practical competence required to respond effectively.

Fourth, communication barriers with peers and teachers were found to restrict classroom interaction and participation. Participants explained that reliance on spoken communication made group discussions difficult and that they could sometimes know an answer but experience difficulties communicating it to other students. This finding is consistent with the broader emphasis of Mutatembwa et al. (2024) on language comprehension among deaf learners and with Ndibalema (2025), who examines barriers affecting learning opportunities among deaf children in Tanzania. The finding also complements Borg et al. (2015), whose discussion links accessibility with participation and inclusion. Importantly, the participants' accounts show that academic participation involves more than receiving information from teachers; it also involves communicating with peers, contributing to discussions, asking questions, and demonstrating knowledge. Thus, even when learners possess the required academic understanding, communication barriers may prevent that knowledge from being fully expressed in collaborative learning situations.

Fifth, inaccessible assessment and learning environments were identified as barriers to learners' ability to access instruction and demonstrate their knowledge fairly. Participants specifically identified oral examination instructions, classroom noise, and poor visibility of teachers as challenges. This finding is consistent with Borg et al. (2015), who emphasise the importance of accessibility and appropriate technologies in enabling participation, and

with Jullu and Wandela (2025), whose work focuses on the availability of educational facilities for students with hearing impairments in inclusive secondary schools. It also complements Schafer and Wolfe (2010), particularly regarding the role of hearing assistance technologies in improving access for children with hearing difficulties. The findings therefore suggest that even where teachers and learning materials are available, the physical and assessment environment can still create barriers if instructions are delivered primarily through auditory channels or if learners cannot clearly see the teacher. Overall, the five themes demonstrate that academic achievement among learners with hearing impairment is influenced by the accessibility of communication, resources, teacher practices, peer interaction, and assessment environments rather than by hearing impairment alone.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The study concludes that the academic achievement of learners with hearing impairment is constrained by a combination of communication, instructional, technological, interpersonal, and environmental barriers, rather than hearing impairment alone. Limited access to sign language and effective communication restricts learners' understanding of classroom content and their ability to express what they know; inadequate assistive technology and visual learning resources further reduce access to instruction; limited teacher competence in inclusive pedagogy constrains the adaptation of teaching approaches; communication difficulties with peers reduce participation in collaborative learning; while oral assessment instructions, classroom noise, poor visibility, and unsuitable learning environments limit learners' ability to access instruction and demonstrate their knowledge fairly. Collectively, these findings indicate that simply placing learners with hearing impairment in mainstream classrooms does not necessarily guarantee meaningful inclusion or academic achievement. Effective inclusion requires simultaneous attention to accessible communication, teacher competence, assistive technology, peer interaction, classroom conditions, and assessment practices. Thus, improving academic outcomes requires a shift from expecting learners to adjust to conventional educational practices towards creating learning environments that systematically accommodate their communication and educational needs.

5.2 Recommendations

Based on these findings, the study recommends that education authorities and school management should adopt an integrated support system for learners with hearing impairment rather than addressing individual barriers in isolation. First, schools should strengthen access to sign-language instruction and qualified interpretation, particularly during classroom teaching, group activities, and examinations, while teachers should be encouraged to use clear visual communication alongside spoken instruction. Second, the responsible education authorities should improve the availability, maintenance, and effective utilisation of assistive technologies and visual learning materials, including appropriate hearing-support devices, captioning and other accessible resources, because merely providing equipment without ensuring its usability and integration into teaching may not remove the identified barriers. Third, continuous professional development for teachers should be strengthened, with practical training in sign language, differentiated and visual pedagogy, inclusive classroom communication, adaptation of learning materials, and assessment of learners with hearing impairment. Fourth, schools should deliberately promote peer communication and collaborative participation by encouraging communication approaches that allow learners with hearing impairment to contribute meaningfully to group discussions and classroom activities. Finally, schools should make assessment and physical learning environments more accessible by providing written or visually supported examination instructions, improving seating arrangements and teacher visibility, reducing unnecessary classroom noise, and ensuring that assessment procedures allow learners to demonstrate their knowledge without communication barriers. These measures should be supported through adequate funding, regular monitoring, and school-level accountability so that inclusive education moves beyond policy provision towards consistent classroom practice and improved academic participation.

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Ethics Statement

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