

Barriers and Facilitators to academic performance of learners with Hearing Impairments in Zambia: A Review of Literature

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Abstract

This paper is a literature review and discussion of the barriers and facilitators of academic performance for learners with hearing impairments in Zambia. This review is necessary to put into perspective factors that may affect the attainment of sustainable development goals particularly goal number 4 on inclusiveness, equity, and lifelong learning. Learners with hearing impairments experience various learning barriers in Zambian schools. Education for learners with hearing impairments in mainstream institutions requires educators to put in place measures that can facilitate learning and academic performance. Adaptation of curriculum, effective use of assistive technology, and use of appropriate modes of communication are some of the prerequisites to the good academic performance of deaf students. In this article, we shall focus on some of the facilitators to the academic performance of learners with hearing impairments.

Keywords: Hearing impairment, facilitators, inclusive education, academic performance

Introduction

In this paper, we examine the literature related to facilitators and barriers to the academic performance of learners with hearing impairments in Zambia. What prompted this review was the continued debate on how best Zambia can improve the quality of learning for learners with hearing impairments. Several studies appear to suggest that there are several barriers for learners with hearing impairments (Muzata, 2017; Muzata & Mahlo, 2019; Simalalo, 2019). We first provide a brief background to the education of learners with hearing impairments dwelling on the facilitators to academic performance.

As is now recognised, education is a fundamental human right that should be accessed by every individual regardless of their social-economic status or disability. The United Nations (2014) indicate that human rights are; *universal*, implying that rights are equally applied and without discrimination to all people; rights are also *Inalienable*, meaning that one's right cannot be taken away, except in specific situations where a person is found guilty of a crime by a court of law. Human rights are also *indivisible*, *interrelated*, and

interdependent. The implication is that it is insufficient to respect some human rights and not others and practically, the violation of one right will often affect the respect of several other rights (United Nations, 1993). Providing education to persons with disabilities does not necessarily mean placing them in a learning institution, there is a need to ensure that measures that support their learning are put in place, especially if an institution practices inclusive learning. Learners with hearing impairments are exceptional and their learning can only be facilitated if the learning barriers are removed through adherence to facilitators that enhance their learning.

Brief history of education for the deaf in Zambia

Education for persons with disabilities has expanded in Zambia since its inception in 1905 by Mrs Isie Hofmeyer, who established the first class for the visually impaired and later included learners with hearing impairments in the Eastern Province of Zambia. After Mrs Hofmeyer's death in 1910 (Muzata, 2017), Ms Ella Botes continued with the mission of providing education to persons with disabilities and established the first class for learners with hearing impairments at Magwero in 1955 (Urquhart & Jean-Baptiste, 2009). The establishment of class for the hearing impairments at Magwero thus provided the genesis of education for the deaf. The presidential decree by the first Republican President Dr Kenneth Kaunda in 1971 for Ministry of Education to take up the responsibility for the education of persons with disabilities (Mandyata, 2019), provided for the platform the expansion of education for exceptional children and the establishment of the first college of education 'Lusaka College for Teachers of the Handicapped' (LUCOTEHA) presently known as Zambia Institute of Special Education (ZAMISE) to train teachers in special education. Since then, Zambia has enacted legislations on education and persons with disabilities such as the Education Act of 2011 which repealed the Education Act, 1966, and the African Education Act of 1951 (National Assembly, 2012); The Persons with Disabilities Act No. 33 of 2012 which repealed the 1996 Persons with Disabilities Act and the Handicapped Act of 1968 (MCDMCH,2015). Education policies and reforms such as The Education Reforms of 1977 Focus on learning 1992; Educating Our Future, 1996 and the Zambia Curriculum Education Framework, 2013 (MESVTEE,2013) provided the platform and opportunities for learners with special educational needs to access education.

Learners with hearing impairments in Zambia can now have an opportunity to access education from early childhood to tertiary level. Some of the schools where learners with hearing impairments can access education in Zambia are; Magwero in Eastern Province (Muzata, 2017), St. Mulumba (Kalabula, 2007) and Maamba special schools in Southern Province, Senanga Special school in Western Province, Chileshe Chepela in Kasamba, Northern Province (Musonda & Phiri, 2017); Munali in Lusaka Province (Nonde, 2013); Broadway in Kabwe Central Province and Solwezi Combined in North-Western Province. Schools in the Copperbelt Province are St. Joseph in Lufwanyama, Kansenshi Combined

and Chilengwa in Ndola; Chibote girls, Jenifer Memorial Special Community School and Valley view in Kitwe and Masamba School in Kalulushi. Special schools and units are found in all the 10 provinces of Zambia where learners with hearing impairments can access education. At the tertiary level, students with hearing impairments can access teacher training at the Zambia Institute of Special Education (ZAMISE) in Lusaka Province, Kitwe College of Education on the Copperbelt Province (Ministry of General Education, 2019), and the University of Zambia Great East Campus, in Lusaka. A few learners with mild hearing impairments are found in inclusive classrooms in the country.

Learners with impairments pursue their education in Zambia through inclusive education, special units, and special schools (MoE, 1996). The Term hearing loss is often used by professionals about hearing impairment (WHO, 2015; MoE, 2007). Hearing impairment can be broadly divided into two categories, Hard of Hearing and Deafness. A person with Hearing impairment is *Hard of Hearing* meaning that such a person has 'Partial loss of Hearing', he or she has residual hearing' whereas *deafness* is 'having complete loss of hearing'. *Deafness* can also be defined as a severe hearing impairment in which an individual is unable to process linguistic information through hearing (WHO, 2015) with or without amplification. In special education, the term Hearing Impairment (HI) is often used about hearing loss that is permanent or fluctuating, and adversely affects a learner's educational pursuit and academic performance but that is not included under the definition of deafness. In this paper we choose to use both terms, 'hard of hearing' and 'deafness' as hearing impairment.

In our endeavor to discuss the facilitators to the academic performance of learners with hearing impairments, we refer to the statutory instruments that support the education of persons with disabilities. Today, the United Nations focus is on the inclusion of everyone in the education and social sectors. Inclusive education is based on the premise that all learners have unique characteristics, abilities, and interests, and learning needs thus should learn together in the same learning environments unlike teaching children with special educational needs separately (United Nations, 2014). The Salamanca Statement on inclusive education entails learning institutions to be "schools for all" or learning institutions that include every learner, celebrate differences, support learning, and respond to individual needs (UNESCO, 1994). This means that every learner should be accepted in a learning institution. *Acceptability* entails providing a welcoming hand to every learner in every learning institution. The right of persons with disabilities to receive education in mainstream schools is included in article 24, paragraph 2 (a), of CRPD which stresses the emphasis on no rejection of learners from general education based on disability (United Nations, 2013). Accepting learners in learning institutions should reflect measures put in place to ensure access to quality education. Accessibility forms the basis for the precondition to a full realisation of the rights and inclusion of persons with disabilities in society (United Nations, 2014). To attain complete acceptability of learners

with hearing impairments in learning institutions, it is inevitable to identify the barriers in their educational pursuit and provide appropriate measures to eliminate the barriers.

Barriers to the education of learners with Hearing Impairments in Zambia

Learners with hearing impairments just like other exceptional learners face challenges in their education. Studies in Zambia have shown the existence of learning barriers for learners with hearing impairments that have affected their educational pursuit and academic performance over the years. Communication barriers (Chibuye, 2013; Mandyata & Kamukwamba, 2018), lack of sign language interpreters and limited vocabulary among deaf learners (Muzata & Mahlo, 2019), challenges with standardised assessments (Manchishi, 2015; Chifinda, 2017; Muzata, 2015), lack of adequate knowledge and skills to teach learners with hearing impairments by some teachers and existence of unqualified and/or incompetent teachers (Muzata, 2013; Muzata & Ndonyo, 2019; Ndonyo et al., 2017), insufficient resources both human and material (Ndonyo, Matafwali & Chakulimba, 2017; Manchishi, 2015; Muzata, 2013), inappropriate infrastructure (Banja & Mandyata, 2018) and the use of inappropriate teaching methods (Ndonyo et al., 2017) are some of the barriers to the education of learners with hearing impairments in Zambia.

Communication has been cited as one of the barriers to the education of the deaf. Communication is any verbal or nonverbal behavior, intentional or unintentional that is likely to influence behaviour, ideas, or attitudes of a particular person or people (American Psychiatric Association, 2013; Kumatongo, 2019). For learners with hearing impairments, nonverbal communication is often used, but one has to interpret the word signs and body language for communication to be effective. The teacher-student communication barrier can negatively affect learning. Studies have shown that the use of the unfamiliar mode of communication by teachers affects the performance of learners with hearing impairments in schools (Mandyata & Kamukwamba, 2018). Poor literacy levels were cited as a result of poor sign language skills among teachers of deaf learners and the use of foreign sign language systems in special schools, particularly American Sign Language (ASL) which was alien to learners with hearing impairments (Chibuye, 2013). A study by Nonde (2013) revealed that learners with hearing impairments were uncomfortable with teachers' use of verbal communication and that only a few learners could benefit from lip-reading. Limited sign language vocabulary, variations of sign language among learners with hearing impairments from different schools, and teacher incompetence in sign language (Nonde, 2013; Muzata, 2018; Mandyata & Kamukwamba, 2018) was exhibited by teachers handling students with hearing impairments.

Learners with hearing impairment have challenges with writing English due to difficulties accessing and learning syntactical and morphological structures. Auditory or visual errors are numerous at the sentence level (Martin, 2012) making them face challenges with

comprehension and answering *standardised examination* questions (Manchishi, 2015; Chifinda, 2017; Moonga, 2013). A study by Chifinda (2017) revealed gaps and limitations in methods of test administration for learners with hearing impairments, use of inappropriate assessment tools, insistence on the use of written standard British English as a communication mode, limited time allocation, and lack of qualified specialist for Hearing Impaired learners to set and mark examinations items as well as handling invigilation related challenges of examinations. The emphasis for learners to write standard British English is perceived as a measure of intelligence, which should not be the case for the deaf. Similarly, Manchishi (2015) found that learners with hearing impairments had challenges comprehending test items due to the inclusion of certain terminologies that confuse learners with hearing impairments. Muzata, (2017) argues that special education teachers found certain terms in science-based subjects, Mathematics, and history difficult to sign. Moonga (2013) established that examination papers for candidates with hearing impairment in schools, colleges, and universities including the Examinations Council of Zambia (ECZ) assess learners with Hearing Impairment in written Standard British English which demands learners understanding the meaning of words, sentences, and texts making it difficult for the learners to perform well academically.

The use of *inappropriate teaching methods* and *unsuitable materials* coupled with insufficiently qualified personnel (Banja & Mandyata, 2018; Ndonyo et al., 2017) has been reported to affect the education of learners with hearing impairments. Ndonyo et al. (2017) established that teachers were using inappropriate teaching methods, insufficient teaching resources for learners with hearing impairments were reported in studies by Manchishi (2015); Muzata (2013); Ndonyo et al. (2017); Banja & Mandyata (2018) & Nonde (2013). A study by Mandyata & Kamukwamba (2018) revealed that teachers for learners with hearing impairments were ill-prepared whereas Ndonyo et al. (2017) reported the use of unqualified teachers to teach learners with hearing impairments as a contributing factor to their learning challenges.

A conducive *learning environment* is a prerequisite to effective learning. There is a need to make a learning environment conducive for learners with hearing impairments so that they are not destructed during learning. Nonde (2013) reported that many learners with mild hearing loss fail to make use of their residual hearing due to environmental barriers such as a classroom environment that is not friendly for use of amplification devices (acoustically treated). Inappropriate infrastructure (Banja & Mandyata, 2018; Ministry of Community Development and Social Services, 2018), was also cited as a learning barrier.

Facilitators to Academic Performance of Deaf Learners

The identified learning barriers for learners with hearing impairments require appropriate measures to be put in place to promote learning. Our focus in this article is how facilitators

improve the academic performance of students with hearing impairments such as *Curriculum adaptation and accommodation, providing trained teachers, use of specific assistive technology; modes of communication for the deaf*, and the need to promote *collaboration* between students with hearing impairment and their hearing peers. Facilitators in this context are innovations, programs, and learning activities that facilitate access to education and learning for learners with hearing impairments.

Curriculum adaptations and accommodations for students with hearing impairments

Adaptation of curriculum is a means of adjusting curriculum to ensure that curriculum provides access to information, special equipment, facilities, or resources (Strogilos, 2018) by exceptional learners. An adjustment in the curriculum for learners with hearing impairments is the differentiation of curriculum and involves modification or accommodation of the curriculum. Curriculum differentiation for deaf students should be tailored to ensure that what students learn, and how they learn to meet their educational needs (Tomlinson, 1999). Students should also demonstrate that what they have learned matches their academic level and interests (Abodey & Ansah, 2017), hence the need to modify modes of learning.

Modifications are changes in the curriculum to suit an individual's impairment or age-appropriate grade-level expectations, whereas accommodation refers to the acceptance of learners in the classroom by putting in place ways of teaching students to enable them to demonstrate regular grade-level expectations. Curriculum differentiation for students with hearing impairment should focus on making adjustments on what to teach, how to teach, adjusting the learning environment, adjusting content and tasks as well as adjusting assessment (Bengough, 2014). Differentiated instruction has the potential to increase student academic performance in terms of high scores and reduce students' risk for school failure, typical of students with special educational needs (Strogilos, 2018).

Adaptation of curriculum for students with hearing impairments can be done through the provision of sign language interpreters. A sign language interpreter for students with hearing impairments main role in the classroom is to facilitate communication between teachers and students. Sign language interpreters working in educational settings such as schools, colleges, and universities need to have specific knowledge of academic content as well as knowledge of child development (Standley,2005), because sign language interpreters interact with learners at different development levels, both academically and socially. A sign language interpreter thus forms part of a multi-team approach for deaf learners. A study by Cawthon (2001) indicated that teachers were in favour of a team approach to educate students with hearing impairments and recommended an educational sign language interpreter as being a critical member in the education of learners with hearing impairments. Gunardio & Antia (2012) found

modifications of the classroom environment which included changes and adjustments in classroom organisation, visual stimulation, seating arrangements, and improvement of acoustic quality as contributing factors to academic achievements of learners with hearing impairments.

Curriculum adaptation for students with hearing impairment in an inclusive setting should also include the provision of a resource room. A resource room is a separate remedial classroom in an inclusive school setting where teachers for learners with hearing impairments and/or other disabilities work individually or with small groups of students for certain subjects to provide specialised instructions and academic remediation during the school day (Gettemeier, 2018; Deshpande, 2013). Students are first allowed to attend a general education classroom and later receive pull-out services in the resource room for portions of the day. Provision of remediation services in the resource room in this context is aimed at providing more intensive and individualised instruction for students with disabilities (Gettemeier, 2018). Deshpande (2013) indicates that remedial, compensatory, developmental instruction and indirect services can also be provided to the student with special educational needs through consultation with the general education teachers and other professionals to support in adjusting the learning environment or modify the instructional methods.

Assessments for students with hearing impairments require accommodations. Assessment accommodations enable students with hearing impairments to be subjected to test contents without barriers because most standardised tests provided to learners in inclusive settings are associated with standardised test format (Cawthon & Wurtz, 2015), likely to cause challenges to learners with hearing impairments. Assessment for learners with hearing impairments just like other exceptional learners should be embrasive, basing on the fact that learners have different abilities (Muzata, 2015). Tests or examinations that are not developed in consideration of learners' abilities are likely to lead to a high failure rate, increased number of learners dropping out of school, reduced self-esteem (Muzata, 2015), and challenges to maintain transitions from one grade level to another.

Assessment accommodations for the deaf may include; extended time or duration for writing test items or examinations (American Institute for Research, 2014), which may be time and a half, double-time, or unlimited time, reading test items aloud, and use of sign interpreters for instructions, which can be of help to students, provided they are designed to remove factors that penalize students because of their disability (Cawthon & Wurtz, 2015). Use of adapted/modified English alongside Sign Language Interpreters, increased use of objective tests and Continuous Assessment (CA) should also constitute adapted measures for assessing learners with hearing impairments (Chifinda, 2017). Appropriate assessment for exceptional learners is cardinal to avoid disadvantaging them during examinations (Muzata, 2015). It is, therefore, necessary for school administrators to

ensure that curriculum adaptation and accommodation for learners with hearing impairment is adhered to for learners to benefit from inclusive education.

Providing adequate trained teachers

Teachers play a key role in the education of exceptional learners. Teaching learners with hearing impairments require highly qualified teachers with adequate knowledge and skills in special education and inclusive learning. The use of ill-trained and/or unqualified teachers (Mandyata & Kamukwamba, 2018; Ndonyo et al., 2017; Muzata, 2013) contributes to the use of inappropriate teaching methods and inability to use appropriate teaching and learning resources. A qualified teacher of learners with hearing impairments should be able to identify the learning needs of learners, barriers likely to affect their learning, communicate effectively with the learners, and make adaptations to the curriculum to suit the exceptionality of learners under his or her care. Strengthening the teaching methodologies courses for pre-service teachers (Muzata, 2018) to ensure that trainee teachers have the knowledge and practical skills to teach the deaf is necessary. Providing *Continuing Professional Development* (CPD) programmes is one way of ensuring that in-service teachers acquire new knowledge and skills on how to teach learners with hearing impairments in line with National and/or International educational policies as well as research findings on appropriate teaching techniques.

Use of assistive technology

Assistive technology is essential in providing support to students with hearing impairments during communication processes. Access to visual instruction and individualisation of instruction is critical for the educational success of students with hearing loss (Skrebneva, 2015). Assistive technology for individuals with hearing impairment help to promote their listening skills, comprehending or recognising sounds, and enhancing the frequencies of sound to make them much clearer. Devices such as hearing aids, Cochlear implants, F.M systems, Infrared systems, computers, and related technology (Skrebneva, 2015; Farooq, Aasma & Iftikhar, 2015), can be used to promote and enhance communication for the learners.

Hearing aids

A hearing aid is an amplification device that makes the sound louder. Hearing aids can occur in different forms or types, but the three main types of hearing aids include; behind the ear hearing aid, inside the ear, and those inserted farther down in the canal of the ear. A behind-the-ear hearing aid is more powerful and often used by individuals with severe hearing loss ((Skrebneva, 2015; Hallahan & Kauffman 2006). Hearing aids may help

individuals with hearing loss to hear when amplified sound picked up by the microphone passes from the receiver to the speaker, via a tube, and into the plastic ear-mould custom-moulded for each user to ensure appropriate ear fitting (Skrebneva, 2015; Marschark 2007).

Despite hearing aids not operating in the same manner as glasses do, to correct vision (Doyle & Dye, 2002), and the inability of hearing aids to distinguish between speech and noise compared to normal ears, learners with hearing loss especially those ranging from mild to moderate hearing loss can benefit from the use of hearing aids. Studies have shown that assistive devices such as hearing aids facilitate learning (Farooq, Aasma & Iftikhar, 2015), and lack of which is likely to cause delays in the acquisition of verbal skills, academic achievements, and social development (Easterbrooks & Baker, 2002 Marschark et al.,2006) of learners with hearing impairments. It has to be noted that not every learner with hearing loss can benefit from hearing aids. Learners with severe and profound hearing impairments may not benefit from the use of hearing aids, but the cardinal point is that learners who may benefit from hearing aids should not be denied an opportunity to utilise devices that can help enhance their learning and improve their academic performance.

Computer-related technology

Various forms of technology and software can be integrated into the education of learners with hearing impairment and subsequently facilitate positive academic and social results (Skrebneva; 2015; Westwood 2011). Visual displays of speech patterns on a computer screen can help students with hearing impairment to learn speech, whereas videodisc programmes showing people signing can be used in learning sign language (Skrebneva, 2015) and specific academic content. The use of a C-Print, a computer-based technology in which a hearing person transcribes on a computer what is being said by someone during lecturing can help a student with hearing impairment to read real-time text display on the computer and thereafter receive a printout of the text (Skrebneva, 2015). Teachers can record lessons on video cameras and share it with deaf learners via the internet or ask learners to watch video lessons during their own time. Teaching learners to use computer-related devices appropriately can help improve their learning. There is a need to ensure that learners with hearing impairments have access to computers and internet services in inclusive learning institutions in that such services provide avenues for additional sources of information. Farooq et al. (2015) recommend the need to reduce the cost of assistive devices for students with hearing impairment. In inclusive education, free access to assistive technology by deaf students should be the policy of every learning institution.

Modes of Communication for learners with hearing impairments

A good communication system in a learning institution facilitates the goal of education for all students, including students with hearing impairments, which is; to develop linguistic, academic, and social competency of students (Kendall & Lieberman, 2016). Appropriate communication is likely to enhance the academic performance of students, and inappropriate communication can create barriers to learning for students with hearing impairments. Teaching students with hearing impairments require the use of various methods that suit the type and degree of hearing loss as well as the educational levels of students. Oral methods, sign language, and total communication can be used to teach learners with hearing impairments (Marschark & Spencer, 2009).

Modes of communication used when teaching students with hearing impairments

The most common modes of communication used by teachers and educators of students with hearing impairments fall under four modes of communication; the manual method, oral-aural method, bilingualism, and total communication (Girmay, 2012; Ugwuanyi, 2017; Marschark & Spencer, 2009). The choice of the mode of communication can be influenced by factors such as students' degree of hearing loss, age, educational level, and/or familiarity with the mode of communication by the student.

The manual method

Manual communication is a very general term that refers to communication through the use of hands, in contrast to verbal communication that is achieved by using the voice (Victoria Deaf Society, 2010). Communication through visual stimuli such as sign languages and finger spelling are characteristics of manual methods. Sign Language being a visual-gestural language uses the hands, facial expressions, and the body in a systematic way to convey meaning (Powers, 1999), and has its lexicon and syntax which does not represent the spoken language word for word or in the same order and differs from country to country.

Learners with hearing impairment may be taught using Manual English. Manual English users use signs to communicate but maintain English word order and grammar to develop an individual with hearing impairment ability to read and write correct English grammar (Victoria Deaf Society, 2010). Signed English is an example of a manual representation of the English language, in which the English language is signed word for word, using signs, both natural and contrived, by means of following the English grammatical system. Manual sign language differs from country to country. For instance, American Sign Language (ASL), Kenyan Sign Language (KSL), and Zambian Sign Language (ZSL) are manual sign languages used by deaf signers in different countries and have different grammar.

Zambian Sign Language

Sign language is a formal language, socially agreed on by its users. Sign language is a rule-governed symbol system that is generative. The components of sign language are not phonemic (sound) combinations, like words of spoken language, but rather phonological combinations that are hand shapes, movements, the orientation of the palm, and location that form signs (Girmay, 2012). Sign language is therefore different from country to country, implying that there is no universal sign language. Despite the existence of what is termed as International Sign Language, a form of visual communication used on international gatherings to individuals with hearing impairments from different countries without common shared sign language (Hiddinga, & Crasborn, 2011), foreign sign languages should never replace the national /local sign language and dialects.

Despite inadequate documentation and information on Zambian Sign Language (Salomons, 2016), Zambian Sign Language (ZSL) users use gestures made by hands, body, and facial expressions to convey abstract concepts. Zambian Sign Language (ZSL) has its grammatical structure. The sentence structure pattern for Zambian Sign Language is Subject-Object-Verb or Object Subject Verb (Urguhart & Jean-Baptiste, 2009). Zambian Sign Language can be written by writing signs using the words of a spoken language, a term referred to as glossing. This implies that when Zambian Sign Language is glossed in English, its grammar does not follow the rules of English grammar, but rather follows the order that corresponds to characteristics of signed Zambian Sign Language grammar (Urguhart & Jean-Baptiste, 2009). Features of sign language such as fingerspelling aimed at augmenting most sign language systems by using hand shapes to code the letters of the alphabet as well as numbers (Marschark & Spencer, 2009; Victoria Deaf Society, 2010) are also commonly used by Zambian Sign Language users, in which words, names, and numbers may be spelt out using an individual letter of the manual alphabet (Urguhart & Jean-Baptiste, 2009).

Individuals with hearing impairments often use ZSL during their interaction, play, and learning activities. To teach learners effectively, there is a need to understand who they are and their familiar mode of communication. The Zambian language policy stresses the emphasis on the use of local or familiar language (MESVEE, 2013). A language that is commonly used by children in a particular locality is referred to as familiar language. It could be in a zone or a community language (MESVEE, 2013). Zambian Sign Language is thus a familiar language for individuals with hearing impairments in Zambia. A statutory Instrument by the Minister of General Education to recognise Zambian Sign Language as the 8th National Local Language to enforce the use of Sign Language in public and private institutions (Education Act, 2011; National Disability Policy, 2015) is long overdue, in that a Statutory Instrument is inevitable for standardisation of Zambian Sign Language. To enhance learning in Zambian deaf students, teachers must also be familiar with Zambian Sign Language and its grammatical structure. Understanding ZSL by teachers can help

them to guide hearing impaired students effectively and help them develop appropriate communication skills. Familiarisation of ZSL by teachers can facilitate classroom communication, student-teacher interaction and enhance academic performance in that teaching and learning processes are anchored on effective communication.

Oral-Aural approach

Learners with residual hearing can benefit from the use of the oral-aural approach. The oral method of communication commonly used when teaching hard-of-hearing students utilise speechreading (lip-reading) and aims at maximising the use of learner's residual hearing for the development and production of speech (Victoria Deaf Society, 2010). The method is based on the premise that individuals with hearing impairments can be taught to develop language that will enable them to communicate more effectively with hearing individuals in mainstream schools and society at large (Gravel & O'Gara, 2003). Using the Oral-Aural method, the learner receives input through amplification of sound and speech reading (lip-reading) and they express themselves through speech after being subjected to intensive speech therapy. Learners in inclusive classes are taught collectively and individually, hence teachers need to identify learners who can benefit from the Oral-Aural approach and ensure measures are put in place to maximise their learning potentialities.

Cued Speech is a form of Oral-Aural method comprising eight different hand shapes and four different hand locations around the speaker's face (Gravel, & O'Gara, 2003), to help facilitate lip-reading when the speaker simultaneously use hand gestures accompanied with speech to help the listener visually distinguish between similar-looking sounds on the speaker's lips (Victoria Deaf Society, 2010). It is necessary to understand the background of learners and their familiar mode of communication. Although not used in Zambian schools, teachers of deaf students should understand their learners and if one student is familiar with a cued speech based on his or her educational background, appropriate measures should be taken to ensure that such a student is not disadvantaged.

Bilingual approach

The bilingual approach can also be used to teach individuals with hearing impairments. The bilingual approach also known as the bicultural bilingual approach is an approach used to educate individuals with hearing impairments using both the Sign Language of the native Deaf Community and the spoken and written language of the hearing community. The student's first and natural language forms a base for instruction, supported by teaching to read and write the second language such as English (Johnson, 2017). The advantage of this approach is that individuals with hearing impairments with the help of bilingual instructors can benefit from the exposure to both Deaf culture and the culture of the hearing community (Marschark, Sarchet, Sapere, & Convertino, 2019; Johnson, 2017).

The bilingual approach also focuses on the support, development, and maintenance of an individual with hearing loss's first language as they develop a second language (Gárate, Batamula, & Kite, 2016). In Zambia, most post-lingual students can benefit from the use of the language they acquired before their deafness. The use of Zambian local languages such as Cinyanja, Ibibemba, Silozi, Citonga, Kikaonde among others can be an added advantage to post-lingual learners with hearing. For instance, if a student acquired Silozi before hearing loss, it is cardinal for teachers to use both Silozi (Spoken) and Zambian Sign Language during teaching to facilitate grasping of concepts, hence promoting a Bilingual approach. If the student acquired English which is an official language in Zambia, before the occurrence of hearing loss, teachers should speak English and sign at the same time. It is cardinal for teachers to understand that there are differences in the same domain of exceptionality in this context, hearing impairments. Pre-lingual learners are different from post-lingual learners, hence pre-lingual learners should not be forced to learn other local languages because learning a spoken language requires a good sense of hearing, hence not all deaf learners should be subjected to the Bilingual approach.

Total Communication (TC) Method

Teachers of learners with hearing impairments can also use Total communication as a mode of communication. Total Communication (TC) was initially conceptualised in the 1970s as a technique that makes use of speech, finger spelling, and signs (Ugwuanyi, 2017; Gárate, Batamula, & Kite, 2016), the use of this technique greatly help deaf learners. Combinations of manual signs, speech, fingerspelling, gestures, speechreading, cued speech, body language (Johnson, 2017), and augmentation of residual hearing can be used to develop and enhance students' communication abilities.

Total Communication (TC) is not a language but a philosophy of educating learners with hearing loss by incorporating all means of communication (Johnson, 2017; Gárate, Batamula & Kite, 2016). The primary goal of Total Communication is for learners with hearing loss to gain language competence. The method is mostly used for learners with hearing loss using hearing aids or cochlear implants but can also benefit post-lingual deaf students. Learners with hearing loss experiencing continuous difficulties in literacy development when learning using oral methods can be taught using Total Communication (TC) or Simultaneous Communication (SimCom), to help them develop literacy skills (Marschark & Spencer, 2009). Teachers should also use visual aids during teaching to augment learning when handling deaf learners.

The use of appropriate communication to learners with hearing impairments has been linked to good academic performance, whereas communication barriers have been found to affect learners' academic performance. Rugg & Donne (2011) linked limited vocabulary of students with hearing impairments to the use of listening and spoken language,

whereas Emmanuel et al.(1998) found that oralism (use of speech) as means of communication influenced low performance in spelling, paragraph comprehension, vocabulary, mathematical concepts, mathematical computation, social studies and science in learners. Use of Bilingualism revealed positive gains in grammar, reading comprehension skills, vocabulary, mathematical skills, as well as socio-emotional development of the individual with hearing impairments, despite students' performance lagging behind the performance of hearing peers in language, literacy, as well as academic attainment (Tang, 2017), while Knoors & Marschark (2012); Spencer & Marschark (2010) established a gap of literacy development and educational attainment between sign bilingual deaf children and their hearing age norms. Girmay (2012) indicated that lack of adequate skills in sign language by both teachers and students with hearing impairment students as well as sign language interpreter's complexity and uniformity of sign language used by sign language users created learning challenges for learners with hearing impairments. Namukoa (2012) reported that the use of Kenyan Sign language (KSL) as the primary language for the deaf provided plausible evidence supporting positive performance by learners in all teaching subjects. Chibwe (2013) revealed the negative academic performance of learners with hearing impairments and teachers' use of unfamiliar sign language to learners was linked to their academic performance in Zambia. Teachers should therefore understand their learners and use appropriate communication to facilitate learning in students with hearing impairments, in that not all modes of communication can produce desired results. Continuous assessment of learners' communication abilities is necessary, and teachers ought to provide appropriate measures to ensure learners develop communication skills in early grade for a smooth transition to higher grade levels.

Collaboration of students with hearing impairments and hearing peers

The understanding and appreciation of Deaf culture, deaf identity, and sign language can only be possible when individuals hearing impairments learn and play alongside their hearing counterparts as part of their social and educational intervention programmes (Namukoa, 2012) because such interactions and educational interventions are likely to enhance collaboration and subsequently the good academic performance of students with hearing impairments.

Learners with hearing impairments just like any learner require relationships and interactions to develop social skills and academic skills necessary for social relations and capable of influencing academic performance (Gifford-Smith & Brownell, 2003). Different degrees of peer acceptance, social competence, and friendly relations have been found to reflect various forms of development in learners. Students who are disliked or rejected by peers and teachers are likely to display aggressive and antisocial behaviors, which have a negative bearing on learning and academic performance, whereas good collaboration among learners with hearing impairments and their hearing peers have

shown considerable positive effects on the education of the deaf. Namukoa (2012) reported that a study by Crooke, Drye, Egbert, Klein and Kreimeyer (2000) found that students with hearing impairments, who worked together in groups with hearing students during academic activities, experienced increased interactions and subsequently positive academic performances, whereas Crooke et al. (2000) reported that hearing students tend to understand and appreciate deaf culture and sign language when interacting with their deaf peers.

Deaf students who often interact with hearing peers greatly benefit academically and socially. Hearing students are exposed to various sources of information and can be likened to More Knowledgeable Others capable of sharing vital knowledge and skills to their deaf friends. Hearing students can also interpret information to their deaf peers and help them in areas where they may experience challenges. Deaf students often teach sign language to their hearing peers, and when a strong social bond is created among the deaf and hearing student, deaf students feel valued and appreciated, thus their learning challenges may be minimised in that their interaction with hearing peers can also have a bearing on their academic performance. Teachers should encourage deaf students and their hearing friends to work in collaboration during assignments and other educational projects.

Conclusion

Facilitators to academic performance discussed in this article are significant in the education of learners with hearing impairments. To ensure equality of opportunities and full inclusion of learners with hearing impairments in education, stakeholders should ensure that facilitators to the academic performance of learners with hearing impairments are considered at every educational level. Barriers that may inhibit access to education of learners with hearing impairments should also be identified and eliminated through consideration of some of the facilitators. Learning can be made easy and interesting for deaf learners if provided with appropriate resources, and the availability of resources can enhance their academic performance.

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