

Exploration of Academic Performance of Learners with Hearing Impairment at Munali Secondary School, Zambia

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Abstract: This study explored the academic performance of learners with hearing impairment at Munali Secondary School, Zambia. The following specific objectives guided the study: (i) describe academic performance of learners with hearing impairment at Munali secondary school, (ii) explore challenges affecting academic performance of learners with hearing impairment at Munali Secondary School, and (iii) explore strategies for improving academic performance of learners with hearing impairment at Munali Secondary School. A qualitative case study was applied. The instruments in data generation were structured interview guide and observation check list. Data was generated from 14 participants. All the participants were sampled using the purposive sampling procedure. Emergent findings indicated that learners with hearing impairment at Munali under-performed academically. The challenges that affected the academic performance were: Language deficit and language delay; unfriendly curriculum; teachers' incompetence in the language of instruction (Sign Language); and lack of teaching and learning materials in Sign Language. To improve the academic performance of learners with hearing impairment, strategies included: early identification and assessment; conducting Continuous Professional Development meetings to improve sign language; improved training of teachers for learners with hearing impairment in colleges and universities in sign language; and preparing learning and teaching materials in sign language. The findings offer insight into the academic performance of learners with hearing impairment at Munali Secondary School as well as other schools with similar settings.

Key words: Academic Performance, Learners with Hearing Impairments, Munali, Zambia

I. INTRODUCTION

This paper is an excerpt from the principal researcher's Master of Special Education dissertation. The Masters programme was offered by the University of Zambia (UNZA) in collaboration with the Zimbabwe Open University and has been running since 2014 (Manchishi, Simui, Ndhlovu & Thompson, 2020; Simui, 2018; Simui, Kasonde-Ngandu, Cheyeka & Kakana, 2018).

Available research on academic performance of learners with hearing impairments has shown that a large number of students with hearing impairment under-perform due to various challenges (Migehe, 2015). On the other hand, other studies had found the academic performance of learners with hearing impairment to be as high as their counterparts without hearing impairment (Mustafaa et al (2017).

Munali Secondary School is a state-funded secondary school located on the Great East Road, in Lusaka, Zambia. Munali was the first secondary school for black students in Zambia's history. According to Myers (2018), in colonial times, Munali was intended as Northern Rhodesia's principal school for talented native Zambians. The school was first established in 1938 as Entral Trade School. Founded in its own right in 1947 as "Munali secondary School" with about 40 pupils, it was originally situated at the David Kaunda campus at "Old Munali". In 1953 the school moved from Old Munali to its current campus at "New Munali" (Mwanakatwe, 2013). Munali Secondary School now has three branches: Munali Boys Secondary School, Munali Girls Secondary School and Munali School for the Deaf and Blind. The school's slogan is "Only the best is good enough for Munali." The school produced the entire 1964 Independence Cabinet of the first Republican President of Zambia, Dr. Kenneth Kaunda, who himself is a former "Munalian". However, Migehe (2015) observed that most research, about the education of persons with hearing impairment has been focused on challenges faced in deaf education. Until then no research had been conducted to explore the academic performance of learners with hearing impairment in order to have an in-depth understanding of the problem of under performance. It is in that context that the researcher was motivated to explore the academic performance of hearing impairment at Munali Secondary, Zambia.

1.1. Statement of the Problem

Despite the government's efforts to provide education for all learners regardless of the disability (Ministry of Education 1992; Ministry of Education 1996), pupils with hearing impairments were reported to underperform academically (Migehe, 2014), and repeated classes at grade nine and twelve examination levels. It was not known whether that was a reflection of the academic performance of learners with hearing impairment in all schools, in particular, Munali Secondary School. There was need, therefore, to explore their academic performance so that challenges were known and strategies for improving academic performance found.

1.2. Purpose of the Study

The purpose of the study was to explore the academic performance of learners with Hearing Impairment at Munali Secondary school, Zambia.

1.3. Specific Objectives

The specific objectives of the study were to:

- i. Describe academic performance of learners with hearing impairment at Munali secondary school,
- ii. Explore challenges affecting academic performance of learners with hearing impairment at Munali Secondary School, and
- iii. Explore strategies in use for improving academic performance of learners with hearing impairment at Munali Secondary School

1.4. Theoretical Framework

The Ecological Systems theory formed the framework of this study because it explains that the development of a child including those with hearing impairments in an ecological environment appears to be greatly determined by what a child experiences in the immediate and distant ecological settings that interacts with such a child. Ecological settings such as people, homes, family, neighborhood, community, play-grounds and schools when working together, have a potential of allowing child to learn. From the preceding statement, it appeared that the Ecological Model of Child Development attempted to explain the existing relationships between an active child, including children with hearing impairment, and the connections and interactions occurring between and among persons, objects and symbols in the child's ecological environments do influence the growth and development of such a child. It provided a framework on which the connections and interactions between and among homes, families, communities and schools directed at supporting the academic performance of a child, could be centered. Bronfenbrenner (1979) and Bronfenbrenner & Morris, 1998's work in fact, provided insights on how the model could contribute to the enhancement of the connections and interactions within the immediate and distant ecological environment of children with hearing impairments in order to enrich the child's experience and promote school successes rather than school failures.

II. REVIEW OF RELATED LITERATURE

2.1. Academic performance of learners with hearing impairment

Students with hearing impairment had been found to have poor academic performance. Migehe (2015) carried out a study to analyse the academic performance of students with hearing impairment in secondary schools in Tanzania. The findings indicated that a large number of students with hearing impairment had poor academic performance for various reasons, including lack of trained teachers, lack of common medium of communication as well as shortage of learning

materials and specialized equipment for students with hearing impairment, lack of in-service training and motivation for teachers of students with hearing impaired students. However, the above study was carried out in Tanzanian schools, it might not reflect the academic performance of learners with hearing impairment in Zambia; it could be different.

Contrary to a study by Migehe (2015), research conducted by Mustafaa, et al (2017), found the academic performance of learners with hearing impairment to be as high as their counterparts without hearing impairment. In as much as this study eradicated pervasive beliefs that deaf perform lower than their hearing counterparts because of their disability to hear, Examination Council of Zambia 2019 and 2020 examinations results analysis for learners with hearing impairment showed academic under-performance.

However, some scholars had observed that across all subject areas, having attended regular secondary schools and having better spoken language, academic performance of hearing impaired learners is associated with higher test scores. This could be seen from a paper presentation, by Marschark, et al (2015) on Predicting the Academic Achievement of Deaf and hard-of-Hearing Students, it was shared that the academic achievement of deaf and hard-of-hearing (DHH) students was the result of a complex interplay of many factors. These factors included characteristics of the students, characteristics of their family environments, and experiences inside and outside school. This paper examined the relative importance of such characteristics to U.S. Deaf and Hard of Hearing secondary students' academic achievement as indicated by the Woodcock-Johnson III subtests in passage comprehension, mathematics calculation, science, and social studies. Data was obtained for approximately 500 DHH secondary students who had attended regular secondary schools or state-sponsored special schools designed for DHH students. Across all subject areas, having attended regular secondary schools and having better spoken language were associated with higher test scores. Significant negative predictors of achievement varied by type of subtest but included having an additional diagnosis of a learning disability, having a mild hearing loss, and being African American or Hispanic. In as much as these ideas had important implications for policy and practice in educating DHH students as well for interpreting previous research, most recent studies on academic performance of learners with learning impairments had mainly focused on one or two subjects (Hrastinki et al, 2016 and Zahida, 2020). In that case, an academic performance description based on one or two subjects before making a conclusive description on the academic performance of learners with hearing impairment.

Further, McAnally et al (2017), agreed with Marschark, et al (2015) that the academic performance of hearing impaired learners was as good as those with normal hearing, as long as they had early access to language. He pointed out that "early access to language was essential for normal academic success in both deaf and hearing children" (p. 6-7). He added that it

was therefore recommendable that the parents of the deaf ensured that their children were exposed to language by seeking to attain training so that they were able to communicate with their children. It was however important to realize that most parents of children with hearing impairments did not even know signed English. In as much as they had a role to play, teachers needed to do more because they are experts.

Additionally, a study by Mwangi, et al (2020), revealed that hearing impaired learners perform well in academic tasks but with motivation. This was established after a research to find out whether there was a relationship between selected home environment factors and academic achievement motivation among pupils with hearing impairment. The findings suggested that academic performance of hearing impaired learners is usually high when parents, teachers and educationists of learners with hearing impairment ensure that the learners are motivated to achieve success. Indeed motivation plays an important role in improving academic performance but there was need to study those motivating practices in achieving academic performance for learners with hearing impairment.

2.2. Challenges affecting academic performance of learners with hearing impairment.

Studies had shown that hearing impaired learners had challenges in composition writing and answering comprehension questions. Omondi, et al (2016) carried out a study on challenges faced by the hearing impaired learners in composition writing and in answering comprehension questions in English language lessons in Kenya. The research established that the Hearing Impaired faced challenges in composition writing and in answering comprehension questions in English language lessons. However, this study focused only on composition writing and comprehension. There was need to consider other academic areas to fully understand the challenges affecting academic performance of learners with hearing impairment.

Further, learners with hearing impairment had been found to have challenges communicating with some of their teachers. Musonda (2017) conducted a study which sought to examine emerging factors affecting the academic performance of deaf and hard of hearing learners at Chileshe Chepela Wansongo Special Secondary School, Kasama, Zambia. The results of the study revealed that teachers of learners with HI had limited skills in the appropriate mode of communication and so the teaching and learning processes were negatively affected, thereby leading to poor performance of the learners in the final examination. Besides that, learners with HI were also reported to have faulty reading comprehension and writing skills. These findings were in agreement with Omondi, et al (2016) findings. Teachers indicated that pupils with HI tended to have challenges in understanding examination questions and this contributed to their underperformance. The study also found that the curriculum

which was being offered to learners with HI in most special schools was unsuitable for them in the sense that it was too bulky. Musonda (2017) noted that a bulky curriculum for learners with hearing impairment posed a challenge to their academic performance. However, Musonda (2017) did not describe in specific terms what a suitable curriculum should contain, to address the challenge; he merely stated that it should not be bulky.

Further research had shown that learners with hearing impairment had challenges in Science Subjects. One such research was carried out by Zakia, et al (2018). This study was aimed at describing the challenges in educating deaf children in science subjects. Sources of research data were teachers, students and Headmaster. The result showed that there were some challenges experienced in academic achievement of learners with hearing impairment in Natural Science, which included limited capability of hearing and lingual understanding, many abstract concepts in science subject, textbooks that were not in accordance with the lingual characteristics of children with hearing impairment, the lack of teacher's ability to simplify the sentences in the subject and the inadequacy of specialized learning media for deaf children. This study therefore recommended that teachers simplify abstract science concepts for learners but Zakia et al (2018) needed to realize that many of science concepts did not even have signs in English. There was need to find a way of dealing with that challenge.

2.3. Strategies for improving academic performance of learners with hearing impairment.

Among many strategies for improving academic performance for learners with hearing impairment were; Social, affective, memory, and cognitive strategies. Ronsani (2019) carried out a study to find out the learning strategies used by learners with hearing impairment and factors that influence their academic achievement. The research revealed four learning strategies which were used by Mawar, a student, namely; social strategies, affective strategies, memory strategies, and cognitive strategies. In Social strategy, deaf and hearing impaired students do not receive material directly from the teacher when explained; they only accept material given by the teacher through friends and then learn from what friends explain. The affective learning strategy: this utilises learners' motivation to learn. The memory strategy: it is reading little by little to memorize the materials. Cognitive strategies help learners process and use the language for learning or for accomplishing a task involving the language, for example, watch TV in English, listen to radio/CDs in English, use English computer programs. In this study only one participant was used and therefore the teaching strategies that worked for that learners might not work for others; generalization of strategies for improving academic performance for the hearing impairment was not possible given the fact that the study involved only one respondent.

Further, studies aimed at investigating the impact of using virtual labs on students' achievement and as well as their attitudes towards science and learning by virtual lab, found virtual labs not to have impact on students' academic achievement. One such study was carried by Ambusaidi, et al (2017), on the Impact of Virtual Lab Learning Experiences on 9th Grade Students' Achievement and Their Attitudes towards Science and Learning by Virtual Lab. Ambusaidi et al (2017) however found that in the current era, technology plays a major role in the development of different learning environments providing educational atmosphere that stimulate students and motivate them for better learning (Simui, Kasonde-Ngandu and Nyaruwata, 2017; Muleya, Simui, Mundende, Kakana, Mwewa & Namangala, 2019; and Simwatachela-Simui, Simui, Kakana, Manchishi, 2020). Therefore, active and meaningful learning conditions are likely to accomplish with virtual environments due to the development of virtual/computer tools nowadays. Although using the virtual lab did not show a positive impact on academic achievement, it had had a clear impact in raising their attitudes towards it. It was further found to decrease the level of abstractness that usually accompanies normal or traditional chemical labs works and helps the students to interact both with theoretical and practical knowledge. Hand on activities also is an inseparable part of the nature of science, and it is an interesting and important part of learning science because students in this type of activities working with real equipment. The only way to acquire these fine skills is often through actual hands-on experience (Potkonjak et al, 2016). The virtual lab was found to provide opportunities of diversifying of activities and the use of various laboratory instruments in different experiments. The students have chances to carryout experiments including testing the cases, observing, and recording the results in a peaceful and safe environment. This study showed that a virtual lab was just as good as the traditional laboratory at teaching concepts in chemistry. However, there was need to find out if a mixed system that involved a lab consisting of real (authentic, physical) equipment and virtual equipment, "co-present" at the same time would improve understanding of science concepts and in turn improve academic performance (Potkonjak et al., 2016). Besides, this study focused on 9th graders, what about 12 graders?

Additionally, a study conducted on educational effectiveness of the 5E model for scientific achievement of students with hearing impairment strategy by Zahida (2020), revealed that hearing impaired children can perform better if they were taught through approaches promoting construction of knowledge. It was concluded that hearing impaired children could perform better in science if they were taught through approaches promoting construction of knowledge, such as in the 5E model. Since this study was conducted outside Zambia, there was need to find out whether those approaches which promote construction of knowledge were being used in Zambian schools and Munali Secondary in particular.

Further, a study was conducted by Akellot and Bangirana (2016) on association between parental involvement and academic achievement of deaf children at Mulago School for the deaf, Kampala, Uganda. The study sought to study the association between parental involvement and academic achievement among deaf children in Uganda. The results of this study found no association between parental involvement and academic skills achievement of the deaf children. However, Mc Anally et al (2017), noted that parents play an important role in exposing their children to early language which is foundational in academic achievement.

Furthermore, advance organizer teaching strategy has been found to improve students' academic achievement. Tete (2020) investigated the effects of advance organizer on academic achievement and retention of hearing-impaired students in Rivers State, Nigeria. The findings revealed, among others, that advance organizer teaching strategy improved students' academic achievement; male students performed better than females in achievement; advance organizers enhances retention ability to a large extent. There was however need to find out whether advance organizer was one of the strategies used in Zambian Schools and Munali Secondary to be specific. If so, could the academic performance be any better?

III. METHODOLOGY

3.1. *Research Design*

A qualitative case study was applied. The instruments in data generation were structured interview guide and observation check list. Data was generated from 14 participants; 1 head of department – special education, 7 teachers for learners with hearing impairment, and 6 learners with hearing impairment. All the participants were sampled using the purposive sampling procedure.

3.2. *Trustworthiness and Ethical Considerations*

The researchers sought ethical clearance from the University of Zambia. Moreover, all the information that were collected was strictly treated as confidential and were not used for any purposes other than the intended one. Additionally, consent was sought from the respondents and the researcher ensured that the subject participants who voluntarily participated in this study and maintain an open and honest approach to the study. The consent form was given and signed by the respondents. The names of the participants was protected and kept confidential and if the participant wished to withdraw, they were free to do so.

IV. PRESENTATION OF FINDINGS

The findings of this study were presented in line with the research questions:

- i. How is the academic performance of learners with hearing impairment at Munali Secondary School?

- ii. What challenges affect academic performance of learners with hearing impairment at Munali Secondary School?
- iii. What strategies are in use for improvement of academic performance of learners with hearing impairment at Munali Secondary School?

4.1. Academic performance of learners with hearing impairment

The study established the academic performance of learners with hearing impairment at Munali Secondary School. The findings revealed that learners with hearing impairment were underperforming in most of the subjects. The worst performance was in science subjects. In response to the question of how the academic performance of learners with hearing impairment at Munali Secondary School was,

HOD1 made the following submission:

The academic performance of learners with hearing impairment at this school is not good. Very few learners with hearing impairment pass grade 9 and 12 exams compared to their counterparts without hearing impairment.

Teacher TR1's submitted that,

The performance is not very good. These learners need to spend an extra year in the same class for them to perform well. That is what is done in other schools for learners with hearing impairment.

Learner LWHI1 indicated that she had challenges in most of the subjects. As in the verbatim below:

Most of the subjects are difficult. I do pass some subjects but not science.

Learner LWHI3 explained that:

I try but I don't understand most of the things in science. Science is very difficult to me. I don't do well in science

4.2. Challenges affecting academic performance of learners with hearing impairment at Munali Secondary School

This study established a number of challenges affecting the academic performance of learners with hearing impairment as described by the Head of department, teachers and learners themselves. The common challenges included; delayed language development, unfriendly curriculum, some teachers' incompetence in Sign Language, lack of learning materials in the familiar language (Sign Language) and inability to read and write.

Asked what challenges affected academic performance of learners with hearing impairment at Munali Secondary School,

HOD1 submitted the following:

These learners sir, experience delayed language development. This is because in most homes, where the children come from, their parents and siblings don't use Sign Language due to the

fact that they don't know. Because of that, these children are only exposed to sign language when they start school.

Teacher TR4 stated that;

The deaf delay in learning a language. Most of them meet sign language when they start school. This is why I think they should be starting school early so that they are exposed to sign language early in life.

Teacher TR2 made the following submission:

The curriculum is very unfriendly. What I mean is that it doesn't take into consideration the unique needs of learners with hearing impairment. Learning materials for the deaf are not in sign language.

Teacher TR1 echoed the view by T2. She gave the following verbatim;

The problem, sir, is that the curriculum is not tailored to suit the learning needs of deaf pupils. The current curriculum is favourable for pupils who are not deaf. Not these... it is too rigid.

Teacher TR 5 submitted the following:

When I joined, I was not competent in Sign Language but now I am improving by learning from the learners themselves. The learners themselves do teach as you interact with them. That is how I learnt.

Teacher TR5's answer was as follows:

One of the challenges is that some of us teachers who teach the deaf don't know sign language very well. It affects learning. Some end up teaching in English before they learn sign language. This is a big problem. Learners who are completely deaf can't get anything during lessons.

Learner LWHI5 stated that;

I don't understand some things. That is why I have difficulties, especially in Mathematics and science. The problem is that I don't understand somethings that the teacher signs.

Learner LWHI explained;

We don't use those things. Those things make me feel uncomfortable. It is better like this. Those things also make noise.

Learner LWHI4 shared the view of LWH1 as in the following verbatim:

I only know of hearing aids... that is all. We don't have anything else related to that. Some time back, we saw people who brought hearing aids but I was not given anything.

Teacher TR3 attributed that;

The academic performance of these learners is not good. Most of them reading and writing is a big problem. I mean literacy levels...very low! You know.... the same reading and writing problems affect performance significantly.

4.3. Strategies for improving academic performance of learners with hearing impairment

The study revealed a number of strategies, put forward by respondents in response to a number of questions. The strategies included: early identification and assessment, conducting Continuous Professional Development meetings for teachers to improve their skill in sign language, spending two years in one grade, use of class discussion to teach, use of sign language as a sole language of instruction, preparing teaching and learning materials in the familiar language, and improving the training of teachers of learners with hearing impairment in universities and colleges.

In response to what strategies are in use for improvement of academic performance of learners with hearing impairment at Munali Secondary School,

HOD1 responded that;

I think early identification and assessment can help so that help is given before it is too late. The other thing, we should be having more of CPDs to help improve teachers' skills in sign language.

Teacher TR6 explained that;

Sign language should be used to produce learning materials and also as a language of instruction. The current situation is not okay...there are no learning materials in Sign language. All learning materials are in English.

Teacher TR3 explained that;

Preparing learning materials in a familiar language would help improve understanding of concepts. Not the way things are now... no books in sign language.... Nothing. How do learners improve like that?

Teacher TR3 submitted:

Question and answer method is very effective. It is very engaging...learners participate a lot during lessons.

Teacher TR 2 submitted that;

I have found class discussion to be good.... Class discussion, not group discussion which is usually difficult to manage when it comes to learners with hearing impairment.

Teacher TR1 echoed the answer by TR2. The submission was as follows:

This...mmm... this, discussion method. Where you put the pupils in small groups but the teacher should make sure he or she monitors. Without that, pupils resort to making noise.

Learner LWHI2 said;

I like it when we discuss as a class not in groups. At least that way, we help each other. Not where you are asked to do something alone. If you have no idea... you can't do anything.

Teacher TR4 suggested the following strategies:

Learners should be made to spend two years in one grade, given the hearing challenges they have. There should also be emphasis on reading and writing at primary level. Teachers should improve their signing skill; most of them just learn from pupils as they teach. Teacher training institutions should do more in their training of teachers for the HI.

Learner LWHI1 explained that;

Teachers should be showing us what they are teaching. Like a video. When I see what the teacher is talking about, it helps to understand. Most of the time we have no picture of what the teacher is teaching. That is the problem.

Learner LWHI6 shared that;

There are times when we are learning about something in Geography then the teacher brings his laptop and shows us a video. It becomes easy to understand.

Teacher TR3 submitted that;

Children here don't have any technological devices to help them learn.... Hmm...I remember of one or two who were using hearing aids but they stopped using them. They didn't like them. The children were saying that those things were making noise. However, those things are very helpful.

Teacher TR2's response was as follows;

We don't have any technological devices here. This time I don't see any child using not even those... hearing aids. Some time back there was an organisation that used to donate hearing aids but not anymore. Let me just say there is nothing.

V. DISCUSSION OF FINDINGS

5.1. Academic performance of learners with hearing impairment

The study established the academic performance of learners with hearing impairment at Munali Secondary School. The findings revealed that learners with hearing impairment were under-performing in most of the subjects. The worst performance was in science subjects.

HOD1 and teacher TR1's submissions were in agreement with the ecological systems theory, in that loss of the sense of hearing impacts negatively on the academic performance of the learners. According to Bronfenbrenner (1990), the body makes up the Microsystem layer. Its effects on other parts of the Microsystem are obvious. The body is the life support system, with which people perceive and interact with the environment.

Therefore, the hearing impairment has a negative impact on academic performance of learners. No wonder children with hearing impairments at Munali were found to underperform.

HOD1's submission was however inconsistent with the findings by Mustafaa et al (2017), whose research revealed that learners with hearing impairment scored as much as their

counterparts without hearing impairment. However, the current research's findings that learners with hearing impairments underperformed, is consistent with Migehe (2015) and Marschark (et al (2015) research results which revealed that the academic performance of learners with hearing impairment was poor. Therefore, most of the studies Hrastinski et al (2016); Zahida (2020), and many others, they were consistent with the current research findings, which considered more than two subjects, that learners with hearing impairment, at Munali Secondary School, underperformed academically.

As a matter of fact, this researcher took time to review results analyses for 2019 and 2019 for learners with hearing impairments at Munali Secondary School. Both years showed underperformance whereby no learner with hearing impairment got marks in divisions one and two. The ones that managed to pass were in divisions three and four. This was another solid proof of how learners at Munali Secondary School were under-performing.

The submission by learner LWHI1 and learner LWHI3, that they had difficulties in most of the subjects, especially in science subjects was consistent with Zakia et al (2018)'s findings that learners with hearing impairment had challenges in science subjects. As a matter of fact, teachers observed in science struggled to find precise signs to explain certain concepts or scientific terms. This challenge by teachers had a negative impact on learners' academic performance. If concepts are not communicated well to learners with hearing impairment it would be very difficult for them to create a mental picture of such concepts. This then is a disabler to the academic performance of learners with hearing impairments. Therefore, teachers' need to be competent in the language of instruction cannot be over emphasised (Simui, Kasonde-Ngandu, Cheyeka, Simwinga and Ndhlovu, 2018; and Simui, Kasonde Ngandu, Cheyeka and Makoe, 2019).

5.2. Challenges affecting academic performance of learners with hearing impairment at Munali Secondary School

This study established a number of challenges affecting the academic performance of learners with hearing impairment at Munali Secondary School as described by the Head of department, teachers and learners themselves. The common challenges included the following: delayed language development; rigid curriculum; some teachers' incompetence in Sign Language; non availability of Assistive Technology devices; lack of learning materials in the familiar language (Sign Language); and reading and writing difficulties.

The submission by HOD1 that one of the challenges that affected academic performance of learners with hearing impairments was delayed language development, agreed with another submission by teacher TR4.

The above submissions by both HOD1 and teacher TR4 were consistent with Bronfenbrenner's Ecological systems theory. This could be true because the family, being part of the

Mesosystem, is the closest most intensive, most durable, and influential part of the Mesosystem (Bronfenbrenner, 1990). The influence of the family extends to all aspects of the child's development, language inclusive.

If a family does not support a child with hearing impairment to develop a language, that has a negative impact on his or her academic performance. Family and home is the primary environment for language. However if family members do not support language learning for children with hearing impairments, they end up experiencing delayed language development which in turn affects their academic performance negatively. However, in the case of family members to children with hearing impairment, it is different because they also usually do not know standard Sign Language for them to help a child.

Since most family members of children with hearing impairments do not know Sign Language, children with hearing impairments do not receive necessary support to develop a language which they would later on use in academic life. The submission by HOD1 and teacher TR4 were similar to the findings by Musonda (2017), who also established that the major challenge affecting academic performance of learners with hearing impairment is language deficit. Although the foregoing view is contrary to Bangirana (2016)'s findings that there was no association between parental involvement and academic achievement of deaf children. However, the current research findings on the role of parents and family members in general in exposing learners to language early in life, is in harmony with Mc Anally and Marschark (2015), who also found that parents play an important role in exposing their children to early language which is foundational to academic achievement.

The responses by teacher TR2 and teacher TR1, that the 2013 Zambia curriculum, for example, was not tailored to suit the needs of learners with hearing impairment resonated well with the research conclusions by Migehe (2015) who stated that shortage of specialised learning materials and lack of common medium of communication contributed greatly to poor academic performance of learners with hearing impairment. Indeed, the Zambian 2013 curriculum is very rigid in that it does not provide for learners with hearing impairment to answer examination questions in sign language. It however requires them to answer in English, a language in which instructions were not made during their time for learning. This could be taken to be deliberate since those assessing are full aware of the communication limitations of learners with hearing impairments and therefore should consider some modifications to assessments in order to avoid disadvantaging learners with hearing impairments.

With regard to learning materials that are used to implement the 2013 Zambian curriculum, all of them are in English. That was total lack of consideration on the part of curriculum developers who never thought about how materials for implementing the curriculum of LWHI should be in order for

them to respond to those learners needs. Learners with hearing impairment need specialised materials in curriculum implementation.

Teacher TR5 attributed the academic under-performance of learners with hearing impairments to some teachers' lack of fluency in sign language – a language used to deliver lessons. The above response by teacher TR5 was similar to that of HOD1 who, in his response, explained that one of the challenges was that some of the teachers who were teaching the deaf didn't know sign language very well.

That was why Learner LWHI5 stated that he did not understand some things during lessons, especially in Mathematics and science. Like earlier alluded to, how could learners understand what they were learning when their teacher was also learning the language of instruction. Some teacher observed, struggled to explain certain concepts in sign language. They claimed that sign language did not have certain science terminologies. So, terminologies which were considered not to have signs in Sign Language were finger spelled but if learners did not understand, they were left out.

The other challenge was lack of Assistive Technologies. There were no ITs available to learners with hearing impairments at the school. This revelation was unfortunate because there are a various ATs that could mitigate the challenges learners with hearing impairments were facing and subsequently lead to improved academic performance. Like other scholars have observed, Technological and assistive developments have the ability to change how deaf people experience the world (Ferguson, Kitterick, Chong, Edmondson-Jones, Barker, & Hoare, 2017). It is important to keep up on the latest developments, especially for learners who are directly affected by hearing loss.

5.3. Strategies for improving academic performance of learners with hearing impairment

The study revealed a number of strategies put forward by respondents in response to a number of questions. The strategies included: early identification and assessment, preparing learning materials in Sign Language, spending two years in one grade, use of Assistive Technology devices, intensify Continuous Professional Development meetings for teachers to improve their skill in sign language, improve training for teachers of learners with hearing impairment, use of sign language as a sole language of instruction, preparing learning materials in the familiar language, improving the training of teachers of learners with hearing impairment in universities and colleges and use of effective methods of teaching, like; class discussion and inquiry methods.

Teacher TR6 and teacher TR3 explained that Sign language needed to be used to produce learning materials and also as a language of instruction. Teacher TR6 and teacher TR3's submissions were consistent with Migeha (2015), whose research revealed that learners with hearing impairment lacked specialised materials. Meaning that learners with

hearing impairments were made to follow the regular curriculum the way it was designed for the ordinary learners with no adaptations at all. That contributed to poor academic performance of learners with hearing impairment. Indeed this is what was found even at Munali Secondary School. This is why many teachers interviewed advocated for the curriculum development centre to consider producing learning materials in Sign Language – a familiar language.

HOD1's submission that early identification and assessment could help so that help was given before it is too late. The submission by HOD1 that early identification and assessment was critical, could indeed be helpful in that some hearing impairments if identified quite early in the life of a child, their impact on academic performance of learners would be mitigated. Unfortunately in Zambia, identification and assessment centers are very few. That makes them inaccessible to children suspected to have disabilities. That has a negative impact on placement of children with hearing impairments and their academic performance later in school. That is because assessment informs the choice of medium of instruction. The most disadvantaged are those in rural areas.

Regarding the need to have more of Continuous Professional Development meetings, like HOD1 observed, it would indeed help many teachers improve their skill in Sign Language. That submission agrees with Migeha (2015), whose research established that in many schools for the hearing impairment, where he carried out his study, there were no adequate in-service training for teachers, especially in Sign Language. Therefore, the need for teachers at Munali Secondary School to perfect their skill in sign language, which is the language of instruction, would impact positively on the academic performance of learners with hearing impairment.

Looking at the above finding in the lens of the Mesosystem layer of the Ecological systems theory (Bronfenbrenner, 1990), the school is a part of the Mesosystem. This layer should interact well with the Microsystem layer where a child with hearing impairment is a part. Healthy interaction would mean schools providing an enabling environment for academic performance of learners with hearing impairment. When teachers are competent in sign language, it would make it easy for learners with hearing impairment at Munali Secondary to perform well.

Teacher TR3 submitted that she found Question and Answer method very effective. The response by teacher TR3, agrees with Zahida (2020)'s research findings that learners receiving inquiry based instructions perform better academically. One such inquiry based method is basing instruction on the 5E model for scientific achievement of students with hearing impairment. The study revealed that hearing impaired children can perform better if they were taught through approaches promoting construction of knowledge.

Teacher TR2 explained that he found class discussion to be good. According to him, Class discussion and not group discussion; which was usually difficult to manage when it

came to learners with hearing impairment was more effective. Indeed class discussion method of teaching was observed to be effective and it was easy to control the discussions unlike group discussions which sometimes are difficult to ensure maintenance of order.

Teacher TR4's submission that teacher training institutions should do more in their training of teachers for the HI is worth considering. Indeed colleges and universities training teachers for learners with hearing impairments need to revise their curriculum so that it is made to focus on improving the skills of teachers in sign language. This is true because most of the teachers coming from higher institutions of learning do not seem to be adequately prepared to teach in sign language.

Munali Secondary did not have any technological devices to help them learn. Teacher TR3 actually remembered two children who had hearing aids which they later stopped using claiming that were making noise. She stressed the importance of ATs in helping LwHI learn and lead to improved academic performance.

Despite assistive technologies for the hearing impaired learners not being available, only limited to hearing aids, the deaf community faces challenges that most people are not so familiar with or experience if one is a hearing person. Technological and assistive developments have the ability to change how deaf people experience the world (Ferguson, Kitterick, Chong, Edmondson-Jones, Barker, & Hoare, 2017). It is important to keep up on the latest developments, especially for learners who are directly affected by hearing loss. Unlike the situation at Munali Secondary School, there are various Assistive listening devices available on the market, which if utilised could easy learning and access to information for learners with hearing impairments.

VI. CONCLUSION AND RECOMMENDATIONS

The study has revealed that the academic performance of learners with hearing impairment at Munali Secondary School is poor. The challenges that affected their academic performance are: Language deficit and delay; unfriendly curriculum; some teachers' incompetence in the language of instruction (Sign Language); lack of common language of communication as well as shortage of learning materials and specialized equipment like hearing aids.

6.1. Recommendations

- i. Education for learners with hearing impairment has to be regarded by education stakeholders as an investment for the society in order to build an inclusive society with independent human beings and for future human development and human capital.
- ii. MoHE, through the directorate of Teacher Education, in collaboration with all stakeholders providing training in Special Education, have to review the current Teacher Education Curriculum for the Deaf to intensify content and competences in Sign Language skills.

- iii. The central government should train more teachers who are specialized in the teaching of student with hearing impairment.
- iv. Government through the MoGE should ensure that there is a deliberate policy to ensure that children with hearing impairments are assessed and identified early so that they start school early.
- v. The curriculum should be designed in a way that makes it friendly to learners with hearing impairments.
- vi. Government through the MoGE should ensure that basic ATs for learners with hearing impairments are made available.
- vii. The government through the Ministry of General Education should establish a clear policy on the language of instruction for all schools of learners with hearing impairments in the country, at secondary level
- viii. It is recommended that the government keep improving incentives, privileges and motivation through good salaries,

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