

Stakeholders' Views on Use of Sign Language Alone as a Medium of Instruction for the Hearing Impaired in Zambian Primary Schools

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Abstract

The study examined views of stakeholders on the use of Sign Language as a medium of instruction in the learning of hearing impaired in primary schools of Lusaka, Zambia. A case study design supported by qualitative methods was used. The sample size was 57, consisting of teachers, pupils, curriculum specialist, education standards officers, lecturers and advocators on the rights of persons with disabilities. Purposive sampling techniques to selected the sample, interview and focused group discussion guides were tools for data collection. The study revealed significant differences in views of stakeholders on use of Sign Language alone as medium of instruction. While most participants felt sign language alone was ideal for learning, others believed learners needed exposure to total communication (combination of oral and sign language) to learn better. Those who felt using sign language alone was better, believed the practice had more positive effects on learning and that use of oral language, total communication often led to confusion in classroom communication among learners with hearing impairments. Participants who opposed use of sign language alone were of the view teachers: were ill-prepared; signs were limited in scope; education system lacked instructional language policy and learning environment were inappropriate to support use of sign language alone in the learning process. The study recommended strengthening of training of sign language teachers and introduction of sign language as an academic subject before it can be used as the sole medium of classroom instruction in the Zambian primary schools.

Keywords: *Sign Language; Medium of Instruction; Hearing Impairment; Language policy*

Introduction

Persons with severe hearing impairments are naturally unable to hear and this is one of the reasons they prefer to use Sign Language in their everyday communication over spoken language. Sign Language by design is a language of the hearing impaired which uses manual communication to convey meaning and information as opposed to acoustically conveyed sound patterns (Bunyasi, 2010). This form of communication is used in the day to day communication among the hearing impaired as well as a medium of instruction in educational cycles. Stein, (2010) reported that Sign Language was a language expressed through a combination of hand shapes and facial expressions. The language itself contains structures and processes that spoken languages do not seem to have. Additionally, it has grammatical structures which are suitable as visual medium but not necessarily for use in oral language communication.

According to Smith (2000) and Bunyasi, (2010), Sign Language, in linguistic terms, is as rich and complex as any oral language despite the common misconception that it is not a real language as such. Smith (2000), believes that, it is important for one to understand factors surrounding its usage as a mode of communication to appreciate its increasing usage as a medium of instruction in the education of the deaf. Wakumelo and Miti, (2010), suggests that hearing impaired children need to be taught Sign Language for them to use it effectively in the learning process. The study reports that Sign Language needs to be learnt as a language and not necessarily depending on general usage of common signs used in the community. The concept of Sign Language in the educational sense refers to the use of Sign Language in the education system as a medium of instruction to facilitate teaching and learning (MoE, 1977). In relation to the hearing person, learning to speak a language starts with learning of concepts and associating them with objects and symbols as agreed upon in the community. Mandyata, (2011), believes the hearing impaired needed to be taught starting with the support of local signs before exposed to national signs for them benefit from its use a medium of instruction. Unfortunately, this is not often the case for hearing impaired children born from hearing parents. Deaf children often are deprived of any form of organized language during the most critical phase of language development more so between the ages of 0 to 3 years. Such children find themselves exposed to a mixture of modes of communication which often leave them confused and unable to make sense of the communication. Smith (2000) argues that hearing impaired children, need longer time to learn their natural language-sign language to compensate for the period they had no access to any meaningful language for language acquisition and development.

The National Research Centre of Kenya, (2012) reports that supporting young children's use of Sign Language as a medium of instruction includes: building of new concepts on existing knowledge and experience; exposure to language objects and symbols in the environment and involvement in daily activities. Although it is recognized that children's understanding of concepts early in development, may be intuitive while a lack of explicit awareness of concepts in Sign Language tend to make it difficult for them to make use of their prior knowledge. It equally makes it difficult for them to form essential connections with language symbols and objects they may be encountering with in different environments. Given the research with hearing impaired children, the National Research Centre of Kenya, (2012) showed poor academic performance

among the deaf partially due to the inability of teachers to expose the children more to Sign Language. It is critical that the factors that seem to have effects on the use of sign language and achievement of learners with hearing impaired, are not fully investigated. The present study therefore, has the potential of showing the existing gaps in instructional communication and has the potential of showing specific areas of weaknesses that can be addressed early enough in the acquisition and development of sign language in the education of children.

Mbewe (1980), observes that Sign Language gave children with hearing impairment normal academic development and as such teachers who were assigned to teach the hearing impaired needed to not only be trained in Special Education, but also Sign Language to enable them to communicate effectively with learners. Sign Language bridges the communication gap and creates an emotionally secure social and learning environment. Most of the children who are hearing impaired are born into hearing families. Thus, from the onset they have no mentors or role models to help them acquire a sign language as they grow but depend on hearing mentors (Wakumelo, 2009). The crisis continues as these children enter school where it is now mandatory for pupils to learn in their mother tongue of the hearing learners from grade one to two, using the National Break Through to Literacy (NBTL) program. This is done before transitioning to learning in English in later grades (MoE, 1996; 2013). Several studies, such as, those conducted by Cummins (2000) and Drasgow (1998) have shown that using the mother tongue in learning facilitated learning of literacy skills in the second language. This however, does not seem to agree with the learning of the hearing impaired whose mother tongue remains sign language and local sign varies from home to home.

In this respect the Zambian government in 2003, embarked on a language policy through the NBTL experiences. According to the current instructional policy children are supposed to be taught literacy in their familiar language between grades one and four before an exposure to a new language. The pupils are expected to use skills acquired through a familiar language to learn the second language, such as, English Language. Pupils have to learn the vocabulary, culture and grammar of their familiar tongues before learning a second language. This however, did not seem to be the case for pupils with hearing impairments. In schools for the hearing impaired where this policy was attempted, what teachers taught was the local sign language- signs used by the local community as presented in Cibemba, Citonga; KiKaonde; Silozi or Cinyanja (major local Zambian languages) and not necessarily the official sign language. What really happened was that teachers used local signs to teach in a particular language of the area. Often this did not go well nor properly blended to guide the learners with hearing impairment. It left learners with hearing impairment more confused in their communication (Payne, 2005; Wakumelo, 2009). This led to a practice whereby, Cibemba speaking areas teachers taught the pupils with hearing impairment signs which were Cibemba. oriented or those with Kikaonde background by virtue of their oral base and nature making linkage with official sign language (a mixture of British and American sign language) used in formal classrooms quite difficult for the learners to assimilate. Andrews et al., (2002) urges that sign language alone was limiting as a medium of instruction. The studies appear to support the idea of using total communication approach (a mixture of oral and sign language) with inclusion of local signs in classroom practices.

According to Wakumelo and Miti, (2010), the hearing impaired learn by learning concepts in Sign Language and not by using Sign Language which was used by the community they live in. The hearing children in speaking communities learnt concepts by hearing and not necessarily through visual impression of the words and spelling, unlike the hearing impaired who have to depend on visual images which often come with their own challenges of interpretation of what is

seen into an expressive language. Bragiel, et al., (2016); KSL and KSDC (2006) proposed that the hearing impaired need to be taught using sign language as a medium of instruction right from their on-set of academic life and beginning with localized signs for them to perform well academically. The current study believes that it is during such period that pupils need to build capacity and skills in sign language to understand concepts necessary for their academic advancement hence, the need to expose them to more localized signs before introducing them to official sign language.

In Zambia, the National Assessments in reading of 1999-2003 revealed low performance in reading among children with Special Education Needs (CSEN), including the hearing impaired (MoE, 2003). The assessment showed that hearing impaired learners were the lowest in reading compared to other disability groups. The survey cited syntactic differences between Sign Language and English Language as the major reason for the low performance in reading among the hearing impaired. In 2012, regional mock examinations pass rate for learners with hearing impairments in grades 7, 9 and 12 in most schools in Zambia, the performance of the hearing impaired ranged from 34% and 43% while that of other disability groups was above 50% (MOE, 2012). The poor performance of pupils with hearing impairment was associated with challenges in medium of instruction- inconsistencies in modes of communication, inability to read for comprehension and mismatch in between formative and summative assessment employed by teachers and the Examination Council of Zambia (ECZ) respectively (Chifinda & Mandyata, 2017). The study observed that during assessment of the hearing impaired written standard British English was used as a medium of communication while, learners with hearing impairment were accustomed to the deaf culture ie. telegraphic language. As a result, learners with hearing impairment found it difficult to read and understand the questions in assessment items to respond appropriately. Chifinda and Mandyata (2017) explanation was that most teachers of the hearing impaired did not have sufficient skills in Sign Language to use it as a medium of instruction. Hence, the dependence on total communication. Bowe, (1998) reports that most teachers of the deaf used as a result, oral language and pointing as modes of instruction because of limited sign language. These raises concern about appropriateness of language of instructions available in schools as well as the low achievement levels of the deaf in comparison with that of the hearing learners (Starczewska, et al., 2010).

Studies have begun to move an in-depth understanding of language of the deaf in relation to that of the hearing. Whitaker, (2000), for example, noted that, there are four stages of learning associated with verbal language but not necessarily supportive to sign language learning. These are; speaking, reading and writing. The children with hearing impairment do not start learning at stage one and two of the oral language learning process, but start learning at the spoken or verbal language stage and then proceed to the writing stage. This variation causes them to be disadvantaged because they have no transfer of skills from hearing and speaking (Harlan, 2011). As a result, such learners develop slow or poor reading and writing skills. Sign Language is supposed to compensate for hearing and speaking, less work is done to prepare them during their formative stage hence the failure to express themselves better in sign language. It is in view of this that the researcher sought to explore the views of various stakeholders on the call for use of sign language alone as a medium of instruction in selected primary schools for learners with hearing impairment in Lusaka in Zambia.

Problem

There has been an increasing concern on the part of various stakeholders about the use of total communication as opposed to Sign Language as a medium of instruction in the learning of learners with hearing impairment in Zambia (Mbewe, 1980; MoE, 1996). Wakumelo, (2009) reported that while the school system preferred the use of total communication in the learning of students with hearing impairment, learners with hearing impairment themselves felt more conformable with the use of sign language alone in during classroom practice. Although the concerns of the learners with hearing impairment over the language of instruction for the deaf has been documented in the available literature, little was known on the views held by various stakeholders on the call for use of sign language alone as a medium of instruction in classes for the hearing impaired in Zambia. The present study therefore, sought to explore the views of held by various stakeholders on the call for use of sign language as the only a medium of instruction in the learning of hearing impaired in primary school in Lusaka district in Zambia.

Objectives

The following objectives guided the study

- (i) To establish the views of held by various stakeholders on the use of Sign Language as the medium of instruction in classes for the hearing impaired
- (ii) To assess factors that might have led to the call for use of sign language alone as a medium of instruction in the learning of the hearing impaired
- (iii) To ascertain measures that may contribute to improved use of sign language as a language of instruction in the learning of the hearing impaired.

Research Questions

- (i) What views are held by various stakeholders on the use of sign language as the only medium of instruction in the learning of the hearing impaired?
- (ii) What factors might have led to the call for use of sign language as the sole medium of instruction in the learning of the hearing impaired?
- (iii) What measures should be taken to improve the use of sign language as a medium of instruction in the learning of the hearing impaired?

Significance

The significance of this study was that, it would help class teachers, school administrators, education managers and policy makers understand and appreciate the role of sign language as a medium of instruction in the learning of the hearing impairment. It was also hoped that the findings would provide guidance to ECZ and teachers on the best teaching and assessment practices amongst learners whose medium of instruction was mainly sign language. Additionally, the findings on appropriate medium of instruction would significantly help improve the delivery of classroom instruction through use of sign language to learners with hearing impairment in schools.

Topographical features of the site

Our research area was Lusaka district in Lusaka province of Zambia. It is one of the six districts in the province. The study province itself is one of the ten provinces in the Republic of Zambia and serves as the capital city of Zambia. As a country, Zambia is divided into 105 districts and 10 provinces (CSO, 2010). It is a land-locked nation. It is surrounded by several countries namely; on the southern front; Zimbabwe and Botswana; on western side; Namibia; Angola and

on the northern front; Tanzania; Democratic Republic of Congo and on the eastern front, Malawi and Mozambique. The country has approximately, 752, 614 square kilometers with a national population of 14.97 million (CSO, 2010). The study province has a population of 2, 907,111 of the 14.97 million people (CSO, 2010). Out of the total pupil population of 3, 818, 336 (primary and secondary level), Lusaka province, has 456, 125 pupils. Out of which 175, 329 were school going children including those with disabilities. 10, 323 of these were learning with disabilities of which 2,944 (17%) were learners with hearing impairment in the study district (MoE, 2013). The district itself has had a rich and eventful history over time starting from the colonial (British) rule. It has been a government administrative center, commercial and light industrial district. It reached its height of its glory in the late 2000s because of administrative, good road, air railway transportation system and commercial activities. The study district has been famous for its central-ness and easy connectivity with other provinces until the 2000s when its economy was on the decline because of low industrial, commercial activities and negative developments (low copper prices) on the London Metal Exchange market. The study area is currently one of densely populated part of Zambia with high level informal employment activities. Its population is highly dependent on informal sector with most of the people living below poverty datum line (less than a US \$ per day), a situation negatively impacting of social services such as health and education.

Theoretical framework

The study was guided by Naomi Chomsky's theory on language acquisition of 1977. This theory emphasizes on everyone having an inborn faculty for first language acquisition. At birth children always had brains whose neural circuits had linguistic information. Chomsky believes that if a child is nurtured well first language, acquisition and use is realized within the shortest time possible. This theory also emphasized that children think in their first language, therefore they should be exposed to rich environments that enhance their language early in life. Chomsky claims that the child possess an innate capacity for dealing with linguistic universals. The child generates a theory of grammar to help understand and produce an infinite number of sentences. He further emphasized that the child was biologically predisposed to learn any form language including sign language as the brain matures. Humans were believed to be "*powered*" for language development naturally and the environment simply triggered its emergence. This theory in a way, advocates for use of language as a medium of instruction including use of sign language. By implication it means that the first language for learners who are deaf-sign language naturally was better placed to serve as a medium of instruction than the oral language. The study recommends that at entry to the school, children should be exposed instructions based on the most familiar language. The study theory implies that with help of the indigenes signs the deaf children can be slowly but steadily moved to learn a national system of Sign Language.

Method and Materials

A case study design supported by a qualitative data collection method was used. This design was selected because it allowed the researchers to focus on a smaller unit, group or community relevant to the theme of the study (Marrian and Simpson, 1995). The approach allowed for a detailed and in-depth study in order to establish views of stakeholders on the use of sign language alone as a medium of instruction in the learning of the hearing impaired. The target population for this study consisted of teachers for the hearing impaired, curriculum specialists, and education standard officers, lecturers from two teacher training institutions preparing

teachers for the deaf and advocates for the rights of persons with hearing impairments from the study district.

The sample size was drawn from teachers and pupils with hearing impairments from selected upper primary schools of Lusaka, Zambia. The three selected schools and district gave a total of 57 participants. Out of this, twenty (20) were teachers, thirty (30) pupils, two curriculum specialists, one education standard officer from the Ministry of education, two lecturers from teacher training institutions and two advocates on the rights of persons with hearing impairment. In this study, purposive sampling procedure was used to select participants. These were selected on the basis that they had sufficient experience and a rich source of information to support the inquiry. Thus, pupils with hearing impairment and their teachers were picked from the three special schools and were subjected to purposive sampling. Purposive sampling was also used to select teacher trainers, curriculum specialists, standard education officers and advocates for the rights of persons with hearing impairment. This was a rich sample from where the researchers, choice a few individuals who were considered to be knowledgeable about the issue under study to make a more meaningful contribution (Morten, 1997).

The interview guides were used for teachers while focus group discussion guides were used on pupils. Class room observation checklist where teacher-participants were observed teaching in their respective classes. This was found to be quite resourceful, teaching method of study as well as pupils' participation and comprehension were found to be enriching. Interview guides were also used to provide guidance about what participants were saying. Data was analyzed using thematically. Qualitative analysis method employed involved reduction, editing and coding of data in readiness for a descriptive presentation of the findings. The emerging themes were categorized and presented descriptively as aspects of the findings.

Results and Discussion

We now present the findings of the study conducted from 2016 to 2017 on the views of stakeholders on the use of sign language as a medium of instruction in the learning of learners with hearing impaired. The findings as well as discuss are presented before and the conclusion. The study does highlight how our findings have addressed the knowledge gap identified earlier on the views of stakeholders on the use of sign language alone as a medium of instruction in classes for the hearing impaired in the Zambian schools.

Table 1: Personal Profile of Participants

S. No.		<i>Personal Profile of Participants</i>					
1	Gender	Male			Female		
		23 (40.4%)			34 (59.6%)		
2	Location of study school	High density		Medium density		Low density	
		Male	Female	Male	Female	Male	Female
		6	10	8	10	10	13
3	Age	15-24 years	25-34 years	35-44 years	45-54 years	55 & above	
		11 (19.3 %)	18 (31.6 %)	9 (15.8 %)	12 (21.1 %)	7 (12.3 %)	

5	Socio-economic <i>Status of family participants</i>	Self-employed	Formal Employment	Unemployed
		58 (59%)	33 (33%)	8 (8%)
6	<i>Place of living of participants</i>	<i>Rural</i>		<i>Urban</i>
		0		57 (100%)
7	Type of Family	<i>Nuclear Family</i>		<i>Extended family</i>
		9 (15.8 %)		48 (84.2 %)
8	Qualifications of non-learners participants	Primary Teaching Certificates	Secondary Teaching Diplomas	University Degrees in Teaching
		8 (14.0%)	32 (56.4%)	17 (29.8%)

Gender

Gender was one of the major elements considered during the study because, views of held by male and female stakeholders were considered significant in the use of sign language alone as a medium of instruction. We had fifty-seven (57) participants of which 23 (40.4%) were male and 34 (59.6%) were female participants

Location

The location of participants was yet another factor that was considered important for this kind of study. Out of the 57 participants 16 (10 females) were from high density areas; 18 (6 males) were from medium density while the reminder 23 (13 female) came from low density areas of Lusaka urban in Zambia.

Age

The age of the participants was equally considered to be significant in the present study. Because age of views of stakeholders had the potential of contributing to diverse views on subject of discussion, the study considered it. It was evident from the study that, majority of participants 18 (31.6 %) interviewed were aged between 25–34 years, followed by those between 45-54 years who made up of a study population of 12 (21.1%). The last category of participants represented were those aged 55 years and above, who made up 7 (12.3 %) the sample size.

Socio-economic Status

The socio-economic status of participants was also considered to be important in the time of interviews in that, it had a bearing on the quality of support available to learners on the use of sign language as a medium of instruction. Majority of the participants (58) 59% were self-employed (informal sector of Zambian economy), 33 (33%) were in regular employment (formal sector of the economy eg. teaching) while the remaining eight (8%) of the participants were unemployed (mostly serving as housewives or house husbands in homes). Those who said were self-employed were mainly engaged in work as: herbalists; marketers; street vendors-mainly selling Salaula (second-hand clothes); call-boys or bus conductors; owned small groceries or worked in vegetable shops. Those who were in formal employment on the average worked as:

teachers, curriculum specialists, administrators in government or non-government organizations involved in the education of the disabled.

Types of Families and Place of Living

The type of the family from which pupils came from was looked during date interviews. For the purpose of this study, participants' family set up was considered as either nuclear family or extended family. This was necessary as it had a bearing on support available to learners with hearing impairment in the acquisition and development of sign language in the study areas. We interviewed, 9 (15.8 %) from nuclear families while 48 (84.2 %) claimed to have had extended families. All the participants 57 (100%) were from urban schools in Lusaka, district in Zambia.

Qualifications

Qualifications of participants were seen to be of particular importance in the study. It enabled us to understand the influence of sign language on the learning of learners with hearing impairments. The situation of our research was that without taking into account grades of learner-participants, we interviewed 8 (14.0 %) who had primary teaching certificates, 32 (56.4%) with secondary teaching diploma while, the remaining 17 (29.8%) had a university degree in education.

Views of stakeholders on Use of sign language alone as a medium of Instruction

It was evident from the study that most teachers of the hearing impaired did not use Sign Language as a medium of instruction, instead teachers favored the use of total communication, oral language and pointing in the teaching of the hearing impairment. In support of this findings, one male pupil-participant observed; *Excerpt 1: Sometimes teachers use Sign Language alone and at times use both Sign Language and oral language which sometimes confuses us.*

The above assertion was supported by more than half of the hearing teachers and pupils who participated in the study. They observed that pupils with hearing impairment understood lessons taught by deaf teachers who used mainly sign language than when taught by hearing teachers who heavily depended on total communication. These observations were supported by Svartholm (1994); Adoyo, 2002) who reported that teachers in schools for the hearing impaired were required to impart knowledge through use of sign language and not necessarily a mixture of communicative skills. However, Harlan, (2011) explains the situation of the hearing teachers as them being linguistically handicapped in relation to sign language. They rather preference use of oral language or a combination of oral and sign language in classroom instructions.

The use of a combination of communicative approaches was disapproved by the learners with hearing impairment themselves as was evidenced by one female pupil-participant who said: *Excerpt 2: For us who are deaf, it is very difficult to learn when Sign Language is not used in the classroom. Most teachers do not know Sign Language. They only write notes on the board and ask pupils to copy without explaining to them. Very few teachers show knowledge of Sign Language in the school.*

The findings agreed with those of Kamukwamba, (2017), who explained the above observation on the premises that, there were inadequacies in the use of Sign Language as an instructional language. As a result, led to the failure of teachers to operate effectively sign language. The concern was attributed to teacher training institutions preparing teachers for deaf. Most teacher-participants complained that Sign Language courses offered at two key teachers education institutions: The University of Zambia (UNZA) and Institute of Special Education (ZAMISE),

lacked content as well as practical skills related activities in sign language. It was this position the somehow led to graduate teachers failing to effectively use sign language alone as a medium of instruction.

Inadequacies in the preparing of teachers at college level, worsened the situation as most teachers graduated with little or no knowledge of Sign Language as a medium of instruction in the learning of learners with hearing impairment. Adoyo (2002); Brgieal and Kaniok, (2016) for instance reported that in Kenya and Poland, teachers for the hearing impaired lacked competence in Kenyan Sign Language and Polish Sign language to effectively communicate in sign language alone during lessons. These studies showed teachers preference for more use of total communication as opposed to sign language alone. Other studies such as Okombo (1994) reported lack of policy on Sign Language as a medium of instruction. Mindness, (2006) indicated lack of experts in sign language as contributing elements to failure to teach through use of sign language alone. These studies indicated that, the problem in use of sign language as the only medium of instruction, emanated from the teacher training institutions which did not prepare teachers for such but to teach through use of total communication. Wakumelo, (2009) reporting on Zambia, cites teachers' inability to use Sign Language as a medium of instruction of learners with hearing impairments. She sees it as a product of ill-preparation of teachers; lack of interest in the language of the hearing impaired and limited resource to teach it. In relation to curriculum for pupils with hearing impaired one female curriculum specialist said that, ***Excerpt 3:** We are aware of teachers' lack of Sign Language skills and we want to introduce Sign Language as a subject and medium of instruction in the learning of the hearing impaired. We believe this move will help both the teachers and learners in the use of sign language in classroom.*

From the above excerpt, we observe that teachers do not have sufficient vocabulary and skills in sign language for them to use it as the sole medium of instruction. It is also evident from the excerpt that there was a mismatch in the preparation of teachers in that communicative skills in sign language, were based on use of total communication and not necessarily use of sign language alone as a medium of instruction. The results suggested that teachers see themselves as inadequate in sign language to express to go full in use of sign language. The findings were in line with the findings of Wakumelo (2009) who reported that teachers of the hearing impaired in Zambia had an important role to play in making sure that hearing impaired pupils were competent in their Sign Language. However, teachers themselves needed to have sufficient sign language and vocabulary to contribute to academic success of learners with hearing impairment. Ideally Sign Language participants felt that sign language needed not to be used as a medium of educational instruction but be supported by other communicative modes for it to be helpful to learners.

It was clear from the findings that, teachers were not competent in the education of the hearing impaired, thus failed to prepare the hearing impaired for full participation in the real classroom work. This view was supported by one female pupil who said, ***Excerpt 4** We are deaf, if teachers use spoken language in the classroom, we cannot hear anything that is why most of us even fail tests and examinations. We need to be taught in Sign Language, which is our language of communication and makes it easier for us to follow.* Further, we may say from participants' use of statements such as *that is why most of us even fail tests and examinations* signifies the negative impact the inability of teachers to teach pupils with hearing impairment using sign

language alone has on the academic work of the pupils. It is evident from the statement that Pupils with hearing impairment were at ease when communicated to through sign language than when other communicative modes of communication were employed. Pupils believed that use of sign language alone as a medium of communication allowed them to explore and understand their learning environment, learning needs and allowed them to perform better.

The above view did agree with a study conducted by Marrian and Simpson, (1995) and Chifinda and Mandyata, (2017) who observed that teachers of the hearing impaired much depended on pupils where they wrote words on the board and pupils gave them the signs thus the pupil who were supposed to be the learner became the teacher due to adequate sign language skills among teachers. Chifinda and Mandyata, (2017) have seen the development as a strange system in a country where deaf education had been in existence since the 1950s. The system of education for the deaf had been unable to full develop sign language as an academic subject and a language of instruction. The study further revealed that some teachers due to their inability to use Sign Language resorted to increased use of aids, objects or apparatus for the children to see what they are referring to. The study further found that there was an acute problem of lack of enough knowledge in Sign Language among teachers and pupils solely depend on it as a medium of classroom instruction. For example, when it came to teaching of subjects like mathematics and science both teachers and pupils appeared to run short of appropriate signs to use. The few teacher-participants who were familiar with Sign Language were reported to have only knowledge of basic Sign Language. The limitation in sign language skills tended to delay the teaching and learning process in the classrooms.

Factors influencing use of sign language as a medium of instruction

The study showed that there were several factors that might have influenced participants' views on the use of only sign language as a medium of instruction. All learners cited the teacher as the source of knowledge but lacked skills in sign language. Teachers used oral language and pointing as modes of instruction. Pupils however, attributed poor academic performance to teachers' inability to use Sign Language in classroom instruction. Pupils were not able to follow classroom instructions because of communicative challenges. In support of this view, one female pupil with hearing impairment had this to say: *Excerpt 5: We need teachers who know Sign Language, adequate and relevant learning resources and more time to learn for use to effectively learn.*

A careful and systematic analysis of the above excerpt shows that pupils with hearing impairment were not doing well in academic work. Use of verbs, adverbs, quantifiers, adjectives and discourse such as; inadequate skills; insufficient resources and limited time, is a clear expression of inner-feelings and unique value attached to use of sign language but influenced by several limitations Mind-ness, (2006). The excerpt agrees with Wakumelo and Miti (2010) whose explanation of the source of pupils' poor academic work was in teachers' inability to effectively communicate through use of sign language. Pupils complained of teachers lacking right attitudes on language of instruction for the deaf. In a study by Wakumelo (2009) it was noted that pupils did not even ask teachers questions when they did not understand an element in the lesson because of communication challenges between them and teachers.

It was evident that learners generally felt that communication was an obstacle because they had problems understanding concepts, class room instructions from teachers due to poor communication between teachers and pupils. There were teachers who did not understand Sign Language, teaching and communication was sometimes not effective thereby contributing to academic failures. Some topics were also difficult to understand in Sign Language and that certain mathematical and science concepts were not in Sign Language, so teachers just finger spelled such words without providing clear explanation, meaning or just ignored the items. **Excerpt 6:** *Some teachers seem to have a negative attitude towards certain aspects or topics in Sign Language. When they make mistakes in signs we try to help them, but they never follow and continue with oral language and wrong signs as they teach us.* Arising from the above statement, it appears that the teachers had negative attitudes towards use of sign language as well as pupils with hearing impairment. Teachers believed that hearing impaired were slow in understanding concepts, it was evident that teachers felt uncomfortable to be corrected in their use of sign language by pupils they taught hence, unwilling to acknowledge support. As a result, this led to Mathew's effects in learning process (2001) because the severity of their reading delay increased as they progressed and negative attitude toward language used as well as learners in classrooms became significant. This view was also shared by Stein (2013), who argues that having teachers who are negative on use of sign language as a medium of instruction, can adversely affect a student's ability to learn.

Measures to improve use of Sign Language as a medium of Instruction in the classroom

With regard to challenges identified in the use of sign language as a medium of instruction, all the participants apart from pupils, saw the need for the introduction of Sign Language as an academic subject in schools as well as teacher training institutions. Participants felt such a move would enhance the sign language literacy skills of teachers and pupils. The findings were in line with the New Break through to Literacy Policy of the Zambian Ministry of Education (2001) which emphasized on use of a familiar language in early stages of children' education. Wakumelo and Miti, (2010), equally called for a new instructional language policy on the learning the hearing impaired, a policy that requires such children in pre-school and lower primary classes to receive lessons in localized signs facilitating an easy shift to a more official form of sign language. This had the potential of enhancing initial literacy in sign language just as it was the case in other Zambian languages. In Sweden, Chupina (2006) reported that Swedish Sign Language became the language of instruction as well as a taught subject itself in 1995. Since then, pupils with hearing impairment had registered better academic performance than before because of exposure to more Sign Language as a medium of instruction and as an academic subject. Chupina (2006) further noted that, the hearing impaired with initial literacy in local sign language experience, presented themselves well when shifted to official Swedish sign language. Increased use of sign language contributed to good literacy for Swedish hard of hearing and pupils with hearing impairment. In Zambia however, this was not the case as the Ministry of Education appears to favor the use of total communication (mixture of oral and sign language) as opposed to sign language alone thought learners themselves see to disapprove the practice. Some participants felt that increased use of sign language as the sole medium of instruction in formative stage of pupils had the potential of improved academic performance among learners with hearing impaired.

In the present study, learners gave a variety of suggestions that could help them improve their performance in Sign Language usage. Among the suggestions, learners said, **Excerpt 7:** *There is*

a need to simplify some aspects in signs by blending them with local signs for easier explanations of certain concept in certain topics and easier comprehension. Pupils seem to show concern on the complexity of some of the signs used to explain certain concepts. Pupils feels teachers needed to simplify signs and be somehow slow in signing, ought to use familiar and proper signs to ease pupils' understanding. Participants also called for more trained teachers in sign language who would be able to handle more difficult topics in Sign Language and use assorted teaching and learning materials for them to benefit from use of sign language as the sole medium of instruction. These entire suggestions boil down to the need for more qualified teachers who were conversant in Sign Language and called for more classroom learning time. As long as the situation remained the way it was, the high levels of failure rates among pupils with hearing impairments would continue. This finding was supported by Jokinen (2010), who reported that use of a bilingual approach required Sign Language to be used as the principle instructional language and spoken language taking a minor role in classroom communication.

When asked on how to overcome some of challenges identified in the use of sign language alone in the teaching of pupils with hearing impairment, one male curriculum specialist had this to say, **Excerpt 8:** *We use total commination help teachers learn Sign Language and make efforts to be attentive in class. We also seek for assistance from teachers who know Sign Language and fellow pupils whenever we encounter difficulties in learning* This view was supported by a male lecturer who reported that: **Excerpt 9:** *Although training at the college level may not have be adequate in sign language, teachers often made an effort to improve on their Sign Language through interaction with pupils and community exposed to deaf culture.* From these findings, it was obvious that most teachers were not conversant in Sign Language but had basic skills interaction freely with learners and use it as a base to learn sign language. These findings were also acknowledged by Svartholm (1994) and Hernmans, (2008) who noted that the more teachers and pupils became exposure to sign language the more they became proficiency in sign language usage.

On availability of learning resources, the study revealed that there was a strong need to provide relevant teaching and learning resources to support the learning of the hearing impaired. The view was supported by one female teacher who observed: **Excerpt 10:** *hearing impaired learn through seeing hence it is necessary that attention is paid to the supply of teaching and learning materials and not just the language of classroom communication.* These findings were in consistent with the works of Ahlgren, (1994) who reported that teachers resort to use of aids, object or apparatus for the children to see what they were referring to because of limitation in sign language. On the issue of improving sign language communication, participants suggested that there was need for teachers to improve their signing skills through undergoing Sign Language training in order to communicate with learners as was expressed by one male teacher who said: **Excerpt 11:** *I do not know sufficient Sign Language, I have challenges teaching hearing impaired as I mostly use teaching aids to help me explain lessons in class. I would like to go for training or workshop to help me improve in Sign Language skills.* The findings were supported by the Global Deaf Connection (2010) report in Kenya which noted of the ill-preparedness of teachers in sign language usage in classrooms. The study called for more training to improve the sign language base of classroom teachers in the study district of Zambia.

On the question of whether the institutions responsible for training teachers for the hearing impaired had received any complaints about the performance of their graduates, one male lecturer said, *Excerpt 12: We receive complaints on lack of practice in Sign Language, I think this is due to shortage of time and overloaded teacher education curriculum.* From the content of the above except, failure among teachers to perform in the use of sign language, was partially due to limited training time and overloaded teacher education curriculum which gave student-teachers less time for sign language practice. These findings were in line with those of (Adoyo, (2002) and Allen, (2008) who indicated that teachers of the hearing impaired were weakness in sign language content which affected skills as well. They lacked adequate exposure to the practical side of sign language during initial training. Participants in the present study therefore have called for more practice in the preparation of sign language teachers for them to have sufficient skills to use sign language as a major mode of classroom communication. On the whole, teachers were doing their best to teach learners with hearing impairment through a mixed approach to classroom communication in the Zambian school system.

Conclusion

Although the results of this study indicated the significance of using sign language as core language of communication in the learning of the hearing impaired, there were few limitations which must be acknowledged. For example, because of lack of comprehensive training in sign language, failure to consider Sign Language as a full-fledged language by the school system but using it as a remedial measure in communicating with hearing impaired, the results are still noteworthy and some assumptions can be made. On the question of how Sign Language was used, the study established that sign vocabulary and grammar were taught only in lower primary grades and not in upper grade which negatively imparted on the development sign language and skills among learners. Another limitation was that teachers preferred use of a mixture of Sign Language, spoken language and total communication which often left pupils confused in their academic work. Although teachers had a good reason for mixing the signing system, pupils themselves felt teachers' approach was detrimental to their language development as children with hearing impairment, especially to those whose competence had not developed enough to benefit from use of total communication in classroom practice.

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