

# Teacher Proficiency in Sign Language and Reading Skills Development of Learners with Hearing Impairment

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## ABSTRACT

This study examined teachers' proficiency in Sign Language and the methods employed to improve the reading abilities among learners with Hearing Impairments. Qualitative method was applied through the use of in-depth interviews, classroom observations and focus group discussions. The study comprised 115 participants who were purposively sampled as follows: Twenty-six (26) teachers of students with Hearing Impairment, sixteen (16) administrators thirteen (13) parents of students with Hearing Impairment, and sixty (60) grade three (3) students out of which a total of thirty (30) Hearing Impairments whereas the other thirty had no Hearing Impairments. The study found that teachers lacked knowledge of sign language. Although the Primary Literacy Programme incorporates systematic explicit instructions, teachers were not able to adequately apply this evidence based instructional strategies when it came to teaching learners with Hearing Impairments due to lack of proficiency in Sign Language. Given that the phonic methodology's strength rests in the use of sounds, it was observed that instructional strategies were not utilised when teaching children with Hearing Impairment. Teachers also had limited opportunities for Continuous Professional Development to familiarise themselves with the PLP methodologies and hone their Sign Language skills. The study recommends improved pre-service teacher training in Sign Language as well as increased opportunities for Continuous Professional Development among in-service teachers.

**Keywords:** Hearing Impaired, Sign Language, Primary Literacy Programme, Proficiency

## INTRODUCTION

Teacher proficiency in sign language has been a wide subject of discussion in the acquisition of literacy skills among learners with hearing impairment. MOE, (2013) supports teacher proficiency at all levels of educational dispensation by starting that teachers and teacher educators should be equipped with knowledge and skills to enable them identify, screen and assess learners with Special Educational Needs. RTI International (2015) shows that most developing countries in the sub-Sahara Africa such as Zimbabwe and Tanzania have acknowledged the problem of poor reading in early grades. Serpell (2014) postulates that this has motivated researchers to search for effective strategies, methods, and resources to address the challenge of poor literacy outcomes in mass basic schooling. This is because low levels of literacy place a significant constraint on effective participation in societal progress and economic growth by most of the region's rapidly growing population.

The 21<sup>st</sup> Century education of learners with hearing impairment is based on dialogue, opinion and discussions through the utilisation of sign language (Mercer, Hennessy, & Warwick, 2019) This is so in that the nature of hearing impairment itself hinders oral communication thereby relegating learners with hearing

impairment to the use of sign language as their only communication mode for their day-to-day interaction within and outside the education context. This therefore means that teachers of learners with hearing impairment should be proficient in sign language. Studies conducted by Alamri, (2017) & Nikolarazi, (2000) reported that teachers proficiency in sign language could develop students comfort, learning experiences and knowledge. Teacher proficiency in sign language also leads to learner's personal growth in learning, and an improvement in literacy practices such as print awareness of the spoken language as well as contributing to the development of language skills and communication with other peers Sibanda, (2015); Hoemann, (1983). It is therefore imperative that teachers improve their sign language proficiency to improve literacy levels of learners with hearing impairment. Teachers' proficiency in sign language has a positive effect on literacy acquisition of learners with hearing impairment as it promotes effectiveness in classroom communication between teachers and learners with hearing impairment who are mostly disadvantaged (Bambaeroo & Ahokrpour, 2017). Effective classroom communication increases pupil's participation in classroom activities and help them increases their self-esteem and self-reliance even to ask more questions with the assistance of the teacher (Frey, Fisher & Smith, 2019). For learners with hearing impairment, sign language is their fully natural language which should be used during the teaching and learning process by making use of its grammar, vocabulary and dialects. What makes sign language even more complex is its non-universality as there are different kinds of sign language each with its own lexical and dialects (Liddel, 2003).

### **Reading development in children with hearing impairment**

Marschark (2007) confirmed that reading performance among learners with hearing impairment was poor compared to non-hearing impaired learners. He observed that levels of reading in people with hearing impairment that were in senior grades reached a maximum level equivalent to fourth grade, with only 15% of the deaf adolescents performing at acceptable age level. A similar study conducted in Spain by Perez and Dominguez (2006), revealed that learners with hearing impairments' reading level at the end of secondary education is equivalent to primary education fourth graders. In Zambia, Ministry of Education assessed the reading performance of Grade 7 pupils with vision, hearing and mental impairments. Results of the assessment revealed that hearing impaired learners performed poorly in comparison with other impaired groups, scoring 33.5% while the mentally and visually impaired scored 55% and 41.8% respectively (MOE, 2008). These studies have raised more interest in trying to find ways of resolving the problem of poor reading among children with hearing impairment. Educators should always prioritise learning to read among children with hearing impairment because reading is the window into knowledge as it creates a basis upon which learners are to survive within the school education set up. ?ahin et al (2016) observed that children who are not able to read and write could not continue with education as they just give up on their own and eventually drop out of school. Poor reading among learners with hearing impairment make them not fully benefit from opportunities that come with the attainment of education.

The fundamental skill in developing literacy is by learning to read and write. Whitehurst and Lonigan (2000) assert that learning to read is a key milestone for children living in a literate society. It is through reading that individuals who acquire more knowledge in various domains actually read well and read more. For this to happen, Whitehurst and Lonigan (2000) suggest that one must be in an environment that is conducive to learning. This environment must also be presented with learning instructions and medium of communication that make sense to the learner. For learners with hearing impairment, the environment requires the consistent use of sign language Acton (2012). Therefore, in a school environment, teachers should facilitate the masterly of sign language skills by learners. This means that teachers themselves should first be proficient in sign language, then, they will be able to transfer the skills to learners. Literacy enables individuals to use print or non-print, verbal or non-verbal means to think, communicate and act for a variety of purposes in school and in the world beyond school. Literacy is key to successful learning at school and is an element for active participation in social, economic, cultural and political life. Most importantly, it

provides benefits to the individual as well as society. This, therefore, means that lacking vital literacy skills holds a person back at every stage of their life. As a child, they will not be able to succeed at school, as a young adult they will be locked out of the opportunities for jobs, and as a parent, they will not be able to support their own child's learning (National Literacy Framework, 2017). People with higher degrees of literacy are more likely to complete their education and to obtain higher paying jobs. This intergenerational cycle makes social mobility and a fairer society more difficult.

### **Efforts made by Ministry of Education to improve reading levels of children**

There was increasing concern about the vast number of children in Zambia who were struggling to learn to read and write (Matafwali, 2010; Matafwali & Bus, 2013). Evidence of poor reading among Zambian children were confirmed by Nkamba and Kanyika (1998) who reported poor reading performance at grade six level in the Zambian Basic Schools. Out of the six sub-Saharan countries involved in the study, (Mauritius, Namibia, Zambia, Tanzania, Zambia and Zimbabwe), Zambian and Zimbabwean children showed the poorest performance in reading both in English and in their local languages. These unfavourable literacy achievement levels in comparison with other countries in the Sub Saharan region have been an incentive for the Zambian government to develop a literacy programme aimed to improve literacy standards in the country (Nkamba & Kanyika, 1998). Although this study did not cover the reading performance of learners with hearing impairment, studies by MOE (2008), Chibuye (2013) and Muzata (2021) confirms the problem of persistent poor reading among learners with hearing impairment.

Zambia launched the literacy programme called the Primary Literacy Programme (PLP) whose goal is for learners (regardless of disability) to be able to read simple sentences by the end of Grade 1 and ensures that they acquire literacy skills before moving to Grade 2 and subsequent grades (MOE, 2013). The Ministry of Education (1996) committed itself to providing good quality education to all children by upholding the principle that:

*“...every individual, regardless of personal circumstances or capacity, has a right of access to and participation in the education system” (p.66).*

The Ministry has committed itself to giving attention to the educational needs of exceptional children by designing appropriate curricula and teaching materials and improving teacher's proficiency (MOE 1996). This statement is in line with the observations made by Serpell & Jere (2011) who proposed that children and youth with Special Educational Needs (SEN) should be included in the educational arrangements made for the majority of children. All programmes made in an effort to improve literacy skills of children should also take into account the nature of disabilities of children in schools. The goal of special education is to ensure that all children with SEN are effectively educated in special or mainstream facilities from early childhood education through high school education (MOE, 1996). Children should also be provided with qualified and competent teachers. However, despite this commitment to special education, learners with hearing impairment have continued to lag behind in reading skills development, thereby limiting their access and full participation in education (MOE, 2008). As a result of the persistent poor reading development among learners with hearing impairment, the researcher wishes to examine teacher's proficiency in sign language to enhance the reading skills among Grade 3 learners with hearing impairment.

### **Objectives of the study**

- To assess the levels of proficiency in sign language among teachers of Grade 3 learners with hearing impairment
- To assess opportunities in CPD by teachers of learners with hearing impairment.
- To explore strategies teachers use used to implement the PLP to learners with hearing impairment in Grade 3.

## LITERATURE REVIEW

Sign Language proficiency among teachers of learners with hearing impairment is the foundation for effective acquisition of reading skills among learners with hearing impairment and is a factor in the inclusion and school performance of learners with hearing impairment (Sibanda, 2015). Therefore, teachers of learners with hearing impairment are expected to possess high proficiency skills in sign language. Literature indicates that there are minimum requirements for one to be able to use sign language as a primary medium of instruction. Such teachers should be, over and above fluent in sign language and be credentialed (Hoemann, 1983). There is also evidence from literature that proficiency in sign language among teachers of the learners with hearing impairment has tremendous implications for learning and inclusion. There is a high possibility that a primary school teacher who is proficient in sign language will facilitate more effective learning among learners, and will create a strong bond through teacher-learner interaction as well as pupil-to-pupil interaction. The use of sign language has its impact educationally as a means of stimulating reading among learners with hearing impairment. Conrad (1979) explains that sign language has a vocabulary permitting discussion of education topics such as ethics, and poetry. This means that for teachers to effectively teach learners with hearing impairment, they should have high proficiency skills in sign language. Sibanda (2015) theorise that the single most important contributing factor to poor academic performance of the hearing-impaired learners is poor sign among teachers. In support of the above statement, a study conducted by Kiyaya and Moores (2009) indicates that teachers of learners with hearing impairment in Sub-Saharan Africa could not sign and did not view sign language as a complete language. Savage, Savage, Evans and Potter (1986) found out that, the rates of performance improvement are mediocre at best, with the average high school-age learners with hearing impairment reading at a third-grade level. The reading problems of learners with hearing impairment are primarily a result of poor communication between them and their teachers. In line with this assertion, Glaser & Van Pletzen, (2012) pointed out that one of the reasons for the poor reading of learners with hearing impairment is the use of haphazard and simplistic signing, exaggerated speech or arbitrary manually coded systems that fall short of functional sign language by teachers. In Greece, Nikolarazi (2000) found out that teachers of learners with hearing impairment generally had challenges relating to uncertainty and /or lack of sign language skills in dealing with learners with hearing impairment. Additionally, in rural primary schools in Zimbabwe, Musengi and Chireshe (2012) noted that specialist teachers who acted as sign language interpreters could not sign many of the abstract concepts suggesting a need to examine the sign language proficiency levels among teachers of learners with hearing impairment. Because of lack of proficiency in sign language, learners with hearing impairment significantly lag behind their hearing peers in literacy development.

Literacy is defined as the process of using reading, writing, and oral language to extract, construct, integrate, and critique meaning through interaction and involvement with multimodal texts in the context of socially situated practices (Rintaningrum, 2009; Pearson & Tierney, 1984). For learners with hearing impairment, the acquisition of literacy is an uphill battle. This is because they are underprivileged in the receptive skills of listening and the productive skill of speaking (Smagorinsky, 2001). This therefore means that learners with hearing impairment can only thrive in literacy acquisition through reading and writing, hence the need to have teachers who are proficient in sign language.

One of the factors to the acquisition of literacy skills among learners is the language of instruction. MESVTEE (2013), notes that the language of classroom instruction fundamentally impacts on a child's ability to read and learn. Since the language of instruction is crucial to the development of reading, it is imperative that teaching and learning is conducted in a familiar language. There is evidence that children learn more easily and successfully through languages that they know and understand well (MESVTEE, 2013).



In the case of learners with hearing impairment, language is commonly engaged by use of signs. Acton, (2012) postulates that sign language is the mother tongue for learners with hearing impairment as it is their first language and the only medium of communication for people with hearing impairment. Therefore, sign language, as a familiar language of instruction for learners with hearing impairment, is one of the factors that support their reading skills development. In effect, sign language is a medium through which children with hearing impairment learn across the curriculum. O'Reilly (2005) argues that, with the use of signs for learners with hearing impairment, language becomes more visible and easy to learn since the main modality of learning for them is vision and not audition. Within the same context UNESCO (1994) earlier declared that learners with hearing impairment in inclusive set-ups should be taught using sign language, while Rajagopal, (2003) believes that, young learners who are hearing impaired learn more effectively when taught using sign language.

Conrad (1979) defines sign language as language involving fingers, hands, arms, facial gesture-all visible. It emphasises a visual mode of language, which provides a linguistic signal, which is easily perceived. Learning sign language can help learners with hearing impairment to learn to read since the acquisition of sign language is the primary mode of communication of learners with hearing impairment.

Hearing impaired teachers find it easy to teach reading and writing to learners with hearing impairment who were exposed to signing in the home. Zambia National Association of the Deaf (ZNAD 2001) argues that when a deaf child grows amidst hearing people, the child and hearing people always develop some kind of signing as a means of communication. The statement underscores the importance of early exposure to sign language, which helps when a child enters school. Additionally, teacher's proficiency levels in sign language and their training in special education is of great help to learners with hearing impairment's acquisition of sign language.

Sign language is determined by the culture of a given society and is applied differently by different communities. (ZNAD 2001) states that sign language is a true language, and that sign language has its own vocabulary (signs) and grammar, that sign language is not universal in the sense of there being only one sign language all over the world, and that sign language is not based on spoken languages.

In line with the above statement, Chibuye (2013) states that there are several sign languages, many of which are not mutually intelligible. This statement proves the non-universality of sign language. Since sign language is not universal, individual countries should create their own sign language system suitable to their environments. The use of sign language has its impact educationally as a means of stimulating reading among learners with hearing impairment. Conrad (1979) explains that sign language has a vocabulary permitting discussion of education topics such as ethics, and poetry. This means that for teachers to effectively teach learners with hearing impairment, they should have sign language skills. Sign language skills of teachers enable them to develop a strong bond between them and learners with hearing impairment.

Language can be learned through the eye rather than the ear. Children with hearing impairment can learn sign rather than spoken language. In order for them to learn or improve their reading skills, sign language and other visual aid such as text with pictures should be used. Therefore, the deaf child should have adequate skills in sign language to enable him/her learn to read with ease (Durkin, 2014). The child with hearing impairment should be viewed as a whole, as a competent learner, but one who requires a visual environment in order to thrive and that the problem does not reside in the child but in the environment. This is to say children with hearing impairment should be met in the visual world where they are and help them understand our world, which takes hearing for granted. If this is done, learning to read and write will be an exciting activity to them.

Language development in children with hearing impairment is delayed compared to non-hearing impaired children. These delays are a direct result either of their inability to process auditory input or a lack of sufficient exposure to sign language (Spencer & Meadow-Orlans, 1996). This is to say, the biggest barrier to learning how to read among children with hearing impairment is not hearing loss, but lack of language that result from insufficient visual and auditory process. Language learning in all children is a complex field that requires the operations of cognitive processes and involves representation. Learning language begins early in life when infants, either hearing or with hearing loss respond to their environment in the same way. Jusczyk, (1997), argues that while hearing infants are sensitive to sounds of a language in the first few months of life by detecting sentences with grammatical inconsistencies, infants with hearing loss are sensitive to visual input and touch. Therefore, infants with hearing loss need basic visual experiences that form language acquisition. However, many children with hearing loss are at risk during early brain development because they lack access to sensory inputs that creates the connection upon which language is formed (Easterbrooks, 2002).

## **METHODOLOGY**

This study employed the embedded or mixed design. The primary research design was the qualitative design, while the quantitative design method was used to provide a supportive role in the study. The embedded design is a mixed method design where one data set provides a supportive, secondary role in a study primarily based on the other data type (Creswell et al. 2002). According to Creswell and Plano Clark (2007), mixed method strategy is a design which connects, integrates and combines the quantitative and qualitative data with the aim of gaining good understanding of the research problem. This design is used when researchers need to include qualitative or quantitative data to answer a research question within a largely quantitative or qualitative study. In this study, the embedded design was selected to allow the researcher have a more detailed level of inquiry through obtaining different data types to inform the study.

The study comprised of 115 participants. This was broken down as sixty (60) grade three (3) learners distributed as thirty (30) learners with hearing impairment and thirty (30) non-hearing-impaired learners from all the eleven (11) target schools from three (3) districts namely Mansa, Samfya and Lusaka. The sample also included twenty-six (26) teachers of learners with hearing impairment, sixteen (16) administrators supervising teachers of learners with hearing impairment from the target schools and thirteen (13) parents of learners with hearing-impaired, all of them drawn from the target schools. Simple random sampling was used to select learners who were not hearing impaired whereas purposive sampling was used to select students who were hearing impaired. Purposive sampling was also applied to select teachers, administrators and parents. Teachers were selected based on teaching grade three (3) children with hearing impairment. This means only teachers teaching Grade three (3) learners with hearing impairment were eligible to be selected. This is in line with assertions by Campbell et al (2020) who proposed that purposive sampling is used to select informants with high competence in each field controlled by the informant. Administrators were picked because they were responsible for supervising teachers of learners with hearing impairment. The specific trait possessed by administrators, which qualified them to be selected, was being supervisors for teachers teaching learners with hearing impairment.

Qualitative data was analysed during the process of data collection as the emerging factors unfolded. The objectives of the study served as the guide for data analysis, which involved describing participant responses and coding them in accordance with the goals.

## **ETHICAL CONSIDERATION**

The researcher sought ethical approval from the Zambia Research Ethics Committee of the University of

Zambia to undertake the study. Permission was also obtained from the Provincial Education Officers (PEO) in Luapula and Lusaka provinces to undertake the study. Further engagements were made with the District Education Board Secretaries (DEBS) to have access to the schools offering education to learners with hearing impairment. Permission was also obtained from Head teachers for the researcher to recruit teachers, learners and parents who took part in the study. The researcher informed participants that participation in the research was voluntary and that it did not attract any payment. Participants were informed that they were free to decide whether they should take part in the research or not, and that if they decided to take part in the research, they were at liberty to leave any time they felt like. To this effect, all respondents signed informed consent forms. Confidentiality was assured by upholding anonymity.

## PRESENTATION OF FINDINGS

This section presents the findings based on the study objectives:

### Teachers’ Proficiency in sign language and strategies used to teach reading to learners with hearing impairment

As a way of determining proficiency in Sign Language, Twenty-six (26) teachers who participated in the study were asked whether they had the necessary training in sign language to successfully teach reading to students with Hearing Impairments. The findings are presented in the table below.

Figure 1 presents the percentage of teachers’ responses on their competence in sign language.

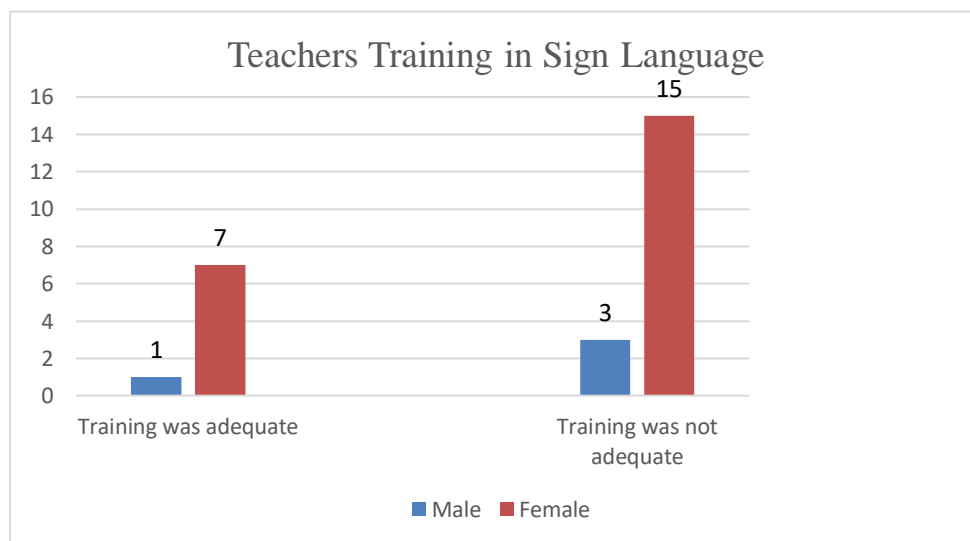


Figure 1: Teachers training in Sign Language

The figure shows that eighteen (18) teachers (three (3) male and fifteen (15) female) said they did not acquire the necessary sign language training, knowledge and skills to teach literacy to learners with hearing impairment. Only eight (8) teachers (one (1) male and seven (7) female) said they acquired adequate training, knowledge and skills in sign language. The majority, who said they did not acquire enough competences in sign language, observed that their training focussed more on theory and not practical. One teacher had this to say:

*“I’m not well trained on how to handle reading lessons for deaf children. I do not know how to sign most of the words. Some words are difficult so I consult fellow teachers, and sometimes, I consult pupils”.*

Another teacher said this:

*“I do not know sign language very well especially when it comes to signing some words and terms in Computer Studies and Business Studies. I fail to get the best sign to represent a word. My teacher training course taught us more sign language theory than the practical part”.*

Yet another teacher indicated that some words were very difficult to sign so she only used illustrations. A comment from another teacher was that he was not proficient in sign language to enable him teach reading to hearing-impaired children. Therefore, he usually invited a friend who was more proficient in sign language to sign difficult words for learners.

Contrary to comments by eighteen (18) teachers who said they were not competent enough in sign language, eight (8) teachers said they were competent in sign language. One hearing impaired teacher had this to say:

*“We know, they know, yes, we know sign language very well. We deaf teachers know well-well sign language; the problem is with hearing teachers who have difficulties; so they come to consult us”.*

### **Opportunities in CPD for teachers of learners with hearing impairment**

Teachers were interviewed to find out if they participated in Continuous Professional Development (CPD) activities to enable them sharpen their teaching skills to help implement the PLP to learners with hearing impairment. Twelve (12) teachers said they attended CPD meetings while the majority, fourteen (14) said they did not attend any CPD orientation meeting designed to enhance the teaching of reading to learners with hearing impairment because Ministry of Education had not organised any of such a meeting.

A teacher who confirmed having attended a CPD meeting had this to say:

*The two of us attended a two days CPD workshop on how to implement the PLP. The rest have not yet attended any.*

On the other hand, one of the teachers who said he did not attend any CPD on how to teach literacy to learners with hearing impairment had this to say:

*There has been no CPD orientation that has focussed on teaching reading to hearing impaired children using the PLP. We have attended other meetings on CPD but not on how to teach reading to deaf children.*

Another teacher had this to say:

*I have not heard of any CPD meeting that talks about PLP for deaf children. I haven't attended any. The one we had was for normal children and not the deaf. We were looking at how to teach sounds. What they didn't know was that sounds were not applicable to children with hearing impairment. These are deaf; sounds can not be applied to deaf children.*

### **Strategies used by teachers to implement the PLP in the development of reading skills of hearing-impaired learners in grades 3.**

Teachers were asked to state whether they had adequate knowledge, skills and methodologies on how to teach reading to hearing impaired learners using the five (5) methodologies advanced by the PLP namely phonics, fluency, comprehension, vocabulary and writing. Their responses are shown in figure 2.



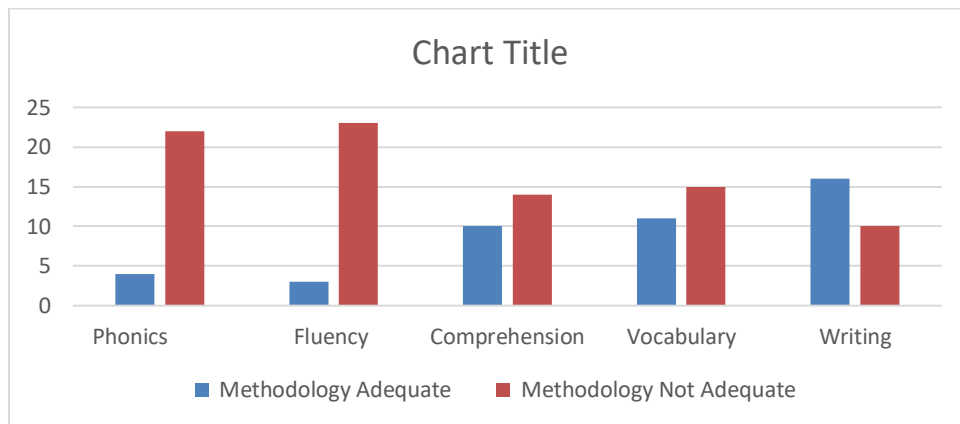


Figure 2: Teachers knowledge of the PLP methodology of teaching literacy

### Phonics

The first methodology of teaching literacy is phonics. Teachers observed that the phonics methodology was not suitable to children with hearing impairment because it required the utilisation of the sense of hearing and manipulation of sounds, which children with hearing impairment did not possess. Teachers said that they did not have adequate knowledge and skills to teach literacy to learners with hearing impairment using phonics. Teachers observed that

*The PLP methodology of teaching reading through the use of sounds (phonics) is not attainable by children with hearing impairment due to the nature of disability, i.e., deafness. The methodology seems to work for learners who are hearing and are able to get sounds of letters of the alphabet.*

Another teacher had this to say:

*I did not see any traces of phonics being implemented, or even being tried in hearing impaired classes. In short, this methodology is never taught because it is alien to hearing-impaired children to children with hearing impairment.*

### Fluency

The second methodology of teaching literacy under the PLP is Fluency. Teachers were asked on their experience of teaching fluency to grade three (3) children with hearing impairment. Their responses revealed that teaching fluency was difficult, as they did not have adequate knowledge and skills of using this strategy.

Teachers observed that

*Teaching fluency gave problems to learners as it was hard to teach. Hearing-impaired learners were slow at reading, as they seemed to repeat a word several times before proceeding to another word.*

Another teacher argued that:

*Fluency was difficult to teach because reading among deaf people required the signing of words (sign language), in most cases fingerspelling, which slows down reading fluency. Deaf people read the same word repeatedly during the reading process.*

### Comprehension

The next methodology of teaching literacy under PLP is comprehension. In order to assess the effectiveness of this methodology, twenty-six (26) teachers were interviewed. According to table 6, ten (10) teachers said

it was easy to teach comprehension to grade three (3) children with hearing impaired while sixteen (16) teachers said they found it difficult to teach comprehension. One teacher said

*Although pupils were able to recall the previous work, the rate of recalling came with great difficulties. In order to get the required responses based on the comprehension passage, I give pupils leading questions, which guides them to get the answers. If I do not do this, learners fail to recall what was read.*

### **Vocabulary**

Next, teachers were asked to state how they taught vocabulary to learners with hearing impairment. Their response was that they did not have adequate knowledge and skills to teach vocabulary.

One teacher had this to say:

*The vocabulary of hearing-impaired learner's is generally limited and poor because they do not seem to know a language to help them develop a word bank. Moreover, most of us are not trained in literacy and languages.*

The other teacher had this to say:

*Children with hearing impairment are academically weak when it comes to learning vocabulary. The rate of grasping concepts is very slow, and sometimes, a teacher will take the whole week teaching the same items.*

### **Writing**

The fifth and final methodology of teaching literacy to pupils in lower grades is writing. Teachers were asked to state their adequacy of knowledge and skills to teach writing to children with hearing impairment. Their responses show that sixteen (16) said they had adequate knowledge and skills to teach writing to hearing-impaired learners while ten (10) said did not. A teacher stated that:

*"Teaching writing to hearing-impaired learners is easy. Learners always show very good and improved writing skills. This makes it easy for writing activities to be handled successfully".*

Another teacher had this to say:

*We have all the necessary skills and competencies to teach writing to hearing- impaired learners based on the training we acquired at college.*

## **DISCUSSION OF FINDINGS**

The study revealed that teachers were not proficient in sign language. Teachers did not acquire the necessary sign language training, knowledge and skills to teach reading to learners with hearing impairment. The revelation from teachers was that the biggest component of their college and university training focused more on theory at the expense of the acquisition of practical sign language. This is in agreement with MOGE (2017) which states that although many teachers in Zambia have qualification certificates, the effectiveness of pre- and in-service teacher training is limited, particularly in pedagogy. It is therefore regrettable to note that the qualifications of teachers have been washed away due to inadequate skills, as their qualifications have not translated into improved learning outcomes. Muzata, (2021) noted that many people, including teachers did not know sign language thereby making it even more complicated for learners with hearing impairment to develop cognitively as compared to their peers. This assertion is in line with the findings of this study, which revealed that teachers were not well trained on how to handle reading lessons for hearing impaired children, as they did not know how to sign most of the words. Teachers found

some words very difficult so they consulted fellow teachers, and sometimes, pupils to sign for them. Lack of teacher training compromises the quality of teaching, resulting in failure to achieve the objectives of the programme (Onyeachu, 2008). There is also evidence from literature that proficiency in sign language among teachers of learners with hearing impairment has tremendous implications for reading achievement among learners with hearing impairment. A teacher who is proficient in sign language will facilitate more effective learning among the children. Sibanda, (2015) observed that, internationally, the single most important contributing factor to poor academic performance of the hearing impaired learners is the use of the wrong medium of instruction by teachers. Supporting the above statement, Kiyaya and Moores (2009) noted that teachers of the deaf children in Sub-Saharan Africa could not sign and did not view sign language as a complete language. Lack of proficiency in sign language among teachers of hearing impaired learners result into poor implementation of the PLP. MESVTEE (2013) acknowledges that the language of classroom instruction fundamentally affects a child's ability to read and learn. This therefore means since teachers of hearing impairment learners have been found to have inadequate sign language skills, the implementation of the PLP will suffer serious setbacks, as learners with hearing impairment will continue to lag behind in reading achievement.

On opportunities for CPD, The findings revealed that teachers did not have any opportunity to attend CPD orientation meetings to familiarise themselves on how to teach reading to learners with hearing impairment using the PLP methodology. The study revealed that the only CPD meetings attended by teachers discussed the strategies of teaching reading to non-hearing impaired children and not learners with hearing impairment. CPD is important to the professional growth of teachers as it is mainly aimed at promoting learning and sharpening of teachers knowledge, skills and values. In support of this statement. (MOE, 1996) observes that teachers have a responsibility, to themselves and to their profession, to deepen their knowledge, extend their professional skills, and keep themselves up-to-date on major developments affecting their profession. Therefore, a vital education system is not static, but dynamic, promoting change, in response to the needs and expectations of society, in such areas as subject content, pedagogical approaches, pastoral care for pupils, assessment procedures, school organization and management, and relationships with parents and the community.

Konstatinos, (2015) explains that CPD is a localised in-service training conducted mostly for a short period within the school set up. Therefore, if teachers are to be effective curriculum implementers, they require time, personal interaction and in-service training through CPD (Fullan, 1993). This enables implementers sharpen their knowledge and skills in teaching. Cheung and Wong (2012) suggested that, in order to help teachers enhance understanding and build capacity in the implementation of curriculum reform, preparation has to be adequate, and that teachers should be provided with sufficient professional development training. In line with the above statement, Goessi (2002) stated that, in-service training is an effective means of keeping teachers alert to constantly adapting their teaching to the changing social environment. Therefore, the implementation of any given instruction depends on how knowledgeable the implementer is, hence the need for adequate preparation and continuous retraining. From the discussion above, it is evident that teachers were not prepared enough to implement the PLP to children with hearing impairment. It has been noted that teachers are not proficient in sign language and had no opportunities to attend CPD. Since learning takes place through a language, it is difficult for learners to learn from a teacher whose language proficiency is poor. It is therefore important that teachers are accorded opportunities to attend CPD in order acquire knowledge and skills to implement the PLP to children with hearing impairment. Therefore, schools should conduct more CPD activities on a wide range of subject areas including sign language.

In terms of the strategies used to teach literacy under the PLP, the study revealed that the methodologies suggested by the PLP were not workable for learners with hearing impairment. Teachers did not have adequate knowledge and skills of teaching reading to learners with hearing impairment using the phonics methodology. The study established that the phonics methodology was not suitable for children with hearing

impairment as it requires the manipulation of sounds, which learners with hearing impairment do not have. Marschare et al, (2002) argues that learners with hearing impairment are disadvantaged by the phonics method because whereas the typical hearing child comes to the reading task with a substantial amount of pre-reading skills, hearing impaired children typically lack the development of any of them. The hearing-impaired child does not have access to phonological code and many do not know any language well. This makes it even more difficult for hearing-impaired learners to learn to read and write. The emphasis on the use of phonics and phonological awareness as a strategy of teaching reading is a stumbling block to the full implementation of the PLP to learners with hearing impairment. On the teaching of fluency, the study established that teaching fluency was difficult because teachers did not have adequate knowledge and skills to use this methodology when teaching reading to learners with hearing impairment. It was also argued that fluency was difficult to teach because reading among learners with hearing impairment required the signing of words, and in most cases, finger spelling, which retards reading fluency. This experience is contrary to the definition of fluency which states that reading fluency is the ability to read text accurately, automatically, and with proper expression while constructing meaning (Pikulski & Chard, 2005; Gunning, 2010). Supporting the above statement, Kelly, (2003), observes that individuals who are fluent readers are able to process text effortlessly, which frees up working memory resources to focus on higher level reading processes such as word and phrase recognition, accessing prior knowledge, analysing syntax, and checking for comprehension. In contrast, individuals with fluency problems tend to read text laboriously and spend large quantities of their cognitive resources focused on lower-level skills such as decoding and word recognition, which limits the processing resources required to focus on meaning. As seen above, hearing impaired learners spend large amounts of time when learning to read. The implication of this scenario is that the implementation of the PLP will not achieve its intended objective of ensuring that learners acquire foundational literacy skills in early grades.

On comprehension, the findings revealed that teachers still found challenges of teaching literacy to learners with hearing impairment using this methodology. The study revealed that although pupils were able to recall the previous work, the rate of recalling came with many difficulties. In order to get the required responses based on the comprehension passage, pupils were assisted by teachers by giving them leading questions, which guided them to get the answers correct. Learners with hearing impairment performed better than non-hearing impaired learners because teachers assisted them to get the answers correct. Without the teachers help, they struggled to get the answers correct. The findings of this study are well aligned with studies on reading comprehension of learners with hearing impairment which have time and again been found to be low (Furth, 1966). For non-hearing impaired children, the development of word identification depends on phonemic awareness (Torgesen et al., 1997), while for learners with hearing impairment, spoken language is not accessible hence phonological information is obviously obstructed thereby impeding word identification. The other methodology of teaching literacy to learners as proposed in the PLP is vocabulary. The results of the study revealed that teachers of learners with hearing impairment did not have adequate knowledge and skills to teach vocabulary. The findings above are in line with the observations made by Cole and Flexer, (2007) who observed that the acquisition of reading vocabulary among learners with hearing impairment is an uphill battle. This is because learners with hearing impairment lack the ability to hear and speak. The last methodology of teaching literacy to pupils in lower grades is writing. Teachers said they had adequate knowledge and skills to teach writing to hearing-impaired learners. This shows that teachers of learners with hearing impairment did not have problems to teach.

## CONCLUSION

The study established that there was ineffective implementation of the PLP in the development of reading skills of children with hearing impairment. Some of the curriculum areas that rendered this programme ineffective are non-proficiency in sign language among teachers of learners with hearing impairment. Teachers did not have adequate knowledge and skills in sign language to help them handle reading lessons

to learners with hearing impairment under the PLP. Next, teachers did not have opportunities to attend CPD orientation meetings to familiarise themselves and sharpen their skills in the PLP methodologies. Additionally, there was poor implementation of inclusive learning resulting in poor socialisation of children with hearing impairment. On teaching strategies and literacy methodologies recommended by PLP, it was established that the phonic methodology was not appropriate to children with hearing impairment because the strength of this methodology lies in the use of sounds. However, children with hearing impairment do not possess the sense of hearing to help them manipulate sounds. Teachers also experienced difficulties in teaching fluency, where learners with hearing impairment labored to process reading tasks; comprehension, where learners could not work on a reading passage on their own, and in vocabulary, where the vocabulary of children with hearing impairment was generally found to be poor due to lack of a language to help them develop a word bank.

## RECOMMENDATIONS

- Ministry of Education should ensure that teachers of learners with hearing impairment undergo intensive sign language training in order to be proficient in sign language skills.
- Ministry of Education should ensure that Colleges of Education intensify the training of teachers in strategies of implementing literacy methodologies of the PLP which include Phonics, fluency, comprehension, vocabulary in order to prepare teachers of learners with hearing impairment handle reading lessons effectively.
- Head teachers should ensure that they conduct CPD programmes in schools in order to make teachers of hearing impaired learners familiarise themselves with the PLP methodology.
- Teachers should be discouraged from using the phonics and phonemic awareness methodologies when teaching reading to hearing impaired learners because this methodology is not suitable for children with hearing impairment as it requires the manipulation of sounds, which hearing impaired children do not possess. Teachers should ensure that all learners develop strong pre-reading skills such as alphabetical knowledge and print awareness, as these are foundational skills of reading development.

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### List of Figures

Figure 1: Teachers training in sign language

Figure 2: Teachers knowledge of the PLP methodology of teaching literacy

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