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STRUCTURAL QUALITY FACTORS IN THE PROVISION OF EDUCATION TO PUPILS WITH HEARING IMPAIRMENTS: A CASE OF SELECTED SPECIAL SCHOOLS/UNITS IN NORTH WESTERN PROVINCE OF ZAMBIA

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ABSTRACT

The study sought to examine factors affecting provision of quality education to learners with Hearing Impairments at basic school level with a particular focus on the teaching methods being applied by teachers and availability of appropriate teaching and learning materials. It is our assumption that provision of quality education to learners with Hearing Impaired can only be attained through the use of appropriate teaching methods and availability of teaching and learning materials. The target population comprised learners with Hearing Impairment, specialist teachers, school administrators and parents selected using random and purpose sampling procedures. Data was collected using a semi structured questionnaire, interviews and classroom observations. The study found that most of the schools are not applying appropriate teaching methods such as visual and tactile teaching methods but rather they use ordinary teaching methods which may not be effective for learners with Hearing Impairment. The study further revealed that special schools and special units do not have adequate teaching and learning materials. The study concluded that these school factors have the potential to affect the quality of education being offered to learners with Hearing Impairments.

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INTRODUCTION

The provision of quality education to pupils with hearing impairment has been a major challenge attracting a lot of debate amongst stakeholders in the education system. While the Ministry of General Education is committed to improving the quality of education for all learners, performance of learners with Hearing Impairment (HI) is relatively low compared to their peers as evidenced by the national assessment results national assessments (Mbewe, 1983; Kalabula, 1993; Katwishi, 1995; MoE, 2008). Regional pass rate for the 2010-2012 national mock examinations was relatively low for the HI with performance ranging between 34% and 43%. Previous studies have also shown that Hard-of-hearing students show lower performance in math, reading,

and writing skills than hearing counterparts, even though their mental abilities are on par with their peers (Debevc, Stjepanovic, & Holzinger, 2014). Kiboss (2012) further found that Kenyan high schools students with Hearing Impairment demonstrated poor performance in math tasks in comparison with their hearing counterparts. A study by Stoner, Easterbrooks, and Laughton (2005) revealed that elementary students with hearing loss in the United States displayed lower writing skills and literacy outcomes. It is further argued that learners who are deaf or hard-of-hearing usually struggle in learning a second language (Zamfirov & Saeva, 2013). Although Hearing Impairment does not necessarily affect an individual's intellectual functioning, the consequence of HI on personality and psychosocial development particularly in the

area of language acquisition and communication remains a major professional and policy concern. The dysfunction of the auditory analyzer does not only result in severe or profound loss of the ability to hear acoustic input but it also results in difficulties in acquisition of language on various levels: phonology, semantics, grammar, and pragmatics presenting a major obstacle in the acquisition of reading skills (Geers & Moog (1989). At the pedagogical level, the Ministry of General Education Standards and Evaluation Guidelines (2015) have identified a number of factors that impact on the provision of quality education for the HI including; inadequately/inappropriately trained teachers, inadequate teaching and learning materials, low teacher motivation and absenteeism, high learner-teacher ratios, ineffective school management and supervision and inadequate funding among others. Following the global focus on attainment of Sustainable Development Goals, relevant to inclusion is SDG No. 4, ensuring provision of quality education to marginalized learners the HI inclusive has become a major concern for educators, governments and society at large. Correspondingly, numerous studies have shown strong associations between aspects of quality and learning outcomes (Hamre&Pianta, 2007; Thomas & La Paro, 2009). Understanding this relationship therefore becomes imperative in interrogating factors that may account for the persistent low performance outcomes for learners with HI in Zambia.

Quality in education has been conceptualized in terms of “structural” and “process quality”. Structural quality is measured through dimensions such as; availability of teaching and learning materials, teacher professional competencies, teacher pupil ratio, group size, classroom design and arrangement. Process quality focuses on the other dynamics in the classroom such as human interactions with a particular emphasis on: (1) teacher-pupil interactions that is responsive to the needs of the learners characterized by verbal stimulation, guidance and scaffolding; (2) supportive classroom climate through peer to peer positive relationships; and (3) opportunities to learn and develop competencies (Hamre&Pianta, 2007; Howes et al., 2008; Rimm-Kaufman et al., 2009; Cadima et al., 2010; Lerkkanen et al., 2012).

Ironically, structural quality indicators are perceived to be distant determinants of learning outcomes and are mediated through process quality characteristics. From the investment point of view, structural quality is mainly about the costs of education whereas process quality is about the benefits that accrue. Central to this dichotomy is recognizing the interrelatedness of structural and process quality characteristics in achieving positive learning outcomes and to understand that when this relationship is weak and distort, special education provision will not be efficient. Borich and Kash (1978) noted that apart from parents, the teacher constitutes the second strongest influence on a student’s academic life. Horton (1988) postulates that quality special education depends more on trained teachers and there is evidence showing that learners who are handled by specialist teachers make progress as these teachers are able to provide high level skilled support to individual learners both academically and socially. Other factors key in the provision of quality special education includes a highly committed school administration and ensuring manageable class size. It is also important to note that learners with HI do not only require specialized teachers, but they require specialised teaching and learning resources, appropriate infrastructure and appropriate

teaching methods such as interactive methods, visual and tactile teaching if they are to learn effectively.

Against this background, an exploration of the extent to which structural quality factors such as availability of teaching and learning materials, teacher qualification and teacher pupil ratio are addressed in the provision of education for the HI is a professional and policy concern. It is undeniable that HI learners require specialized teaching and learning materials coupled with appropriate teaching methods such as interactive methods, visual and tactile teaching. Yang and Lay (2005) observed that interactive learning through a software-based training tool such as Mandarin phonemes has the potential to improve learning outcomes in language and reading and could increase motivation levels for hearing-impaired students because of instant feedback that the software provides to the learner. In the Bulgarian study, Zamfirov and Saeva (2013) found that a specially-designed computer program lead to higher performance in reading among the HI.

Computer software can also be used to generate signing avatars necessary for interpreting technical concepts that pose particular hurdles for sign-language interpreters especially in technical subjects like science and math (Andrei et al, 2013). Parton (2006) further reaffirmed the need for interactive computer applications and the use of signing avatars in promoting active learning among the HI. Highly structured classrooms with manageable teacher-pupil ratio have also been found to promote academic needs for the HI, facilitate the development of their language and communication skills, and to contribute to their learning of oral language and acquisition of vocabulary skills (Pakulski, 2011; Tannen, 2007). Research evidence seems to indicate that one-to-one conversation between the teacher and the learner facilitates an orally interactive environment which is critical in the development of verbal language and communication skills for the HI (Kretschmer, 1994; Clarke & Stewart, 1986; Arnold, 2001; Spencer & Marschark, 2006; Cole & Flexer, 2007; Lloyd, Lieven & Mahon, 2009; Paatsch & Toe, 2013). It therefore becomes necessary for the teachers involved in teaching learners with HI to possess high levels of competence not only in special education and but also in Sign Language for them to adequately plan materials and objectives, implement appropriate learning activities aimed at facilitating optimal learning opportunities, and to evaluate learning outcomes using appropriate assessment techniques taking into account the learners language levels (). These structural quality need to proceed simultaneously if quality education is to be delivered.

Provision of quality education for learners with Hearing Impairment requires ensuring optimal support is given to maximize their learning potentialities. In this context, skills and competence of teachers, availability of teaching and learning resources, and quality of learning environment in terms of appropriateness and class size have been recognized as indispensable determinants of quality and the most important factors in achieving high quality educational outcomes. While the recent years have witnessed increased attention and investment in special education and inclusive education in particular, performance of learners with Hearing Impairments remain relatively low an indication that there are challenges associated to quality of education being provided to these learners. It is therefore imperative to interrogate the extent to which indicators of structural quality are being taken

into account in provision of education for learners with Hearing Impairments. Specifically, the study sought to examine the availability of teaching and learning resources, staff pedagogical competence, and the quality of the learning environment in terms of appropriateness and class size.

LITERATURE REVIEW

There are many factors that affect the provision of quality education generally. However, this study focuses on factors related to the provision of quality education to hearing impaired learners. Some of the factors however are the same for both the hearing and the hearing impaired learners. The provision of quality education depends on many stakeholders in the education of hearing impaired learners playing their roles. The government, the school administrators, teachers, parents and the community should all play their roles in the provision of necessities to the learners with hearing impairment to avoid quality education being compromised.

Teaching and learning materials are very important in the provision of quality education. They are extremely important to the hearing impaired learners who mainly use sight for learning. Horton (1988) and Borich and Kash (1978) postulate that quality education depends more on trained teachers, administrators, and availability of materials, books and so forth than whether the programme is either in special schools or is in an integrated programme in regular school. This view is shared by the Ministry of General Education curriculum framework which indicates that; "Quality education requires the availability and use of appropriate educational materials. (Zambia Education Curriculum Framework – 2013) However, the provision of teaching and learning materials should be accompanied by the use of correct teaching methods. The hearing impaired learners should not be taught the same way the hearing learners are taught. This is because the hearing impaired learners depend on sight for their learning. It therefore calls for teachers to use a lot of teaching and learning materials and interactive methods when teaching them.

The hearing impaired have different levels of impairment and the teacher has to tailor the teaching strategies or method to a specific learner. Wikipedia, the free encyclopedia claims that, "A teaching method comprises the principles and methods used for instruction to be implemented by teachers to achieve the desired learning in students." It further says teaching methods employed by the teacher are determined partly on subject matter taught and partly by the nature of the learner. For a particular teaching method to be appropriate and efficient it has to be in relation with the characteristics of the learner and the type of learning it is supposed to bring about." Mbewe (2014) claims that the teaching strategies for deaf pupils may seemingly be the same as those of others, but certain variations have to be considered in handling the learners with special educational needs. He claims that this is due to age variations, subject content and levels of progressive education assimilation. Kay (1971) emphasises the importance of teaching and learning materials and claims as the term implies the materials are intended to help the teacher to teach more effectively, or better still, which enable the learner learn more readily. Mbewe (2014) insists that when teaching the deaf children, it is important to think visually. He therefore suggests that using visual clues and resources will help a deaf child access your lesson and develop their understanding.

Chantamani (1992) points out that special teaching facilities are required to meet the personal and social needs of the exceptional children. A specialist teacher has to use a variety of methods when teaching hearing impaired learners. This is because each learner has its own special need and therefore teaching methods for the hearing impaired learners must be interactive in nature. A study done by Nambuya (2013) revealed that teaching methods affect the academic performance of learners. Brennan (1985) and Mercer and Mercer (1989) state that children with special educational needs show greater variation in learning and to meet their needs, the teacher must have a greater variety of teaching and learning materials. The use of new technology as a teaching strategy should not be emphasized. New technology can be used as a teaching strategy as well as teaching and learning material. Brennan (1988) postulates that some specialised equipment in use for pupils with special needs is almost entirely facilitating. This is supported by Ministry of Education (2003) who claim that with appropriate auditory aids, deaf and hard of hearing pupils can be as effective and capable as their hearing peers. Gearheart et al (1988) also points out the importance of special equipment, he claims audiovisual equipment and personnel can be of particular value to the teacher who has a student with a hearing impairment in the class. Muzata (2013) calls upon the Ministry of Education, Science, Vocational Training and Early Education to have a policy for employment of assistive technology in education for learners with hearing impairments and other categories.

Quality teaching and learning depends very much on a teacher. Hopkins (2001) claims that quality teaching was identified as a key influence on outcomes for learners with special educational needs. Teacher qualification therefore is very important when handling learners with special educational needs. Derville (1990) points out that knowing the subject we teach is not the same as knowing what we teach. In many cases, teachers know the subject they teach but not how to teach it. It is therefore very important that the hearing impaired learners are taught by qualified teachers. Teachers need a lot of capacity building programmes. This is because there are new innovations in teaching all the time. In a research carried out in South Africa, educators that reported that they were not equipped to manage diversity were asked what capacity building they required. Approximately 81 percent of these educators reported that they needed to be trained on how to deal with diverse learning needs in their classrooms. (Research Dynamics South Africa. (2001 pg. 42) Many teachers remain behind in pedagogical areas because of lack of capacity building. It is worse for teachers of the hearing-impaired learners who most of the times are left out of the many capacity building activities available to the teachers in the mainstream.

Study Design

A descriptive design using qualitative research technique was used in the study to gain an in-depth understanding of structural factors that might influence the quality of education being provided to learners with Hearing Impairment.

Sample

The target population included specialist teachers, ordinary teachers, guidance teachers, school administrators and learners with Hearing Impairment.

The sample size comprised hundred and thirty five (135) participants consisting of; twenty five (25) specialist teachers, twenty (20) school administrators, ten (10) guidance teachers, forty (40) ordinary teachers, forty (40) learners with Hearing Impairment.

Research Instruments

Semi-structured questionnaires were used to collect data from the participants. The questionnaires were used on specialist teachers, ordinary teachers, guidance and counselling teachers, school administrators and learners with Hearing Impairment.

Data Analysis

Data was analysed using thematic approach. The analysis allowed synthesizing the findings in line with the themes of the study.

RESULTS

The study sought to establish the school factors that affect the provision of quality education to learners with Hearing Impairment in selected special schools /units of North-Western province. In examining factors influencing provision of quality education to learners with Hearing Impairment, it was important to establish the levels of impairment among these learners. The study established that the levels of impairment varied among learners with Hearing Impairment who participated in the study; out of which 27 were deaf, 3 deafened and 10 were hard of hearing. Regarding the availability of teaching and learning resources, the study revealed that special schools did not have adequate teaching and learning resources, even where these resources were described to be adequate, they were not appropriate for learners with Hearing Impairment. Most of the special schools visited reported that learners with Hearing Impairment in special schools/ units were made to shared text books in the ratio 1 to 3.

One specialist teachers had this to say;

“The schools does not provide us with suitable teaching and learning materials for all the categories of our learners. We have to rely on what is used in the mainstream which is not very suitable to our learners, we can make some modifications but there some teaching and learning resources we cannot modify.”

Another one said;

“We do not have teaching and learning resources in the school not even for those in the mainstream. We are therefore forced to make our own teaching and learning resources which can fit our different learners. It is however very involving as we have different learners performing at different levels and this makes our work very difficult. If only the Ministry can provide us with the necessary resources, it would make our work much easier.”

Furthermore, teaching learners with Hearing Impairment requires the use of specialized equipment. The study revealed that special education schools/units were not receiving specialised assistive equipment like hearing aids, speech mirrors, audiometers, projectors, televisions and video machines from the Ministry of General Education. It was also found out that the hard of hearing pupils who needed hearing

aids were not provided with the aids. This is exacerbated by low funding towards the special education sector. Most of the school administrators reported that funding was far too low for them to afford buying expensive specialized assistive equipment to enhance teaching and learning for learners with Hearing Impairment. This to a larger extent compromised the quality of education being provided to the learners with Hearing Impairment.

One school administrator had this to say;

“The school funding is very inadequate. We fail to buy the school necessities even for the hearing learners. At times, the school does not receive any funding for the whole term and since there is free education in the primary schools, we find it very difficult to provide the necessities for both the hearing and the hearing impaired learners. If only the school was funded monthly, it would help the school in procuring the school requirements.”

The study further sought to examine the quality of learning environment with respect to class size and appropriateness. It was revealed that most of the specialist teachers were handling over enrolled class and this was affecting the teacher pupil contact time and the quality of teacher pupil interaction. The classrooms were also found to be inappropriate for learners with Hearing Impairment as the rooms were not acoustically designed. The ability of the learners to hear what is being taught remains critical in the learning process. However, for learners with Hearing Impairment their ability to understand what is being taught and their participation in the learning process can be affected when background noise and audio reverberation is so high to extent that it interferes with teaching and learning. Thus creating a quality learning environment where effective communication can take place remains crucial in ensuring quality education for learners with Hearing Impairment.

A specialist teacher lamented over the class enrollment. He said the following;

“I teach a class of twelve learners of different hearing losses and different ability levels. I have to prepare work for all the learners and because of the numbers, I am forced to teach the learners as a class and not as individuals. This I know is against the norms of special education but there is nothing I can do as there are only two of us trained in handling the learners with hearing impairments.”

Another teachers said;

“The classroom we use are inappropriate for teaching hearing impaired learners. The room are small, dark and lacks proper ventilation because it was built as a storeroom and not as a classroom. This affects my teaching as the learners sit in rows and not in a semi-circle and I also have problems when moving around. I am therefore forced to stand in front all the time when teaching.”

Regarding staff pedagogical competence, the study established that most of the specialist teachers were using teaching methods which were suitable for the hearing pupils such as lecture method, question and answer, inquiry method and group work. For instance, out of the 25 specialist teachers that participated in the study, the most frequently teaching methods

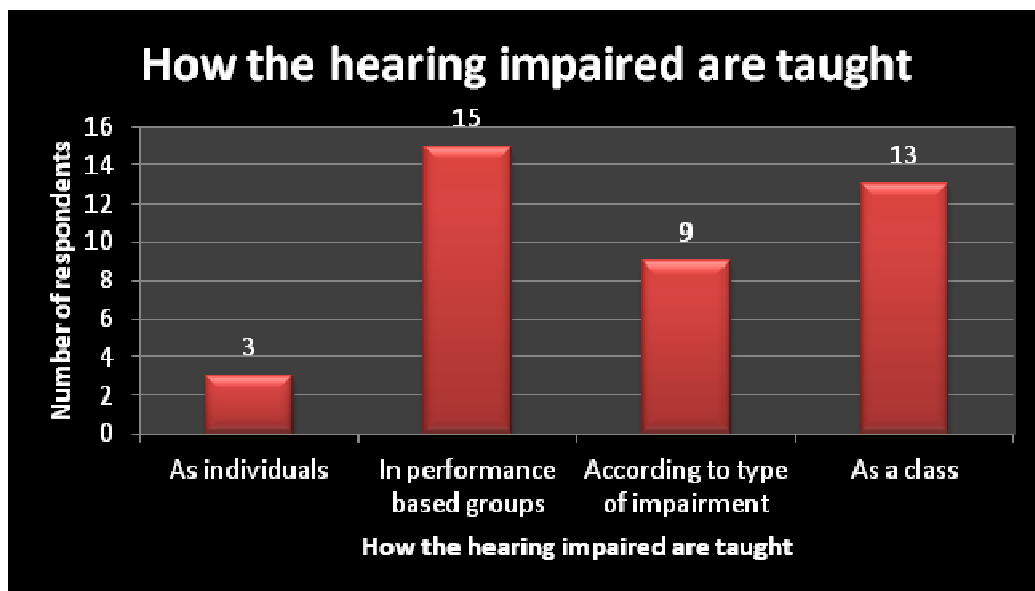


Figure 1: Teaching approach.

cited were; 10 indicated that they used lecture method, 3 used question and answer method, 4 applied inquiry method, 6 used group work and 2 employed outing lessons. Individualized and interactive teaching method was not cited by any of the teachers. The study also revealed that hearing impaired learners were being taught as a class and not as individuals. This is against the education policy on special education which propagates individualized education for learners with disabilities. This was confirmed by learners with Hearing Impairment when they were asked to indicate how they were taught as presented in figure 1 below;

Clearly, learners were mainly taught as a class or according to performance based groups. One Hearing Impaired learner noted the following;

Our teachers were mainly using the same teaching methods used in the mainstream. These methods are tailored for the hearing learners and we are not benefitting a lot from learning. There is need to modify and adapt methods to suit our needs.

Another learner had the following to say;

We learn at a different pace so it is unfair to subject us to this arrangement where we learning as a class. Our teachers should prepare different methods to meet our individual needs. Undoubtedly, the teaching methods being employed to teach learners with Hearing Impairment did not promote effective learning. Most of the respondents attributed this to lack of appropriate teaching and learning materials as they claimed that the schools did not receive teaching and learning resources from the Ministry of General Education and this affected the quality of teaching. While this could be true, it is important to note that the specialist teachers were not very innovative in the production of teaching and learning resources as they expected the Ministry of General Education to provide them with the necessary teaching and learning resources. The type of teaching method a teacher employs also may depend on the time allocated on the time table. The study revealed that most of the teachers spend less than four (4) hours on teaching learners with Hearing impairment which is not adequate

considering the diverse levels of impairment. On specialist teacher qualifications in special education, the study revealed that of the 25 specialist teachers, 2 had certificates, 17 had diplomas and 6 had degrees. The teachers were therefore well qualified to teach the hearing impaired learners. However, even with these qualifications, the teachers were not preparing individualized education programmes for the hearing impaired learners.

All the 25 specialist teachers in the study revealed that they were not involved in continuing professional development. In many cases, only teachers from the mainstream were considered for capacity building leaving those who handled learners with hearing impairments. One of the specialist teachers had this to say;

“When there is capacity building in many subject areas, those of us from the special education unit are left out. This has made us lag behind in many pedagogical areas as we are always told that the training is for the teachers handling hearing learners and moreover, even the trainers don’t know the methods to use when teaching hearing impaired learners.”

Another specialist teacher said;

“We see a lot of our colleagues from the mainstream going for further training to Universities and colleges under the fast track arrangements and others have been going outside the country to go and learn how to teach mathematics, Science and Technology but no specialist teacher is considered.”

It is very important that specialist teachers are also considered when teachers are being capacity built since their learners write the same assessments at the end of the year and during school assessments.

DISCUSSION

The provision of quality education to pupils with hearing impairment is attainable if teachers use effective teaching methods and suitable teaching and learning resources. The hearing impaired pupils utilise their sense of sight to the maximum in their learning. This therefore entails the teacher

to use teaching methods that will require the learners to see and touch. The teaching methods should be accompanied by a lot of visual teaching and learning resources. The hearing impaired pupils will benefit more if the teacher can use interactive methodologies like; Role play; Dramatization; Group discussion, Inquiry approach; Discovery approach; Problem solving; Demonstration; Debates; Field trips and Projects. Hearing impairment is a term is to describe people who have no or poor hearing. This term includes those people who are deaf and cannot hear anything because they were born deaf, the deafened, these people were born hearing but along the way lost their hearing and the hard of hearing. The hard of hearing can hear sound when it is amplified. According to Shea and Bauer (1994) the hard of hearing people have residual hearing in them. They do hear when sound is amplified and can communicate normally as long as sound is amplified to their level of hearing. It is therefore important that the school and parents buy hearing aids for the hard of hearing if they were to benefit from the teachers. This will enable the hearing impaired learners acquire quality education as communication will be easy for them with the aid of hearing aids especially when they are correctly placed in the classroom. Knowing the type of hearing impairment a child has is very important as this helps the teacher to know the type of method to use when teaching the learners. This helps in determining the mode of communication to be used when teaching and communicating with the learners. It also helps in placement of the learner both institutionally and in the classroom. The term hearing impaired is all inclusive.

The use of teaching and learning resources can-not be over emphasised when teaching the hearing impaired pupils. The hearing impaired learners find it very difficult to learn in abstract. They learn better when they are involved in touching and manipulating teaching and learning resources they can see. Teaching methods employed by the teachers depend on the teaching and learning materials at their disposal. There is no effective learning that can take place without the use of teaching and learning resources when teaching the hearing impaired pupils. It is therefore very important that special education schools and units are provided with all the necessary teaching and learning resources for effective teaching to take place. Specialist teachers who know their own individual pupils learning styles should also be very innovative in preparing their teaching methods and teaching and learning resources where possible. The walls of a classroom of the hearing impaired should always be talking. Hearing impaired learners need to see and learn from what they see on the walls or that which is displayed. Constant seeing what is on the walls and that which is displayed makes them always remember and encode the information. Special education schools and units for the pupils with hearing impairments need a lot of specialised assistive equipment. However, this equipment is very expensive and in many cases can only be procured from outside the country by the Ministry of education and other stakeholders. This has affected the provision of quality education to the hearing impaired pupils.

One area of concern in education is that of enrolment. Since the advent of Education For All, a lot of children have enrolled in schools and many teachers are teaching over enrolled classes. Over enrolment affects the teacher: pupil ratio. A teacher is supposed to handle a manageable number of pupils so that the needs of individual pupils are met. Over enrolment affects the teaching methods to be used when teaching the

learners as a teacher is forced to teach a class instead of individuals as per tradition in special education. It also makes it very difficult for the teacher to prepare teaching and learning resources teachers are required to make a variety of teaching and learning resources. Over enrolment makes specialist teachers use wrong methods of teaching as most of the teachers end up using non-interactive teaching methods. The hearing impaired learners by the nature of their disability need a lot of time for learning.

They use too much energy to comprehend what the teachers are saying and it is also very tiring for teachers to sign for a long time. This is in line with the views of Mercer and Mercer (1989) who claim that good teaching is a difficult job which requires a lot of both physical and mental energy but that students can bring enjoyment to teaching. A good teacher must always enjoy his good work. The teacher is the pupils' role model. He/she must be captivating and humorous. The teacher must be appealing to pupils. The teacher according to Winkler (1999) is the first to notice pupils with learning difficulties and can give advice on how to manage them. The teacher should always think of the best methods to use when teaching individual learners. The National assessment Survey (2008) a Ministry of Education document also pointed out the importance of enough learning time. It claims that pupil-teacher contact time remains very low in Zambian schools and suggested that the Ministry of Education and specifically the directorate of planning determines how it can increase the pupil-teacher contact hours. This is worse for hearing impaired learners who need more learning time.

In many cases, the hearing impaired learners use the same rooms with the hearing thus affecting their learning time as they need to leave room for the hearing learners to use the same room. Teaching time also determines the teachers' method of teaching. The teacher usually employs teaching methods that will suit the time given to them.

Conclusion

The study revealed that effective learning is not taking place in special education schools and special education units because specialist teachers are not using effective methods of teaching the hearing impaired pupils. It was also established that, teachers were not using effective teaching methods because they were lacking teaching and learning resources when teaching the hearing impaired pupils, their classes were over enrolled, they did not have enough teaching time and that schools and units were not provided specialised assistive equipment by the Ministry of Education. It can therefore be concluded that specialist teachers are not using effective teaching methods because of various reasons and thus effective teaching and learning is not taking place in special education schools and units.

Recommendation

- Specialist teachers must use effective teaching and learning methods when teaching the hearing impaired learners.
- School administrators must monitor teaching methods used by specialist teachers when teaching the hearing impaired learners.
- The Ministry of Education, Science, Vocational Training and Early Education should use data to guide changes that support continuous improvement in selection,

acquisition, and use of accessible instructional materials and allocate sufficient resources to ensure the delivery and sustainability of quality services to students with disabilities who need accessible instructional materials.

- The Ministry of education must provide schools with the necessary teaching and learning resources, specialised equipment and all other support services to the schools to enable specialist teachers plan and use effective teaching methods.
- Specialist teachers must be given enough time to handle their learners effectively.
- School administrators must ensure that specialist teachers have the correct number of learners in their classes

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