UNIVERSITY OF EDUCATION, WINNEBA

PERCEPTION OF TEACHERS TOWARDS THE TEACHING AND LEARNING OF PUPILS WITH LOW VISION IN NKWANTA SOUTH DISTRICT, VOLTA REGION

ENOCH NINA BANYIR

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DECLARATION

Candidate's Declaration

I, Enoch Nina Banyir, hereby declare that this dissertation, with the exception of quotations and references contained in published works which have all been identified and acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

Signature: ………………………

Date…………………..………..

Supervisor's Declaration

This thesis has been read and approved as meeting the requirements of the School of Research and Graduate Studies, University of Education, Winneba.

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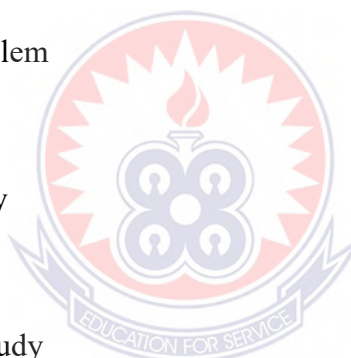**Signature: ………………………**

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ACKNOWLEDGEMENTS

DEDICATION

This work is dedicated to my lovely wife Larrey Esther, my father Mr.Banyir Dokurugu, my mother Afia Koyaja and my children Banyir Nilimor Mary,Banyir Mpopiin Manuella and Banyir Nmoandan Benedict.
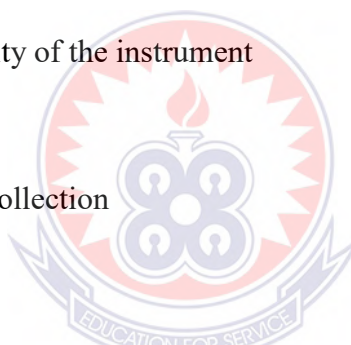
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ABSTRACT

The study sought to find out the perception of teachers towards the teaching and learning of pupils with low vision in Nkwanta South District, Volta Region. The cross sectional survey design was used to guide the study. The sample size for this study was 150 teachers. The method for the collection of data was questionnaire. The probability sampling technique involving simple random sampling techniques was used to select the sample size. Data was analyzed using frequencies and percentages. The results from the study showed that teachers did not have adequate resources for teaching pupils with low vision. Moreover, teachers did not have writing materials such as magnifying lenses and telescopes. Teachers faced challenges in teaching pupils with low vision such as adapting the curriculum to suit the needs of pupils with low vision, could not assist pupils with low vision to read and write in braille and did not have requisite skills in teaching pupils with low vision. However, teachers verbalize everything they wrote on the chalkboard for pupils and wrote boldly on the chalkboard. The researcher recommended that teachers teaching pupils with low vision should be taught the most appropriate methods of teaching pupils with low vision. Frequent in-service training should be organized for teachers teaching pupils low vision.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The perceptions of teachers towards the teaching and learning of pupils with low vision cannot be underestimated. The teachers" views can either improve the learning of pupils with low vision or derail their performance. Pupils with low vision form a group of pupils with vision impairments that require various and diverse attention from the teachers. Learning is a prerequisite for the normal functioning of every child. The processes of learning have been observed to be the same for all pupils. However, pupils with low vision experience peculiar learning problems and thus require special assistance. Teachers who are effective in teaching pupils with low vision understand their learning problems and instructional approaches that enhance their learning competence (Okeke, 2004).

For pupils with low vision, the acquisition of knowledge, skills and information about the teaching and learning in the classroom may be more challenging, particularly in the areas of concept development, language acquisition and movement. Pupils with low vision may need to learn to use alternative means and strategies for reading, writing, interacting socially and performing various daily tasks. Agbenyega (2007) have a view that, teachers expressed fear and concern, and that because they do not have the required knowledge and expertise to teach students with disabilities who are included in their regular classes; it is contributing to a reduction in the academic success of their schools. Many regular education teachers who feel unprepared and fearful to work with learners with low vision in regular classes display frustration, anger and negative attitude toward

inclusive education because they believe it could lead to lower academic standards (Berg, 2004).

Apart from teachers" negative beliefs about pupils with low vision and concern for their professional competency to practice inclusive education, resource issues also drew much concern for both teacher groups. Resource issues addressed physical aspects such as inaccessible classrooms to students in a wheel chair, overcrowded classrooms for pupils with low vision; materials such as Braille and large prints (Agbenyega, 2007). The teacher has become the focus of attention in modern world because of his unique roles in the society. The teachers are nation builders (Okeke, 2004). According to Webster and Roe (2008), adaptation of learning environment, well arranged classes and the use of different strategies allow learners with low vision to learn softly. Also, learners with visual impairment (those with low vision) may be placed in front of the class so that they are close to the teacher and chalk board. Pupils with low vision need enough learning materials such as Braille text books, braille writers, Perkins braille machines, computers, talking calculators, circuit television (CCTVs), telescope, enlarge text and talking books. Palmer (2005) stressed that the adjustment in teaching strategies, learning materials and other assistive devices, and good classroom management are necessary. Belief about the disability, ethnicity, attitudes, and concerns of teachers can influence the views of teachers, the quality of educational materials and instruction students receive (Sharma & Desai, 2008).

Mugambi (2011) opined that it is a challenge for teachers of students with low vision who require instructional methods that differ dramatically from regular programme. Critics assert that it is not possible to deliver effectively two or more very different instructional methods in the same classroom. As a result, the

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educational progress of students who depend on different instructional methods often falls even further behind their peers without disabilities (Mugambi, 2011). With regards to the challenges teachers face in pupils with low vision, Odero (2004) investigated curriculum barriers to successful inclusion of students with visual impairment in Kenyan secondary schools. He found out that lack of funds has resulted in decline in development of both physical facilities and instructional materials for special needs education. Furthermore, the research shows that there is not enough time in the school day for adequate training in the expanded core curriculum (American Foundation for the Blind, 2005).

It is in the light of this that this study sought to find out the views of teachers towards the teaching and learning of pupils with low vision, strategies teachers use in teaching children with low vision, resources available for teaching pupils with low vision and the challenges teachers face in teaching children with low vision in Nkwanta South District.

1.2 Statement of the problem

The implementation of inclusive education has brought an increase in the enrolment of children with low vision in the Nkwanta South District. However, little is known about the views of teachers towards the teaching and learning of such children. Moreover, resources available for teaching pupils with low vision are not established by the researcher. It is not also clear; as to the challenges that the teachers face in teaching such pupils in the classrooms. This study was therefore set out to examine the views of teachers towards the teaching and learning of pupils with low vision in Nkwanta South District.

1.3 Purpose of the study

The purpose of the study was to find out the opinions teachers have towards the teaching and learning of pupils with low vision in Nkwanta South District of the Volta Region, Ghana.

1.4 Objective of the study

The study sought to.

- To examine the views teachers" have towards the teaching and learning of pupils with low vision in Nkwanta South District.

- To find out the strategies teachers" use to teach pupils with low vision in the Nkwanta South District.

- To find out the resources available for teaching pupils with low vision in the District.

- To find out the challenges teachers face in teaching pupils with low vision in the Nkwanta South District.
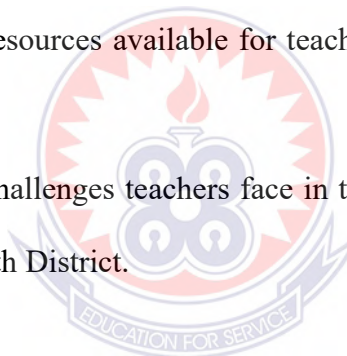
1.5 Research questions

The following research questions were raised to guide the study.

- What are the views of teachers towards the teaching and learning of pupils with low vision in the Nkwanta South District?

- What are the strategies teachers use to teach pupils with low vision in the Nkwanta South District?

- What are the resources available for teaching pupils with low vision in the District?

- What are the challenges teachers" faces in teaching pupils with low vision in the Nkwanta South District?

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1.6 Significance of the study

Findings from the study would reveal the views teachers have towards the teaching and learning of pupils with low vision in the Nkwanta South District. This would enable regular teachers to effectively manage such views, and relations in order to facilitate better understanding and awareness of the educational needs of learners with low vision. Teachers, special educators, policy makers and other significant personnel like non- governmental organization working directly or indirectly with student with low vision would be able to understand the perception of regular teachers toward students with low vision and adopt effective strategies to facilitate their acceptance. Additionally, the study would reveal the resources available for teaching children with low vision. More so, the challenges teachers face in teaching children with low vision would be known to teachers. Furthermore, the results of the study would add information to the body of literature in Ghana, with regards to teaching and learning specifically for children with low vision.

1.7 Delimitation

Though there were other categories of children with disabilities in the Nkwanta South District, this study was focused solely on the views of teachers towards the teaching and learning of pupils with low vision. This was because the researcher observed that pupils with low vision were many in Nkwanta South District and wanted to find out the opinions of teachers towards the teaching and learning of pupils with low vision. According to Ghana Statistical Service (2012), the sight impairment is the main type of disability from which most of the disabled suffer accounting for 34.4 percent in the Nkwanta South District. Physical disability also accounted for 29.9 percent   and the least reported disability type is other disabilities (8%).

1.8 Limitation

The study was conducted precisely in Nkwanta South District out of twenty-five (25) District in the Volta Region of which finding may not be enough but necessary bases for generalization.

1.9 Definition of Terms

Low vision: A person with low vision is the one who has impairment of visual functioning even after treatment, and/or standard refractive correction, and has a visual acuity of less than 6/18 to light perception or a visual field of less than 10^{o}(degrees) from the point of fixation, but who uses or is potentially able to use, vision for the planning and or execution of a task (WHO, 1992).

Impairment: Any loss or abnormally psychological, physiological or anatomical structure or function.

Vision: Ability to see clearly with eyes.

Visual impairment: Any damage to the eye that bring partial or total problem to the eye or inability to perform activities which demand the use of the eye.

Disability: Disability in general can be considered as a condition that in some way hampers or hinders a person in terms of his or her ability to carry out day to day activities.

Adaptation: The process of changing something (such as environmental conditions) to suit a new purpose.

Support: To give or be ready to give help to somebody if they need it.

Service: Work done by one person or group that benefits another.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter is devoted to the review of related literature on the subject under study. The literature review focuses on theoretical and empirical background of perceptions of teachers towards the teaching and learning of pupils with low vision in Nkwanta South District, Volta Region of Ghana.

The following themes were reviewed:

- Theoretical framework

- Views of teachers towards the teaching and learning of children with low vision.

- Strategies teachers use in teaching children with low vision.

- Resources available in teaching children with low vision.

- Challenges teachers face in teaching children with low vision.
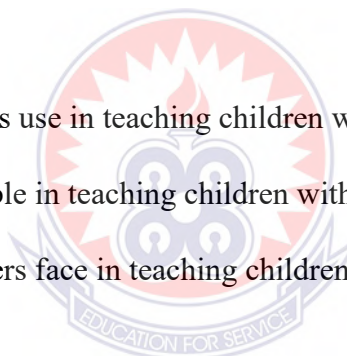
2.1 Theoretical framework

The theory of normalization postulated by Wolf (1980) cited in Mugambi (2011, p.8) involves the acceptance of people with disabilities, offering them the same conditions as are offered to other citizens. It involves an awareness of the normal rhythm of life-including the normal rhythm of a day, a week, a year, and the life-cycle itself. It involves the normal conditions of life – housing, schooling, employment, exercise, recreation and freedom of choice. This includes "the dignity of risk", rather than emphasis on "protection". A significant obstacle in developing community support has been ignorance and resistance on the part of "a typically developed" community Wilmshurst and Brue (2005, p.25). Members who have been taught by our culture that

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"those people" are somehow fundamentally different and flawed and it is in everyone"s best interest if they are removed from society Wilmshurst and Brue (2005, p.25). Part of the normalization process has been returning people to the community and supporting them in attaining as "normal" life as possible, but another part has been broadening the category of "normal" to include all human beings Wolf (1980 cited in Mugambi, 2011, p.9). People with disabilities are not to be viewed as sick, ill, abnormal, subhuman, or unformed, but as people who require significant support in certain (but not all) areas of their life Ndurumo (1993). This comes with an understanding that all people require support at certain times or in certain areas of their life, but that most people acquire these support informally or through socially acceptable avenues. The key issue of support typically comes down to productivity and self-sufficiency, two values that are central to our society"s definition of self–worth. These was found relevant for this study because for a long time the child with visual impairment has been segregated from the sighted when it comes to education. Through education their life has been turned to normal just like any sighted child.

2.2 Views of Teachers towards the Teaching and Learning of Pupils with Low Vision

2.1.1 Views of general education teachers

Avissar (2007) examined regular teachers" views towards teaching and learning of pupils with low vision. Pre-service education service trainees conducted in depth interviews with 50 general education teachers. The major findings revealed that inclusion of pupils with low vision was practiced in all the school, however, not all teachers felt that they were actively involved in it, despite the fact that students with visual impairments were mainstreamed into their classrooms. Several educational models of inclusions were identified, yet each school seemed to have used its own

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variation and interpretation of inclusion. Teachers" attitudes towards inclusion were favourable, yet they identified several difficulties and issues related to teaching and learning of pupils with low vision. These included teacher knowledge in remedial practices, lack of professional support, class size, behaviour problems and school climate. With regards to the understanding of the concept of inclusion, teachers" responses revealed a varied yet somewhat blurred picture.

2.1.2 Teachers views on low vision in inclusive classrooms

Kuyini and Desai (2007) investigated primary school teachers" views and experiences in implementing the inclusive education policy in regular schools in five districts of the Enga province of Papua New Guinnea. Six primary schools were selected and involved 77 teachers who responded to questionnaire items, while 12 teachers within the group were chosen to involve in interviews. The findings from the study revealed that most teachers supported the notion of Inclusive Education Policy and would like to implement it. However, they indicated that there needed to be a change in attitude of teachers, Peers, board of government, and parent/caregivers to provide assistance for children with visual impairments. Most teachers felt that there needs to be more awareness of the principle and the importance of low vision in the inclusive. Kuyini and Desai (2007) reported that teachers admitted they needed more training in the field of educating children with visual impairments in order to accommodate and teach children with low vision which shows that teachers colleges and universities need to have trained lecturers, develop more courses in special education. Teachers expressed concern that school inspectors do not know enough about visual impairments in the inclusive education concept and need to be trained as well so collaboratively they could implement the inclusive education policy. This includes training of specialists to support teachers, funds for teachers and learning resources

and facilities in schools. Government support is needed to effectively implement the inclusive education policy.

Cook (2001) stated that teachers do not want to work with students with visual impairments and those with behavioural problems but are willing to teach those students with obvious disabilities. This negative attitude was seen in further research where general classroom teachers in New York reported their responds to inclusion as "hostile and anxious" (Soodack, Podell, & Lehman, 1998, p.492). These teachers were more aggressive when having children with intellectual disabilities, visual impairments, learning difficulties and emotional and behaviour disorders than those with hearing impairment or physical handicaps. The findings were in line with other research that found that teachers had more positive attitude towards including children with social and physical disabilities, compared to those with academic or behaviour disorder (Wilczenski, 2006). Therefore, it appears that certain children with disabilities are considered easier to be included in inclusive classroom programmes.

Many teachers seem to have the perception that teachers" aides are responsible for providing academic support for children with low vision and therefore they do not need to spend much time assisting these children. A study in New Zealand indicates that most teachers depend too much on their teacher aides to provide academic work for children with visual impairments (MacArthur, Kelly & Higging, 2005).

According to Ward (2005), administrators, teachers and aides" primary concern for successful inclusion of persons with low vision were teacher compatibility, followed by positive attitude and formal teacher training as the most essential component for successful inclusion of students with disabilities.

Mohanty (2008) stated that regular teachers were asked to teach pupils with low visions without receiving any formal trainings as well as administrative assistance, but inclusive education demands the classroom teacher to be innovative, flexible, creative, ready to learn from the learners and capable to initiating active learn. The challenges encountered in the course of implementing inclusive education and mandate from different directions such as attitudinal factors, rigid school system, resistance to a change, lack of clear educational guidelines and fear of losing of ones job on the part of special school teachers.

Beyene and Yinebeb (2010) cited in Kabeto (2015) found that most teachers reject the admission of learners with disabilities into their school. Also, teachers refuse the placement of learners with disabilities in their classes. Engelbrecht (2003) cited in Kabeto (2015) gives a detailed description on how many attitude problems occur through human interaction in the school community. This includes relations between teachers including principal, teacher relations, and relations between teachers and learners, teachers and parents, and between psycho–social environment and within learners themselves. The psycho-social environment of a school can act either as a barrier to or opportunity for learning and development. The psychological and social aspect of the school environment is strongly affected by the administrative and management style and practices. The attitudes of teachers influence effective use of resources in the classroom and implementation of interventions to improve pupils" mental health in school, their level of stress and burn out, and their learners" achievement and social emotional out comes (Deiner, 2010: 128).

Ocloo and Subbey (2008) explain, in addition, that most of the head teachers reject the admission of learners with visual impairment into their schools for the reason that such learners with disabilities will lower the academic standard of the school. Moreover, most teachers refuse the placement of learners with disabilities in their classes with the notion that this may be unrewarding and burdensome. The rejection is stronger with those children with severe disabilities than for those with less severe disabilities. Negative school experiences of children with visual impairment have been linked to teachers" low level of knowledge of disabilities and intervention techniques and in-sufficient special education support (Scott & Murry, 2001 cited in Kabeto, 2015). Engelbrecht, Oswald, Swart, Kitching and Eloff (2005) cited in Human, (2010) states that placement options for learners with low vision are limited, because not all schools as yet really accept a learner with low vision. Acceptance of the basic rights of learners with low vision is at the heart of placement issues and the formation of inclusive school communities, but the mere acceptance of the learner by obligation as required by law does not assure a culture of inclusion.

In a study compiled by Davis and Watson (2001), they were constantly told by teachers how different the learners with low vision were to them. These differences were based on value judgments. They also found a constant tension between the notions of difference imposed by the staff and their wish that learners should be "normal". The learners were constantly reminded that they were essentially different from their non-disabled peers, but they were also compelled to conform to specified ways of speaking, walking, table manners and so on. From the above it is evident that the training of educators will need to change in order to make inclusive education a reality (Mowes, 2007 cited in Human, 2010). Anderson (2006) in his finding have a view that inclusion of pupils with low vision in a regular classroom draws attention to

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the differences of those people that led to their exclusion in the first place, and inclusion initiates the sense that "they" are not "one of us", but we make efforts to include "them". By speaking of inclusion one may actually devalue the learner, as it may accentuate the differences rather than truly bringing the learners together. Simply placing a learner with low vision into a regular classroom does not counter the "ghettoization"; though present in the classroom, the learner may still not be an integral part of the class (Anderson, 2006, p.28). Grove and Fisher (1999) cited in Human (2010, p.18) agreed that the mere acceptance of the learner by obligation, as required by law, might lead to categorisation and labelling of the learner, as differences are then invariably not honoured, but merely tolerated.

Children who have been exposed to bad experiences and stressful circumstances are considered at risk to develop bad attitude and behaviour. Resilience is an individual"s ability to cope with stressful situations and it can be learned or developed in school, in the family or in the community. Teachers can make a difference in the life of their learners by teaching them how to deal with stress and strengthen them so they can bounce back from disappointment, fear or anger (P. Churko, Personal Communication 2nd August, 2012).

When children enter school, their self–concept is already substantially formed, primarily through the influence of family. The impact of the school environment cannot be over looked. It is a combination of school factors, family and innate intelligence that appears to be an essential ingredient to increasing learners" self – esteem during the academic years (Dustin, 2012, cited in Kabeto, 2015) The United Nations Educational, Scientific and Cultural Organization Survey (2007) cited in Ocloo (2011) on teachers views on integrated education points out that, countries

where teachers favour education for all children in ordinary classroom, have a law requiring that, but in countries offering sophisticated segregated education, teachers are not in favour of integrated education. Teachers are key implementers of any education, policy and their perception is very vital towards success or failure of the policy. Mugambi (2011: 25) stated that in Latin America, a study pointed some of the barriers to integrated education as teacher"s low perception of learners with visual impairment and unwillingness to meet their diverse need of learning. This was attributed to lack of training in a heterogeneous approach.

Helsinki, Salvoloinhen and Kokalah (2000) opined that positive attitude of teachers depend strongly on teachers" education, availability of support materials, class size and work load (Helsinki et al, 2000). The success or failure of integrated education is dependent on teachers" learners with visual impairment fearing that they may lower the standards means score for the class since teacher performance is evaluated in terms of mean score in final exam (Republic of Kenya., 2003).

Ocloo (1994) observed that most teachers in the schools for the blind in Ghana ignore the use of the chalkboard in their classroom, forgetting of the presence of pupils with limited vision. According to him, quite a number of teachers in the schools for the blind are themselves blind. This means in effect that they can never assist children with low vision with visual materials or optical devices. Ocloo (2011) citing Lowenfeld (1980) also stated that in most developing countries children with low vision are educated in the mainstream of the schools of the blind; a condition which impedes their academic progress. He cited over reliance on non-visual means of delivery of instruction and evaluation as observed that partially seeing children who are forced learn braille use all kinds of tricks to read print or Braille with their eyes.

According to him the partially sighted child whose visual capability is neither recognized nor used in liable to become a frustrated individual, causing problems for him/her and for the school in which he or she is placed. This is why it extremely necessary to educate children with residual vision in the mainstream of regular school with adequate education support. There is the need to teach children with limited vision using methods that are universally accepted.

For instance, a UNESCO Seminar (1981 cited in Ocloo, 2011) at Malawi recommends that children with visual handicaps, who still have some limited, useful vision, should be encouraged to use their sight unless there is a clear medical evidence for not doing so. It was also recommended that children should be taught to read and write ordinary script supported by Braille only to the extent that this is justified by a particular child‟s present and assessed future visual acuity.

In several studies it is also indicated that teachers are often not prepared to meet the needs of learners with significant disabilities. There are common concerns like teacher‟s time taken away from the rest of the learners, class size; lack of training and resource materials is not given. The content validity is not assessed by teachers and experts in the field of special needs education (Deiner, 2010).

2.3 Strategies Teachers Use in Teaching Pupils with Low Vision

2.3.1 Early intervention

Early identification and intervention is key in the design and implementation of effective management strategies for children with visual impairments and blindness (Gadagbui, 2013). Koenig (1996) cited in Yalo, Indoshi, Agak & Were (2010) suggested that early intervention in visual stimulation and subsequent training of learners with low vision should be instituted to intervene for the learners to use vision

efficiently. Barraga (1985) cited in Yalo, et al. (2010) posited that low vision training improves visual efficiency. It is of critical necessity to have learners with low vision to train in low vision techniques from the earliest time possible so that they can develop good visual efficiency.

2.3.2 Lighting and the use of visual aids

A child with a low vision can perform visual tasks almost like a sighted student with the use of special aids and lighting. Lighting needs for a class room depends upon the operating times of the classes. Typical class rooms require 3 number of 15 Watt CFL bulbs which are fixed to the level of the underside of the trusses, or at ceiling level (Ministry of Education, Rwanda, 2009: 12).

Daylight as well as ample natural light with good illumination levels should be provided. The use of glazed windows or other solutions should maximize the use of natural light. Adequate light levels must be achieved by providing unobstructed window area of $12m^2$. Window openings should be equally spaced on two sides of the room to avoid dark corners. It is especially critical to have good lighting at the chalkboard and desktop (Ministry of Education, Rwanda, 2009: 21).

2.3.3 Seating arrangement

The type of impairment must be considered before seating the child. The teacher must make adequate efforts to place that child in a position in the classroom where the child has as much access to the blackboard as possible. (Gadagbui, 2013:71).

2.3.4 Reading materials

Besides size of print it is important to consider the quality and quantity of print used. The size, colour and contrast of print on paper determine quality and should be the primary consideration. Print can be enlarged by some form of magnification using a

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low vision aid, or by an enlarging photocopier but it can be counterproductive to enlarge poor quality copies as the faults are also magnified. Contrast and clarity are essential, it is also important to try to avoid those books which have print across the illustration, causing unnecessary confusion. Some children may also prefer to place a card or ruler under the line they are reading and „"reading windows"" can be particularly useful to the child who finds it difficult to focus on a word or line of print (Gadagbui, 2013). Barraga (1985 cited in Yalo et. al.) observed that by repeated observation of visual materials brought very close to the eye or by use, of enlarged materials, some children develop considerable visual efficiency. If little encouragement and no planned activities to use vision at near point are put in place, children may encounter few experiences which stimulate maximum use of low vision. Therefore, their visual skills and behaviours will remain underdeveloped.

Most children with low vision will experience difficultly in reading from the chalkboard and in order to help them, the teacher needs to verbalize and describe whatever he/she is writing or doing which is necessary for the class to know. In writing words on the chalkboard for instance, the teacher should write boldly and spell out the letters that constitute the words. This will facilitate learning in children with low vision (Ocloo, 2011).

In order to meet the needs of pupils with severe visual impairment who are non – visual learners, the teachers of these children should know Braille reading and writing. These categories of children can also be taught the use of personal readers, computers and ordinary type – writing, listening skills, study skills, tactual dexterity, concept development and routine activities for the performance of survival skills (Ocloo, 2011).

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2.3.5 Communicating effectively with the child with low vision in class

According to Ocloo (2011) citing Baine (1991) there are several ways by which teachers can communicate effectively with the child with low vision. He gave the following as general suggestion:

- Teachers should make sure of having student"s attention before beginning instruction or demonstration. A student"s attention may be gained and directed when discussion is begun by saying the student"s name, by turning the lights briefly on and off.

- When speaking to a low vision student, the teacher should not stand with a light source (e. g. window) behind him or her preferably; the light source should be behind the student and fall on the teacher"s face and upper body.

- When giving instructions or demonstrations to a whole class, the teacher should move closely to students with limited vision. The student may be asked to narrate, explain and demonstrate what they have seen /heard, to avoid public ridicule of students, it is necessary to ask children with low vision privately.

- The teacher can use tape recorded versions of his lesson or lectures for students with low vision. Also, wherever possible, students with limited vision should be taught to make brief and effective notes. These notes should be occasionally reviewed by the teacher. The accuracy if the notes should be evaluated.

- Students should be taught to use personal computers and type writers without looking on the keys. Concrete manipulative objects that students can see and touched should be used during teaching moments.

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- Avoid giving students faded or blurred sheets which have printed materials on both sides.

- Care should be taken to avoid presenting too many materials on a page. Print with large letters when necessary.

- Large spaces should be left for calculations and answer on mathematics sheets. Students with visual impairments often write letters and numbers large than other students do (p.153-154).

2.3.6 Learning by doing/self-activity

Gadagbui (2013) stated that, as a result of their sight limitation, they need to be actively involved in performing tasks. Instructional materials must be enough to go round. Hand –over –hand technique (such as in cutting or stirring stew or brailing) is employed. Questioning pattern should involve all children as teacher calls the names of pupils else some will doze off. High achievers should serve as peer tutors to assist slow learner. Where hand – frames and stylus, Braille machines, talking calculators are used the teachers should ensure that these are used properly (p.73).

2.3.7 Additional stimulation

- Involves verbal prompt to explain future concepts.

- Task Analysis- break various tasks into smaller sub – task.

- Hand –on – hand techniques.

- Mention the children‟s name.

- Touch or level of physical contact must complement children‟s name(s).

- Verbalize whatever you write on blackboard especial, in a mainstream or in special school. Call their attention to "see" what they should see "Look" at

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what they should look at. This is because 90% of the visually impaired have useful residual vision for which they can see to an appreciable extent.

- Use of abacus, hand frames and stylus etc. can serve as additional sources of stimulation (Gadagbui, 2013, p.74).

2.3.8 <u>Assigning independent work to children with low vision</u>

Children with low vision like their normal sighted counterparts need to grow to lead independent lives. It is necessary to train them towards the achievement of independence. In order to build confidence in their capabilities, teachers should learn to assign independent work to children in this category. Baines (1991) cited in Ocloo (2011) suggested the following approaches:

- When a student with extremely limited vision is working with several different materials, small boxes or other receptacles may be used to help the student organize and find the equipment with relative ease. When students are working on a large surface where materials may become misplaced or move to another students area, a border may be placed around the students work place.

- A bookstand or reading stand may be used on a student"s desk to free the student, hands to hold the book closer and also hold it at a better angle for reading.

- A fellow student who is quite co-operative and brilliant may be assigned to work as assistant to the student with limited vision. The assistant can copy material in large print, describe events that are happening and read to the student when required. The person can also take notes onto tape recorder to be listened to in the future. This should not lead to over – feeding the students with visual impairments. They must be taught to be independent as much as

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possible. Caution must also be taken to ensure that the assistant is not over –
burdened in the process of helping the child with limited vision.

- Students with low vision should not work in shadows or on highly polished
surfaces from which glare or reflection may reduce vision (p.154-155).

2.3.9 The need for unifying experience

Many of those children learn in piece meal or in fragmented way. It is the teacher‟s
job to assist the visually impaired to bring all the little details together for a holistic
framework. The teacher therefore needs to emphasize the main points at each stage
and unite the information for a proper comprehension (Gadagbui, 2013:76).

2.3.10 Individualization approach

- Know child‟s age of onset of problem since he/she may have some visual
memory or when born with it, he/she may not.

- Teacher should start from simple to complex; concrete to abstract and from
known to the unknown.

- Teacher is to use the chalkboard and explains whatever he/she is teaching.

- When giving demonstration of a dark colored object, it should be done in
front of a light colored background and use a rich verbal description of each
task.

- Low vision children must wear spectacles to fit properly on their nose.

- They must be taught how to keep it clean etc. (Gadagbui, 2013 p.77)

2.3.11 Using equipment effectively

There are various types of equipment that children with low vision use. Some of these
include optical devices such as lenses, telescopic loupes, closed–circuit television,
personal readers, Braille‟s tap – recorders, the low vision kit and reading stands

among others. In order for the teacher to help the child, the teacher should make sure that the child wears his or her glasses properly. The glasses should be kept clean. The teacher can advise parent to buy traps for the spectacles to maintain their safe use. Moreover, electronic devices should be used diligently. Sockets should be provided to those tables of students. It is important for the teacher to inspect the equipment very often to ensure that they are in good condition. Teachers should teach students how to maintain their equipment and know how to clean them and put them off when they are not in use or prevent their colleagues from playing with the gadgets. The teacher can help students to understand that the equipment's are expensive as well as indispensable to their learning and personal progress leading to career development (Ocloo, 2011:156).

2.3.12 Encouraging collaborative learning

It is believed that in a learning process students differ in capabilities. Student with low ability will learn from their fellow capable peers. Cooperative learning among students of different learning capabilities and learning needs, in an inclusive classroom, has proved to be effective in promoting academic achievement, positive attitude towards the subject, and improving social interaction among students (Johnson & Johnson, 1986; Lypsky & Gartner, 1997; Mastropieri & Scruggs, 2010; Vygossky, 1978; Wade, 2000 cited in Mwakyeja, 2013). Cooperative group learning involves learners working together in small learning groups. This helps students to help each other to carry out different tasks. Encouraging collaborative learning is good strategy of teaching students with visual impairment, particularly in the mixed ability groups. It is especially important in third world countries where classes are very large (Mitchell, 2008). In these groups, students with visual impairments should

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be paired with their fellow sighted students who will help them to organize their works, find correct pages and repeat teacher‟s instructions (UNESCO, 2014).

2.3.13 Using questions and answers

Oral method of giving instruction and receiving response from the students can also be a good option. A teacher of students with visual impairment can write down the answers given out orally by a student with visually impairment. Moreover, a tape recorded can be used to record the answers the student is giving. However, through this way, a student cannot review the answers he or she has given for possible correction. Therefore, students with visual impairment and teachers of students with visual impairment should be consulted before the test is taken, in order to find a better way of assessing a student with visual impairment (Spungin, 2002 cited in Mwakyeja, 2013).

2.3.14 Sound projection and calling students names

Since students with visual impairments do not see, they rely on the voice of the teacher as one of the main source of information for learning. It is therefore important for teachers to do some or all of the following: -firstly, the voice of the teacher has to be pleasant. By pleasant it means that it should produce relaxed tone and pitch. Secondly, the voice of the teacher needs to be interesting to listen to. Speed of talking, volume and pitch are very important to make the voice interesting for students (Best, 1992 cited in Ocloo, 2011). Thirdly, a teacher should avoid vague statements. Phrases like „‟over here‟‟or „‟ this and that „‟should be avoided as much as possible, because they do not help students with visual impairments to understand what a teacher is talking about (Mastropieri & Scruggs, 2010). Fourthly, during the teaching process a

teacher should read the notes aloud while writing them on the board or presenting them on the projector (Spongin, 2002 cited in Mwakyeja, 2013).

Fifthly, teachers should call the names of students first when they want to address a specific student, ask questions or give specific instructions so that students know specifically whom the teacher is talking to. This seems important, because it helps students with visual impairments feel that they are part of the class and they are effectively included in the lesson (Mastropieri & Scruggs, 2010; Salisbury, 2008). It is equally important to use students" names during class discussions so that students with visual impairments are in the position to understand who is talking (UNESCO, 2014). Finally, the language with that has been used for content delivery in the class has been a major hindrance for the level of engagement and academic achievement of some students, especially those with visual impairment (Grace & Grave Stock, 2009; Hannell, 2007). The best teacher is the one who uses simple presentation and communication. The best teacher also makes follow up on individual student"s task in order to make sure that they understand the lesson (Westwood, 2003).

2.3.15 Adapting written texts

To help students with visual impairment, teaching materials need to be adapted. For example, printed text can be adapted through increasing the font size, bolding the text, increasing contrast, adding colour, and adjusting spaces between characters. However, the extent of these adaptations depends solely on the severity of visual defects and the needs of the student concerned (Mastropieri & Scruggs, 2010). Therefore, it is important to consults a specialist teacher on preparation of materials prior to the lesson; because different students use different materials depending on the degree of their visual impairment (Spungin, 2002 cited in Mwakyeja, 2013).

Meanwhile, students with low vision should be provided with a copy of note which are written on the board or presented on a project. A specialized teacher for students with visual impairment, should help to clarify the lesson to them, and if possible, should teach them before the main teaching session start (Spungin, 2002 cited in Mwakyeja, 2013). If a teacher is writing on the blackboard or uses visual aids, it is important that he or she uses large writing text on the blackboard or visual aids. In addition, a teacher may use coloured chalks (UNESCO, 2011).

2.3.16 The use of audio, optical and non- optical audio devices

 Since students with visual impairments rely mainly on verbal information for their learning, audio devices should be incorporated to aid the teaching process. These include things like audio cassettes and compact discs. However, lesson contents with diagrams and tables cannot be well explained in an audio format (Salisbury, 2008). Moreover, a lesson can be tape recorded and given to students with visual impairments for later playback at their convenient time (UNESCO, 2001). Furthermore, if a videotape for example has to be shown, it is wise to show it to students with visual impairment so that through a specialized teachers or a classmate‟s explanation, they understand all the visual concepts in it before the class watch it. For a film with sub–tittles, a classmate or teacher can read aloud to the class to help those with visual impairment (Spungin, 2002 cited in Mwakyeja, 2013).

Optical devices such as eye glasses, magnifiers and telescopes use lenses to increase a person‟s residual vision. They are normally prescribed by a medical specialist while non–optical devices do not need incorporate a lens and do need to be prescribed by a specialist. Things like large print, Braille and Braille writer, tape recorders, books

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stand, recorded and talking, books and calculators etc; are examples of non – optical devices (Simon, Echeita, Sandoval, & Lopez, 2010).

2.3.17 <u>Extra time for assigned tasks</u>

Students with visual impairment complete their work very slowly due to the nature of their impairment (Mastropaieri & Scruggs, 2010). Therefore, extra time is extremely important for them to process visual information, and complete their written assignments (Salisbury, 2008). For example, student with low vision take longer time to read a text than students with normal vision. Also reading and writing in Braille as well as getting information from tactile sources for students with blindness consumes a lot of time. At the same time, students with blindness need much time to integrate information coming through hearing (Best, 1992; Mastropieri & Scruggs, 2010). Generally, it is acceptable to add half of the time for students with low vision, and twice as much for students with blindness (Spungin, 2002 cited in Mwakyeja, 2013). Many external examinations recognize this requirement and, therefore, give them allowance of up to 100% additional time for students with visual impairments (Salisbury, 2008).

2.4 Resources Available for Teaching Pupils with Low Vision

There are many equipment options available which can greatly assist students with low vision to access the curriculum and to pursue personal and career goals. Students need to learn to select the most appropriate aid or technology option that best meets their needs in a given situation, and they may require direct instruction in the use of each aid or item of technology. Yalo et al. (2010) citing Corn and Koenig (1996) stipulated that, the teachers must be in a position to help learners to incorporate the use of low vision devices into every day learning and leisure activities by selecting

low vision devices that are portable and therefore readily available when learners need them.

Yalo et al (2010: 4) posited that training the learner with visual impairment to use prescribed devices for near task involve unique set of factors that include the nature of visual impairment, the personality and motivation of the students" best mode of learning and the advantages and limitations of devices in use. Corn and Koenig (1996) cited in Yalo, et al. (2010) stated that, each learner can become efficient at visual functioning if provided with appropriate optical and non – optical low vision devices that are task specific. Teachers need to understand learners" idiosyncratic visual needs at hand. For example, teachers must have skills of selecting devices for near and distance tasks so that learners can be trained on how to make use of them (p.5).

2.4.1 Enlarged text

For students with some existing visual function, providing text information in enlarged format may be the simplest strategy. As a general rule of thumbs, 18 print or 24-point font size is good, but enlarging beyond that may not be efficient. Enlarged text can be acquired through a variety of resources, including publishers and vendor or materials modified through the magnification feature of copy machines, while text size of most digital materials can be easily adjusted to a user"s preference (Tebo, 2009) Screen enlarger software programs display information on a computer screen in a variety of magnification levels. The entire screen, a portion of the screen or just one line may be enlarged. A large print vision of text is material (e.g. textbook or novel) that has been prepared in a large font size. Standard large font is 18 or 24pt. (Burton, Knipe & Midtdal, 2010).

2.4.2 Green/bold lined paper

Green/bold lined paper has bold lines and enlarged spaces for students who have difficulty writing with regular lined paper. A range of different bold lined paper is available, e.g. graph paper for mathematics or staves for music notation. (www.svrc.vic.edu.au/CUboldp.shtml)

2.4.3 Telescopes

According to Sinclair and Ryan (2008) telescopes are very effective in producing magnification for distance, while allowing the person to stay at their chosen distance from a task, such as viewing a street sign or blackboard. They can also be used for a near task (p.24).

2.4.4 Closed circuit television (CCTV)

Closed circuit television is an electronic optic, new treatment option for reading and writing task in patients with very low vision. C.C.T.V provides higher level magnification than the spectacle and hand & stand magnifiers (from 20X to 30X magnification) Student Support Services (2006: 56).

The C.C.T.V system has many advantages.

1. Convert any material to large print instantly

2. Are the only devices that allow binocularity at high levels of magnification

3. Enable writing (for example, writing checks, doing crossword puzzles).

4. Provide wide field of view for level of magnification that does standard magnifiers.

5. Allow sufficient reading speed to make continuous text meaningful at high levels of magnification.

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6. Can be, easily adjusted for material of different sizes or for fluctuations in vision (Student Support Services, 2006:56).

Provide high illumination and contrast enhancement (Student Support Services, 2006). A closed circuit television (CCTV) allows students to view enlarged print on a television screen, giving them access to courses material (British Columbia Ministry of Education, 2008). Closed circuit television systems electronically enlarge printed, handwritten and graphic materials onto a monitor screen. The components include a camera with a zoom lens and light source, a monitor and flat movable counter. Portable and colour units are also available. Students with low vision find these systems useful (British Columbia Ministry of Education, 2008). The students can control the size, focus, brightness and contras and polarity of the display (Carney, Engbretson & Sheppard, 2003). One of the most useful devices for persons with low vision is the Closed Circuit Television (CCTV). This machine will magnify print from any source (books, papers, and letters) onto a TV screen. The user can adjust the size of the letters, ranging from just a little larger than normal to large enough to fill the screen with only one letter. The CCTVs are available from a number of sources. (Amir, 2008).

2.4.5 Computer terminals for the visually impaired

Jaws, open book, Zoom Text, or magic software is available on a computer at most library locations. The jaws and open book software can be used to access the internet, use MS Office product and, with the use of a scanner listen to printed material such as books or magazines. Zoom text and magic software allow a user to magnify the material on the computer screen up to 16 times its original size (Craig, Richard, & Laura, 2010). Magnification of text means that the size of the text has been changed

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either by increasing the font size, increasing the zoom, or using special screen magnification software. Magnification of the computer screen means that elements such as icons, menus, and dialogue box haven been enlarged either by customizing the operating system or by using screen magnification software (Ministry of Education, British Columbia, 2008).

2.4.6 Adaptive paper

Specialized paper with darkened lines, raised lines, or using colour can significantly improve the writing of student with low vision (Tebo, 2009: 5)

2.4.7 Slate and stylus

A slate and stylus can be equated to paper and pencil for individuals who are blind. This simple low tech tool allows students to quickly and efficiently complete simple tasks like creating labels or writing notes to themselves. The slate and stylus is not practical for longer writing tasks. (Tebo, 2009: 5). A slate and stylus enables students with vision impairment to produce work in Braille, allowing them to take notes.

2.4.8 Writing tools

Using bold felt-tip markers or soft lead pencils can provide greater contrast on paper, allowing students with low vision to read with greater ease (Tebo, 2009: 5). There are a number of writing aids available including large print or tactile address books, diaries, organizers and notebooks along with:

- Writing frames or simple rail line guides, available in various raised line or bold paper
- A range of thick felt tip pens. (Tebo, 2009: 5)

2.4.8 Video magnification/C.C.T.V

Writing with traditional paper and pencil under a video magnification camera allows the student to view their work in real time through the use of a large monitor (Tebo, 2009: 5). A video magnifier is a system that uses a video camera to project a magnified image of printed text, handwriting or photographs onto a video monitor or TV screen. Some video magnifier model (room viewing systems) has the capability to view the blackboard or materials posted on walls around the room. (British Columbia Ministry of Education, 2008, p.23).

2.4.10 Spectacle magnifiers

Sinclair and Ryan (2008) opined that, the best optical solution to the difficulties of the plus lens magnification is to mount them in spectacles. This gives the best magnification and greatest field of view. They can be used for reading, threading a needle or doing other close-up task (p.23).

2.4.11 Abacus

The abacus is a critical tool for early math development among students who are blind, but continues to be a practical tool for many students as they get older. It is used to teach early number concepts, operations and fractions, can be used in lieu of paper and pencil, and is a low tech substitute for a calculator (Agbeko, 2010). Nimmo (2008) citing student support services (2005) state that aids for accomplishing math tasks, such as Braille rulers, abacus and Braille protractors, help students to meet prescribed math learning goals.

2.4.12 Adaptive calculators

Adoptive calculators range from simple 5 functions, to scientific and graphic calculator. Built – in supports include large display and large Keys, tactile or Braille

Keys, Braille displays (which are very expensive) and talking calculators. In addition, some adaptive calculators are compatible with a computer or C.C.T.V for viewing on a large monitor (Tebo, 2000). Digital talking calculators are also available for both computers and mobile devices or are integrated into advanced math software (p.8).

2.4.13 Magnification

For students with low vision, handhold magnifiers, digital magnifiers, and C.C.T.Vs may be useful for viewing and manipulating objects, observing experiments, or viewing graphic information (Tebo, 2009: 9). Some individuals with low vision may require very little additional magnification to work effectively with the computer display others may require greater magnification. It is not uncommon for some persons with low vision to experience fluctuations in vision requiring frequent readjustments in text display size. To work effectively with information displayed on the computer screen; the large print adaptation must be capable of magnifying both text and graphics. As the trend in the computer industry is to develop ever more sophisticated combinations of high resolution graphics and text displays, this is a vital capability (Ministry of Education, British Columbia, 2008:15).

2.4.14 Adaptive hardware

Hardware such as enlarged, large print or high contrast keyboards, as well as enlarged monitors may provide adequate supports, to students with low vision, allowing them to use the computer independently (Tebo, 2009, p.5).

Resource personnel services

Resource personnel from the District level enhance educators" preparedness for teaching pupils with low vision. Resource personnel provide the full range of educational support services, such as professional development in curriculum

assessment to teachers and school-based support teams. When there is a need for more specialist advice and intervention, the district support teams (support professionals), which consist of a core of education support personnel, will be capable of offering support and advice (Engelbrecht & Green, 2001).The focus of the District support team would be to ensure preparedness of educators, with a particular focus on curriculum and institutional development, and to ensure that teaching and learning frame work and environment is responsive to the full range of learning (DNE,2001). According to Ocloo (2011), the integration of children with low vision in Ghana uses the itinerant teaching approach in the basic school system in only six districts out of the 170 Metropolitan, Municipal and District Assemblies. The itinerant support service is one of the service delivery and placement alternatives for children who are handicapped. It is an educational support service provided by itinerant teachers for children who are handicapped but receiving their education in the regular classroom. The itinerant teacher programme for the visually impaired conforms to rules and regulations for PL 94-142 of the United States of America regarding the Least Restrictive Environment and the Individualised Education Programme (IEP). This programme involves a collaborative effort of the classroom teachers and the special educators of children with visual impairment

School-Based support team

A school-based support team is an internal support team, which is co-ordinated by a member of the staff, preferably someone who has received training in either life skills education, counselling or learning support (remedial) (Eaton,1996 cited in Brew, (2011).

According to Brew (2011) citing the White Paper 6 of The Republic of South Africa (DNE, 2001), the primary function of the school-based support team would be to support the learning and teaching process by identifying and addressing learner, educator and institutional needs. This team is made up of learners, their parents, educators and representatives from the community, organizations, non-governmental organisations (NGO), neighbouring schools, educations institutions, and other indigenous support systems (Brew, 2011). Foreman (1996 cited in Brew, 2011) postulated that it is imperative school-based support teams become an integral part of the education system. The teams focus should be prevention, rehabilitation, social integration and equalization of opportunities. The school-based support team is not there to remove the „problem‟ learner from the classroom but acts as a support system to empower and prepare the educator to succeed within the bounds of the classroom. The purpose of this team is to support educators who are experiencing problems and are not adequately prepared to cope with special needs children in the inclusive classrooms (DNE, 2002).
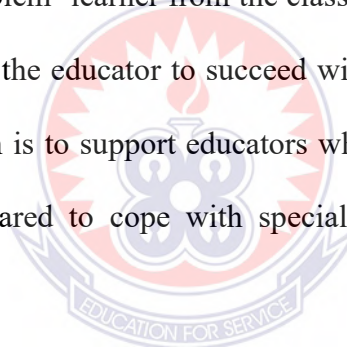
2.5 Challenges Teachers' Face in Teaching Pupils with Low Vision

2.5.1 Difficulties of teaching learners how to use low vision devices

Teachers face challenges of training learners to use low vision devices because learners break or lose the devices frequently. This fact poses major challenges to both teachers and learners because lack of low vision devices leads to low expectations from learners. Learners have been noted to come up with flimsy excuses of not having the devices. It behoves any teacher working with learners with low vision to come up with strategies of keeping low vision devices safely (Yalo et al., 2010, p.4). Example of having low vision devices to be stringed so that they can be kept hanged around learners‟ necks. It calls for teachers to be trained in the area low vision to understand

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the complexity or simplicity of visual task presented to learners with low vision. For each task presented, the teacher should understand the size of the object to be discriminated and the distinctive features for differentiation. Learners who experienced photophobia tended to shun bright light. Untrained teachers may have difficulties of advising learners to avoid areas within the classroom that have higher amount of illumination like sitting next to the window or open door. Such untrained teachers may not have skills of reading non–verbal cues from learners when they experienced disability glare from their environments of learning. (Yalo et al., 2010, p.4).

2.5.2 Lack of assistive technology

There are numerous assistive technology devices that can assist with severe disabilities, ranging from very simple to very complex. Kebeto (2015) citing Candido (2008) express the opinion that the current research shows that we have come long way in using technology and particularly the internet for education. As outlined above online classes continue to grow in number and variety. It is also true that technology has enhanced the lives of people with disabilities in a variety of ways. Kabeto (2015:36-37) opined that people with a disability such as a visual impairment can be served in effective ways by enrolling in online classes, yet online classes are not all designed in a way that `best suits this particular group of people.

2.5.3 Reading and writing difficulties

Kebeto (2015) states that, teaching a child with visual impairment requires an open heart and a tremendous capacity to empathize and communicate. You need various teaching techniques to teach the type of reading a disabled person must learn. Learning to read a book, for example, demands a different form of instruction than

learning math. Generally, visually impaired learners are able to read and use large print versions of textbooks. They cannot read normal size alphabets in the textbook or in a manual. Most learners with sight problem show excessive head movements while looking at pictures or reading. While reading and writing most of the time they lose place. They have a problem with writing in a straight line and they write in a zigzag manner.

Majority of learners with visual impairments will require slightly more time than other learners to perform certain task. For example, given their low vision, they may be unable to quickly find an item or the first line on a page. It will often take them longer to completely make out what they are seeing or understand what is being discussed, some learners with a visual impairment gain an overall image from fragments they perceive whereas sighted learners gain this insight „"at a glance"". In addition, they will often be required to use specialized equipment (telescope, magnifiers text enlarger), which is more time consuming (Savard, 2008: 5). Partially sighted learners normally write using the standard graphic code. Corrective eye wear or lenses can at times provide sufficient support. Reading printed characters is also made possible through optical instruments, such as a hand–held or eye—mounted telescope, magnifier and closed circuit television (CCTV) magnifiers. Wear it should be noted, however, that in most cases their pace of reading will be slower (Savard, 2008, p.5).

As for writing, learners with partial sight will occasionally use paper with large grid lines, markers and large – tipped pens. The posture required to read and write with partial sight may sometimes lead to physical discomfort. The use of a book holder (slanted stand) and supplementary lighting can be helpful (Kabeto, 2015). Learners

with low vision and cortical visual impairments may require change in the print size and type face. Some learners may use a combination of media–visual, tactile, audio or electronic (e–text) to enhance or Support the primary reading mode (Wiazowski, 2009). Bosmall, Gomple Vervined and Van Bon (2006) cited in Smith and Polloway (2008) indicate that even though learners with visual impairment learn similarly to their sighted peers their inability to process visual information efficiently results in their needing specific curricular and instructional modifications. For learners with low vision, these modifications may simply mean enlarging printed materials to sufficient size so that the student can see them. For learners with little vision the support must be more extensive.

Many materials found in general education classroom may pose difficulties for learners with vision problems. For example, the size and contrast of printed materials that have area effect on learners with visual problems. Special material and equipment can enhance the education of learners who have visual impairments. Some materials, for example, large printed materials are not appropriate for all and must be considered in light of individual needs (Smith & Polloway, 2008). Some learners with a visual impairment gain an overall image from fragments they perceive whereas sighted learners gain this insight „‟at a glance‟‟‟. In addition, they will often be required to use specialized equipment (telescope, magnifiers text enlarger), which is more time consuming. Partially sighted learners normally write using the standard graphic code. Corrective eye wear or lenses can at times provide sufficient support. Reading printed characters is also made possible through optical instruments, such as a hand–held or eye–wear–mounted telescope, magnifier and closed circuit television (CCTV) magnifiers. It should be noted, however, that in most cases, their pace of reading will be slower (Savard, 2008).

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2.5.4 Lack of understanding of vision impairment and the needs of the students

Most classroom teachers have had limited exposure to students with vision impairment (American Foundation for the Blind, 2005a cited in Nimmo, 2008) and do not fully understand the effects of vision loss, and hence do not know how to accommodate their needs, (Palmer, 2005). Hetlen (2002) state that, many educators generalize all disabilities and do not distinguish between different ones such as low vision or cerebral palsy. Hetlen (2002) and Lewis (2009) comment on the disservice that a one–size–fits–all education system does to students whose specific and individual needs may not be addressed.

2.5.5 Lack of time for the expanded core curriculum

Nimmo (2008) citing the American Foundation for the blind (2005a), Hatlen (2002) noted that there is often not enough time in the school day to effectively teach the expanded core curriculum. The American Foundation for the Blind (2005a) cited in Nimmo (2008) believes that the amount of time necessary for training in the expanded core curriculum makes it challenging for students with vision impairment to be fully included in the regular school system. They will either have to spend too much time out of the classroom, or they will not have enough expanded core curriculum training (American Foundation for the Blind, 2005a). If these students are concentrating the majority of their time learning the core curriculum, they are missing key components

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to training in the expanded curriculum (American Foundation for the Blind, 2005a cited in Nimmo, 2008).

The American Foundation for the Blind (2005a) believes that for students with vision impairment to have sufficient training in the needed areas of the expanded core curriculum, they should have access to a variety of educational program options, including pull – out time from regular class, special classes blind or attending a school for the blind for a determined period of time. However, Kiomoka (2014) concludes that these students should remain in the classroom as much as possible. He does not offer any solutions for them to learn the expanded core curriculum while remaining in the classroom. Bishop (2006) confirms that training in the expanded core curriculum is challenging due to time constraints, but insists that it is too important to ignore. Bishop, (2006) offers suggestions of Saturday school, summer classes, or after school training by the itinerant teacher as solutions for inadequate time for teaching the expanded core curriculum pupils with low vision.

2.5.6 Insufficient funding for specialized resources

The American Foundation for the Blind (2005a) states that in order to have equal access to the curriculum and to compete with their sighted peers, students with vision impairment require books in appropriate media, materials, equipment and technology. These specialized materials can be quite costly (American Foundation for the Blind, 2005a). Assistive technology for these students is very costly (Atlantic Provinces special education Authority, n. d. b). Unfortunately, there is often not enough funding to afford these required specialized resources (American Foundation for the Blind, 2005a).

2.5.7 <u>Lack of resources and poor participation of parents</u>

According to Mwakyeja (2015) citing Simon, Echeita, Sandoval and Lopez (2010) conducted a study in Spain with the aim of analysing the process of inclusion of students with visual impairments. The study found out that schools do not have appropriate teaching and learning resources to help students with visual impairments learn better in inclusive classrooms. Additionally, the study found that, there is a lack of collaboration and participation of parents in the educational affairs of their children. Moreover, the findings revealed that; teachers do not have enough knowledge of inclusion and how to teach students with visual impairments in inclusive classrooms.

2.5.7 <u>Teaching methods</u>

Lewis and Little (2007 cited in Mwakyeja, 2015) conducted a study with an intention of providing insight on the current situation of inclusive education in four countries, namely Nepal, Tanzania, Vietnam and Zambia. The findings of the study in Tanzania revealed that, teachers are not educated enough in sign language, use of braille materials, preparation of hearing and aids, tactile diagrams and maps etc. to be able to face the challenges of inclusive teaching. It was also found out that teacher education is insufficient in the components of low vision. Finally, the study revealed that rigid curriculum is also a problem for implementation of inclusive education. Teaching methods and examination systems are centrally controlled contradicting with the efforts to make inclusive environments for all children regardless of their learning differences. According to Hayford (2013), the basic school teachers were not empowered to adapt the national curriculum to suit all learners including those with disabilities or special educational needs, even though majority of the sighted pupils

interviewed reportedly stated that adaptations were done in the curriculum to suit pupils with visual impairments.

2.4.7 Lack of teacher collaboration and rigid curriculum

New Brunswick Association for Community Living (2007) conducted a study to provide insights on the systemic barriers to the implementation of inclusive education in New Brunswick. The study found lack of collaboration among teachers to teach children with low vision in inclusive classrooms. It was also observed that, rigid curriculum does not allow collaboration (co- teaching) among teachers.

2.6 Summary of Literature Review

The literature review has highlighted the views of teachers towards the teaching and learning of children with low vision, strategies teachers use in teaching children with low vision and resources available for teaching children with low vision as well as challenges teachers face in teaching children with low vision. Previous research has not adequately examined the views teachers have towards the teaching and learning of pupils with low vision in the schools. From the literature review, there has been no research that has investigated the perception of teachers towards the teaching and learning of pupils with low vision in Ghana. This research tended to examine the views teachers have towards the teaching and learning of pupils with low vision and the perception teachers have towards the teaching and learning of pupils with low vision.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes the procedures and the methods used to conduct the study. The chapter explains the research design, population, sample and sampling techniques as well as the instruments used to collect data. In addition, the validity and reliability issues have been discussed. The chapter also covered data collection and analysis procedures.

3.1 Research Design

This study was a survey and the researcher used the cross-sectional design. In cross-sectional studies, a cross section of the subjects of varying settings is sampled and studied at the same time (Davis, 2005). The characteristics of the subject at different locations are examined and analysed to reveal possible trends in the development of such characteristics. The cross-sectional studies provide a quick snapshot of what is going on with the variables of interest so the research employs the use of questionnaires, and interviews (oral or forms of questionnaire) in order to determine or ascertain the opinions, attitudes, preferences, and perception of the subjects.

The researcher adopted the cross-sectional survey design because, surveys are useful in describing the characteristics of a large population and consequently, making the results statically significant even when analysing multiple variables. Secondly, standardized questions make measurement more precise by enforcing uniformed definitions upon the participants. Also, surveys usually produce high reliability by presenting all subjects with a standardized stimulus, thus observer subjectivity is greatly eliminated. In addition, surveys are relatively inexpensive (especially self-

administered surveys). Nonetheless, the researcher was mindful of the weakness of cross-sectional studies such as the need for special skills in sampling, proper question design and analyses. Additionally, it may be difficult for participants to recall information or to tell the truth about a controversial question (Davis, 2005). The research design is based on the use of survey which examined the views of teachers towards the teaching and learning of children with low vision, strategies teachers use in teaching children with low vision, resources available in teaching children with low vision and challenges teachers face in teaching children with low vision.

3.2 Population

Population is a group of element or case, individuals or objects that conform to specific criteria (Creswell, 2012). The population of the study was made up of some selected Basic Schools in the Nkwanta South District. These schools were selected because there was a mandatory policy of inclusive education which means all schools must practice inclusive education. The population was 328 people. The target population for the study was 150 teachers.

3.3 Sample Size

In all, one hundred and fifty (150) participants were involved in the study. These comprises of ninety (90) male teachers and sixty female teachers.

Table 3.1: Breakdown of Sample size

School	Male	Female	No of Teachers
Abrewankwor D/A Basic School	9	4	13
Nkwnata E.P. Basic School	10	13	23
Nkwanta D/A Primary B & C	7	5	12
Nkwasec D/A J.H.S.	10	7	17
Dawa Akura D/A Basic School	9	4	13
Krontang Sabon D/A Basic School	5	9	14
Redeem D/A Basic School	10	5	15
Nkwanta D/A JHS „A"	12	8	20
Old Agou D/A Basic School	10	1	11
Kabitime D/A Basic School	8	4	12
Total	**90**	**60**	**150**

Source: researcher's field work (2017).

3.4 Sample and Sampling technique

The probability sampling technique involving simple random sampling techniques was adopted in selecting the schools involved. Sampling in quantitative research according to Gay, Mills and Airasian (2009), is a process of selecting a small number of individual for study in such a way that the individual chosen will be key informant. Thus, in depth, not to generalize representativeness is secondary to the participant's ability to provide the desired information. In the study, the simple random sampling technique was adopted because the professionally trained teachers represented the range of potential participant in the study setting, and as Gay et al have noted, if a researcher is interested in a phenomenon, he or she can choose to participate based on their knowledge or experience. In all, one hundred and fifty (150) teachers were selected using simple random sampling technique.

3.5 Instruments

The instruments used for the study: Questionnaire

Questionnaire

For the purpose of this survey, the researcher used a close ended type of questionnaire which is simple device for the respondents to provide free and honest answers. Avoke (2005) postulated that questionnaires are instruments that are designed to collect data for decision making in research. Therefore, for very good reasons, the researcher chose the questionnaire being the most widely used techniques for obtaining information from teachers of Nkwanta South District. It is relatively economical, has the same questions for all respondents that could ensure anonymity and contains questions like what the researcher is investigating into.

3.6 Validity and Reliability of the instrument

The validity and reliability of any research project depends to a large extent on the appropriateness of the instrument or test used to measure the variables (Alhassan, 2006). Validity and reliability are concepts in research that ensure the quality of study. Validity refers to a process whereby the researcher earns the confidence of the reader that he or she "has got it right" (Leavy & Biber, 2011). In other words, validity considers what it intends to investigate. This is to explain if the findings are meaningful, relevant, and true to the research questions (Gall, Gall & Borg, 2007).

Reliability, on the other hand, is defined as the consistency of a data collection tool in obtaining the same answers when the research is repeatedly done (Gall, Gall & Borg, 2007). Others explain that the goal of reliability is to minimize error and bias in a study focuses on the issue of reliability in individuals or events within a field setting. In effect whatever procedure one uses to collect data, must be critically examined to

check the extent to which it is likely to be reliable and valid. Validation is the attempt to ensure that the research instruments one uses are unquestionable and undisputable. The reliability of a research instrument is the consistency of the instrument producing similar results given the same testing conditions on different occasions (Agyedu, Donkor, & Obeng, 2007). According to Hackman (2002), reliability is the extent to which data is consistent, accurate and precise. He argued that with the content of measurement theory, reliability is concerned with the measurement techniques measure the concept of interest to the researcher.

To assess the validity of the questionnaire, expert judgment method was applied. So, the developed questionnaire, along with explanations regarding terms and concepts were presented to two lecturers for assessment. As such, they were asked to express their views about its construct, content, formal appearance and writing model. Many inputs were given by them that were included while finalizing the questionnaire. It was also noticed that some of the questions needed revision along with some additions and deletions. The necessary amendments were then made and its content and construct validity were assured and finally confirmed by other experts.

2.7 Pre-testing

To ensure the reliability and validity of the questionnaire instrument, the researcher conducted a pre-test. This testing allowed for the detection of inherent problems, inconsistencies and ambiguities in the instrument to be used for the study and for corrections to inconsistencies to be undertaken before carrying out the actual study. Befring (2004), it is necessary to pre-test all the questionnaire and procedures that are to be used in the research. Researcher must practice the tools for data collection that they will use in carrying out their studies before conducting the actual research to help

them be acquainted with these tools before conducting the research also themselves as researchers (Drew, Hardman & Hosp, 2008).

The pre-test also helps the researcher to review and to restructure the tools for data collection in order to obtain information that focuses on the research questions and to develop a deeper understanding of the situation to be studied. The sample pre-test was a group of 10 teachers from ten basic schools in Nkwanta South District where the teachers share similar characteristics with the study area. Some of the characteristics were gender, age, length of services, academic and professional background and ranks in the Ghana Education Service.

3.8 Procedure for Data Collection

To gain access to the selected schools, the researcher paid personal visits to the school to acquaint himself with the teachers and presented an introductory letter obtained from the Head of special Education Department of the University of Education, Winneba confirming the topic and the area of study. The purpose of the researcher visit was to acquaint himself with the respondent and to solicit their views for the research.

The researcher organized a thirty-minute meeting in each of the schools to explain the purpose of the study to teachers and to let them see the need to respond to the questionnaire promptly. The questionnaires were given by the researcher to participants in their various schools within a week to be completed within two weeks. They were to complete at their own convenience. To ensure a good return rate, the researcher selected lead teachers in the various schools to collect all completed questionnaires. After two weeks the researcher visited the schools and retrieved the completed questionnaire from the lead teachers.

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3.9 Data analysis

Data analysis is the practice of extracting useful information from raw data. Data analysis is the process of organizing the data collected for example into categories (Kothani, 2008). Data analysis is important for interpreting these raw data, in order to obtain the meaning and pattern from data (Bell, 2005). A tally was done to find out the number of respondents to each item. In addition, all the responses were coded with scores to make them possible for computation. The data were analysed using the frequencies for percentages that responded to each item and description statistics were used in the final analysis of the data. Furthermore, in the discussions, the responses to strongly Agree (S A) and Agree (A) on the scale were combined and strongly Disagree (S D) and Disagree (D) were also combined to have the same idea.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSIONS

4.0 Introduction

This chapter provides the analysis and discussion of the findings of the study. It has two main sections; the first section provides the analysis of the data, whereas the second part presents the discussions of the findings. The questionnaire was structured with responses in the likert scale format. The respondents were asked to indicate their degree of agreement by checking one of five responses categories. The following example shows how the likert scale was used in this study. Strongly Agree (SA), Agree (A), Strongly Disagree (D) and Neutral (N). In analysing the data however, responses comprising strongly agree and disagree were combined to refer to "agree" while disagree and strongly disagree were also combined to refer to "disagree".

4.1 Demographic Characteristics of teachers

One item of the questionnaire gathered data on the respondents (teachers) gender which is presented in the table below.

Table 1: Sex Distribution of teachers

Sex	(F)	(%)
Male	90	60.0
Female	60	40.0
Total	**150**	**100**

Source: Field Survey (2017)

The sex distribution of respondents show that majority of respondents were males as males represented as 90 (60.0%) and 60 (40.0%) were females. The implication is that, male teachers outnumbered female teachers. Another aspect of the questionnaire gathered data on the age distribution of respondents and this is what Table 2 presents.

Table 2: Age of teachers

Age Range	(F)	(%)
18-23yrs	-	-
24-29yrs	10	6.67
30-34yrs	30	20.0
41-45yrs	80	53.33
46-50yrs	20	13.33
51-55yrs	5	3.33
56-60	5	3.33
Total	**150**	**100**

Source: Field Survey (2017)

The results from Table 2 shows that majority of respondents were between the age group 41-45 representing 80 (53.33%), followed by those between the age group of 30-34 representing 30 (20.0%), followed by those between the age group 46-50 representing 20 (13.33%), followed by those between the age group 24-29 representing 10 (6.67%), followed by the age group 51-55 and 56-60 representing 5 (3.33%) respectively The implication is that, majority of the teachers in Nkwanta South District of the Volta Region, Ghana were older form 30 years.

Table 3: Teaching experience of Respondents

	Teaching experience	
Range of Years	**Frequency**	**Percentage**
1 month - 2yrs	-	-
2yrs - 3yrs	2	1.33%
4yrs - 5yrs	8	5.33%
Above 5yrs	140	93.33%
Total	**150**	**100%**

Source: Field Survey (2017)

From Table 3, the most opted number of years of teaching experience was above 5 years. 93.33% of the teachers had teaching experiences above five years, 5.33% for 4 - 5 years and 1.33% for the 2-3 years of teaching. It can be assumed that, all the

teachers have adequate work experience and can provide reliable information for the study.

Table 4: Highest Level of Education Attained (Teachers)

Response	Frequency	Percent
Diploma	110	73.33%
First Degree	40	26.67%
Masters	-	-
Total	**150**	**100.0**

Source: Field Survey (2017)

Table 4 shows that 110 (73.33%) of the respondents had a diploma certificate with the remaining 40 (26.67%) having a first degree. A deduction from the above is that majority of the respondents are diploma holders teaching at the basic schools Nkwanta South District of the Volta Region, Ghana.

4.2 Analysis of data

The analyses of the items are based on the four research questions which are as follows:

- What are the views of teachers towards the teaching and learning of pupils with low vision in the Nkwanta South District?

- What are the strategies teachers use to teach pupils with low vision in the Nkwanta South District

- What are the resources available for teaching pupils with low vision in the Nkwanta South District?

- What challenges do teachers face in teaching pupils with low vision in the Nkwanta South District?

4.2.1 Research Question One: What are the views of teachers towards the

teaching and learning of pupils with low vision in Nkwanta South District?

The first research question sought to find out the views of teachers towards the teaching and learning of pupils with low vision in the Nkwanta South District. The responses are presented in table 5 below:

Table 5: Views of teachers towards the teaching and learning of pupils with low vision

Factors	SA	A	D	SD	F	%
1. I have the professional skills to teach pupils with low vision.	20 (13.33%)	20 (13.33%)	100 (66.67%)	10 (6.67%)	150	100%
2. I have a belief that pupils with low vision can learn equally like the able ones	60 (40.0%)	70 (46.67%)	10 (6.67%)	10 (6.67%)	150	100%
3. I am highly motivated teaching pupils with low vision	10 (6.67%)	10 (6.67%)	70 (46.67%)	60 (40.0%)	150	100%
4. I have adequate resources for teaching pupils with low vision.	5 (3.33%)	5 (3.33%)	100 (66.67%)	40 (40.0%)	150	100%
5. I offer counseling to pupils with low vision in my school.	-	5 (3.33%)	95 (63.33%)	50 (33.33%)	150	100%
6. I use the most appropriate method of teaching that meet the understanding level of pupils with low vision	-	-	80 (53.33%)	70 (46.67%)	150	100%

Source: Field Survey (2017)

Table 5 shows the frequency distribution of teachers" responses to questionnaire items 1-6. With regards to item 1, that was to find out from teachers whether teachers have the professional skills to teach pupils with low vision, a total of 110 (73.34%) of the respondents disagreed with the statement while 40 (26.66%) agreed with the

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statement. This is an indication that quite a number of teachers believe they have no professional qualification to teach children with low vision.

Regarding item 2, that was to find out whether teachers belief that pupils with low vision can learn equally like the able ones, a total of 130 (86.67%) of the teachers agreed with the statement while 20 (13.34%) however disagreed. This is an indication that quite a number of teachers have positive views that pupils with low vision can learn equally like the able ones.

With regards to item 3, that was to find out whether teachers are highly motivated teaching pupils with low vision, a total of 130 (86.67%) of teachers disagreed. It was only 20 (13.34%) of the teachers who agree with the item.

The fourth item was to find out whether teachers have adequate resources for teaching pupils with low vision. A great number of respondents 140 (86.67%) disagreed with the statement while 10 (6.66%) agreed with the statement.

As regards item 5 that sought to find out whether teachers offer counselling to pupils with low vision, while 5 (3.33) of the teachers agreed, 140 (96.66) disagreed with the statement.

Regarding item 6 which sought to find out whether teachers use the most appropriate method of teaching that meet the understanding level of pupils with low vision, a total of 150 disagreed with the statement.

4.2.2 Research Question Two: What strategies do teachers use to teach pupils with low vision in Nkwanta South District?

The second research question sought to find out the strategies teachers use to teach pupils with low vision in the Nkwanta South District. The responses are presented in table 6 below:

Table 6: Strategies teachers use to teach pupils with low vision

Factors	SA	A	D	SD	F	%
7. I verbalize everything I write on the chalkboard for my pupils.	10 (6.7 %)	100 (66.67%)	20 (13.33%)	20 (13.33%)	150	100%
8. I assign independent work in consistent manner to pupils with low vision	60 (40.0%)	70 (46.67%)	10 (6.67%)	10 (6.67%)	150	100%
9. I write boldly on the chalkboard.	60 (40.0%)	60 (40.0%)	20 (13.33%)	10 (6.67%)	150	100%
10. I use concrete objects as teaching and learning materials for teaching pupils with low vision.	5 (3.33%)	5 (3.33%)	100 (66.67%)	40 (26.67%)	150	100%
11. I give extra time to pupils with low vision to complete their activities/assignments.	60 (40.0%)	80 (53.33%)	5 (3.33%)	5 (5.33%)	150	100%
12. I provide individualized instruction to pupils with low vision	125 (83.33%)		20 (13.33%)	5 (3.33%)	150	100%
13. I present TLMs on contrasting background	-	-	100 (66.67%)	50 (13.33%)	150	100%

Source: Field Survey (2017)

With regards to item 7, that was to find out whether teachers verbalize everything they wrote on the chalkboard for pupils with low vision, 110(73.33%) of the teachers agreed. It was only 40 (26.66%) of the teachers who disagreed with the item.

Regarding item 8 that was focused on finding out whether teachers assign independent work in consistent manner to pupils with low vision, a total of 130

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(86.67%) of the teachers agreed that teachers did assign independent work in consistent manner to pupils with low vision, whiles 20 (13.34%) of the respondents disagreed that they assign independent work in consistent manner to pupils with low vision.

With regards to item 9, that was to find out whether teachers write boldly on the chalkboard, 120 (80.0%) of the teachers" responses were in favour indicating that teachers wrote boldly on the chalkboard. It was only 30 (20.0%) of the respondents who disagreed.

For item 10, the question as to whether teachers use concrete objects as teaching and learning materials for teaching pupils with low vision, 10 (6.66%) of the respondents indicated they did while 140 (93.34%) respondents indicated that they did not.

With regards to item 11, 140 (93.34%) of the respondents agreed that teachers gave extra time to pupils with low vision to complete their activities/assignments whereas 10 (6.66%) respondents disagreed.

Regarding item 12, the data indicates that, majority of teachers did provide individualized instruction to pupils with low vision. For instance, 145 (96.66%) of the respondents agreed that they provide individualize instruction to pupils with low vision whiles 5 (3.33%) of the respondents disagreed.

With regards to item 13, that was to find out from teachers whether they present teaching and learning materials (TLMs) on contrasting background. The data shows that 150 (100%) of the respondent disagreed that they present teaching and learning materials on contrasting background to reflect individual needs.

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4.2.3 Research Question Three: What are the resources available for teaching pupils with low vision in Nkwanta South District?

The third research question sought to find out the resources available for teaching pupils with low vision in the Nkwanta South District. The responses are presented in table 7 below:

Table 7: Resources available for teaching pupils with low vision

Factors	SA	A	D	SD	F	%
14. Assistive devices in the form of magnifying lenses provided in the school are in large quantities	20 (13.33%)	60 (40.0%)	50 (33.33%)	20 (13.33%)	150	100%
15. I have resource personnel support available in teaching pupils with low vision.	60 (40.0%)	70 (46.67%)	10 (6.67%)	10 (6.67%)	150	100%
16. I have adequate writing materials such as dark lined books for the pupils with low vision.	-	-	150 (100.0%)	-	150	100%
17. I have a resource room for pupils with low vision.	30 (20.0%)	55 (36.66%)	30 (20.0%)	35 (23.33%)	150	100%
18. I have adequate braille version of reading materials for pupils with low vision	-	-	150 (100.0%)	-	150	100%
19. I have special materials and vision aids such as tactile objects, tactile maps, tactile gloves, creamer abacus and braille rulers to teach pupils with low vision	-	-	150 (100.0%)	-	150	100%
20. I have closed circuit television (CCTV) which allows pupils to view enlarged print on a television screen, giving them access to course materials.	-	-	80 (53.33%)	70 (46.67%)	150	100%
21. I have school-based support team available for teaching pupils with low vision.	30 (20.0%)	50 (33.33%)	40 (26.66%)	30 (33.33%)	150	100%

Source: Field Survey (2017)

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Table 7 shows teachers" responses to item14-21. For item 14, a total of 80 (53.33%) of the teachers agreed with the statement indicating that assistive devices in the form of magnifying lenses provided in the school were in large quantities to support teaching and learning in the school whereas 70 (46.66%) of the respondents disagreed.

With regards to item 15, 130 (86.67%) of the teachers agreed that resource personnel support was available in teaching pupils with low vision while 20 (13.34%) of the respondents disagreed.

The lack of resources has reflected on other responses they gave to other item. For example, item16, that focused on finding whether adequate writing materials such as dark lined books for the pupils with low vision were available, a total of 150 (100%) of the teachers disagreed that they have writing materials.

Regarding item 17, the question was to find out whether teachers have resource rooms for pupils with low vision, 85 (56.66%) of the respondents greed indicating that there was resource room for pupils with low vision whiles 65 (43.33%) disagreed.

As regards item18, in terms of whether teachers have adequate version of braille materials for pupils with low vision, 150 (100%) of the teachers disagreed that they have braille version of reading materials for pupil with low vision.

With regards to item19, in terms of whether teachers have a special materials and vision aids such as tactile objects, tactile maps, tactile gloves, creamer abacus and braille rulers to teach pupils with low were available, 150 (100%) of the teachers indicated that they have no such materials. One hundred and fifty percent of respondent in the schools also indicated they have no special materials and vision aids

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such as tactile objects, tactile maps, tactile gloves, creamer abacus and braille version rulers to teach pupils with low vision.

Regarding item 20, that was to find out whether teachers have closed circuit television (CCTV) which allows pupils to view enlarged print on a television screen, giving them access to course materials,150 (100%) of the teachers disagreed that they have circuit television in their schools.

For item 21, the question as to whether the school-based team support was available for teaching pupils with low vision, 80 (53.33%)of the respondents indicated that they have school based support team available for teaching pupils with low vision while 70 (46.66%) of teachers indicated that they did not.

4.2.4 Research Question Four: What are the challenges teachers faces in teaching pupils with low vision in Nkwanta South District?

The fourth research question sought to find out the challenges teachers face in teaching children with low vision in the Nkwanta South District. The responses are presented in table 8 below

Table 8: Challenges teachers face in teaching pupils with low vision

Factors	Strongly Agree	Agree	Disagree	Strongly Disagree	F	%
22. I can adapt the curriculum to suit the needs of pupils with low vision	10 (6.67%)	10 (6.67%)	100 (66.67%)	30 (20.0%)	150	100%
23. I can assist pupils with low vision to read and write in braille	3 (2.0%)	2 (1.33%)	95 (63.33%)	50 (33.33%)	150	100%
24. I can assist low vision pupils to use assistive devices such as magnifying lenses and telescopes	5 (3.33)	5 (3.33)	100 (66.67%)	30 (20.0%)	150	100%
25. I collaborate effectively with other professionals to support pupils with low vision in classroom	1 (0.67%)	2 (1.33%)	97 (65.0%)	50 (33.33%)	150	100%
26. I have requisite skills in teaching pupils with low vision	-	-	150 (100.0%)	-	150	100%
27. I can improvise teaching and learning materials for pupils with low vision	2 (1.33%)	2 (1.33%)	96 (64.0%)	50 (33.33%)	150	100%

Source: Field Survey (2017)

Table 8 shows the responses of teachers to questionnaire item 22-27. For item 22, that was to explore the opinions of teachers on whether they can adapt curriculum to suit the needs of pupils with low vision, 130 (86.67%) of the teachers disagreed with the statement indicating that teachers could not adapt the curriculum to suit the needs of pupils with low vision, whiles 20 (13.34%) of the respondents agreed they could adapt the curriculum. As regards item 23, 145 (96.66 %) of the respondents disagreed that they can assist pupils with low vision to read and write in braille, whiles 5 (3.33%) of the respondents agreed.

With regards to item 24, that sampled views from teachers on whether they can assist pupils with low vision to use assistive devices such as magnifying lenses and telescopes, 130 (86.67%) of the teachers disagree that they could assist pupils with low vision to use assistive devices whereas 10 (6.66%) of the teachers agreed.

For item 25, 147 (98.0%) respondents disagree that they collaborate effectively with other professionals to support pupils with low vision in classroom whiles 3 (2.0%) agree that they collaborate effectively with other professionals to support pupils with low vision in classroom.

With regards to item 26, that was to find out whether teachers did have requisite skills in teaching pupils with low vision, 150 (100%) of the teachers disagreed that they have the requisite skills in teaching pupils with low vision.

Finally, for item 27, 146 (97.33%) respondents disagree that they could improvise teaching and learning materials for pupils with low vision whiles 4 (2.67%) agree that they could improvise teaching and learning materials for pupils with low vision.

4.3 Discussion of findings

This section provides the discussion of the findings of the study. In addition, the research questions that were raised to guide the study have been addressed.

1. **What are the views of teachers towards the teaching and learning of pupils with low vision in Nkwanta South District?**

The findings revealed the views teachers have towards the teaching and learning of pupils with low vision. Majority of the teachers had a view that they were not adequately prepared to teach pupils with low vision. This could mean that they lack special teaching skills and techniques in teaching pupils with low vision.   For

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instance, 110 (73.34%) of the respondents disagreed that they have professional skills to teach pupils with low vision. This is consistent with a study conducted by Kuyini and Desai (2007) who reported that teachers admitted they needed more training in the field of educating children with visual impairments in order to accommodate and teach children with low vision. Teachers expressed concern that school inspectors did not know enough about visual impairments in the inclusive education concept and need to be trained as well so collaboratively they could implement the inclusive education policy.

Similarly, the findings showed that teachers were not motivated to teach pupils with low vision. For example, 130 (86.67) of the respondents disagreed that they were highly motivated to teach pupils with low vision. Cook (2001) stated that teachers do not want to work with students with hidden disabilities and those with behavioural problems but are willing to teach those students with obvious disabilities. Ocloo and subbey (2008) explain, in addition, that most of the head teachers reject the admission of learners with visual impairment into their schools for the reason that such learners with disabilities will lower the academic standard of the school. Moreover, most teachers refuse the placement of the disable in their classes with the notion that this may be unrewarding and burdensome.

Further findings from the study revealed that teachers did not have adequate resources for teaching pupils with low vision. For example, 140(86.67) of the teachers disagreed that they have adequate resources for teaching pupils with low vision. Mwakyeja (2015) citing Simon et al., (2010) conducted a study in Spain with the aim of analysing the process of inclusion of students with visual impairments. The study found out that schools did not have appropriate teaching and learning resources to

help students with visual impairments learn better in inclusive classrooms. Ocloo (2011) citing Ocloo (1994) observed that most teachers in the schools for the blind in Ghana ignore the use of the chalkboard in their classroom, forgetting of the presence of pupils with limited vision

The findings also showed that teachers did not use the most appropriate methods of teaching that would meet the understanding level of pupils with low vision. For instance, 150 (100%) of the respondents disagreed that they used most appropriate method of teaching pupils with low vision. Mugambi (2011) opined that it is a challenge for teachers of students with low vision who require instructional methods that differ dramatically from regular programme. Critics assert that it is not possible to deliver effectively two or more very different instructional methods in the same classroom. As a result, the educational progress of students who depend on different instructional methods often falls even further behind their peers without disabilities (Mugambi, 2011). Lewis and Little (2007) cited in Mwakyeja, (2015) conducted a study with an intention of providing insight on the current situation of inclusive education in four countries, namely Nepal, Tanzania, Vietnam and Zambia. The findings of the study in Tanzania revealed that, teachers were not educated enough in low vision, sign language, use of braille materials, preparation of hearing aids, tactile diagrams and maps to be able to face the challenges of inclusive teaching. It was also found out that teacher education is insufficient in the components of low vision. Finally, the study revealed that rigid curriculum is also a problem for implementation of inclusive education. Teaching methods and examination systems are centrally controlled contradicting with the efforts to make inclusive environments for all children regardless of their learning differences.

2. **What strategies do teachers use to teach pupils with low vision in Nkwanta South District?**

The findings revealed various strategies teachers use in teaching pupils with low vision. Majority of the teachers agreed that they verbalized everything they wrote on the chalkboard for pupils. For instance, 110 (73.34) of the respondents agreed that they verbalized everything they wrote on the chalkboard for pupils with low vision. This is in consistence with Gadagbui (2013) who posited that teachers should verbalize whatever they write on blackboard, especially, in a mainstream or in special school. Call their attention to "see" what they should see and "Look" at what they should look at. This is because 90% of pupils with visual impairment have useful residual vision for which they can see to an appreciable extent (p.74).

Similarly, the findings showed that teachers wrote boldly on the chalkboard. For example, 120 (80.0%) of the respondents agreed writing boldly on the chalkboard. In writing words on the chalkboard for instance, the teacher should write boldly and spell out the letters that constitute the words. This will facilitate learning in children with low vision (Ocloo, 2011). Moreover, the findings revealed that teachers assign independent work in consistent manner to pupils with low vision. Example, 130(86.67) of teachers indicated that they assign independent work in consistent manner to pupils with low vision. The result of this is consistent to the study by Ocloo (2011) citing Baine (1991) who asserted that children with low vision like their normal sighted counterparts need to grow to lead independent lives. It is necessary to train them towards the achievement of independence. In order to build confidence in their capabilities teachers should learn to assign independent work to children in this category.

Further findings revealed that teachers gave extra time to pupils with low vision to complete their activities /assignment. For example, 140 (93.33) of the respondents agreed that teachers gave extra time to pupils with low vision to complete their activities/assignments. Students with visual impairment complete their work very slowly due to the nature of their impairment (Mastropaieri & Scruggs, 2010). Therefore, extra time allowance is extremely important for them to process visual information, and complete their written assignments (Salisbury, 2008).

The findings also showed that teachers provided individualized instruction to pupils. For instance, 145 (96.66%) of the respondents agreed that they provided individualized instruction to pupils. According to Gadagbui (2013) teachers should know the child"s age of onset of problem since he/she may have some visual memory or when born with it, he/she may not. Teacher should start from simple to complex; concrete to abstract and from known to the unknown. Teacher is to use the chalkboard and explains whatever he/she is teaching. When giving demonstration of a dark coloured object, it should be done in front of a light coloured background and use a rich verbal description of each task. Low vision children must wear spectacles to fit properly on their nose. They must be taught how to keep it clean (Gadagbui, 2013,p.74).

3. **What are the resources available for teaching pupils with low vision in Nkwanta South District?**

The findings of the study revealed the resources available for teaching pupils with low vision. Assistive devices in the form of magnifying lenses were identified as the resources provided in large quantities. For instance, 80 (53.33%) of the respondents agreed they had assistive devices in the form of magnifying lenses provided in their

schools. Yalo et al. (2010) citing Corn and Koenig (1996) stipulated that, the teachers must be in a position to help learners to incorporate the use of low vision devices into every day learning and leisure activities by selecting low vision devices that are portable and therefore readily available when learners need them. Corn and Koenig (1996) cited in Yalo, et al. (2010) stated that, each learner can become efficient at visual functioning if provided with appropriate optical and non – optical low vision devices that are task specific. Teachers need to understand learners‟ idiosyncratic visual needs at hand. For example, teachers must have skills of selecting devices for near and distance tasks so that learners can be trained on how to make use of them.

Besides that, the findings revealed that resource personnel were available in the school. For instance, 130 (86.67%) of the teachers agreed that they had resource personnel available for teaching pupils with low vision. Resource personnel from the District level enhance educators‟ preparedness for teaching pupils with low vision. Resource personnel provide the full range of educational support services, such as professional development in curriculum assessment to teachers and school-based support teams. When there is a need for more specialist advice and intervention, the district support teams (support professionals), which consist of a core of education support personnel, will be capable of offering support and advice (Engelbrecht & Green, 2001). The focus of the District support team would be to ensure preparedness of educators, with a particular focus on curriculum and institutional development, and to ensure that teaching and learning frame work and environment is responsive to the full range of learning (DNE, 2001).

Moreover, school-based support team was available in the schools in the District. For example, 80 (53.33%) of the respondents agreed they have school-based support team available for teaching pupils with low vision. A school-based support team is an internal support team, which is co-ordinated by a member of the staff, preferably someone who has received training in either life skills education, counselling or learning support (remedial) (Eaton, 1996 cited in Brew, 2011). According to Brew (2011) citing the White Paper 6 of The Republic of South Africa (DNE, 2001), the primary function of the school-based support team would be to support the learning and teaching process by identifying and addressing learner, educator and institutional needs. The school-based support team is not there to remove the „problem‟ learner from the classroom but acts as a support system to empower and prepare the educator to succeed within the bounds of the classroom. The purpose of this team is to support educators who are experiencing problems and are not adequately prepared to cope with special needs children in the inclusive classrooms (DNE, 2002).

4. **What are the challenges teachers' faces in teaching pupils with low vision in Nkwanta South District?**

The findings from the study revealed various challenges teachers face in teaching pupils with low vision. Adapting the curriculum to suit the needs of pupils with low vision was identified as a challenge to teachers. For instance, 130 (86.67%) of the respondents indicated they could not adapt curriculum. According to Hayford (2013), the basic school teachers were not empowered to adapt the national curriculum to suit all learners including those with disabilities or special educational needs, even though majority of the sighted pupils interviewed reportedly stated that adaptations were done in the curriculum to suit pupils with visual impairments. Kabeto (2015) asserted

that teachers lack skills to adapt the curriculum to suit the needs of pupils with low vision.

More so, the findings showed that teachers could not assist pupils with low vision to read and write in braille. For instance, 145 (96.66%) of the respondents disagreed indicating that they could not assist pupils with low vision to read and write in braille. According to Kabeto (2015) lack of assistance to pupils with low vision to read and write in braille, difficulty to assist pupils with low vision to use assistive devices such as magnifying lenses and telescopes and lack of provision of teaching and learning materials for pupils with low vision by teachers has resulted a big challenge to pupils with low vision to be in inclusive education.

Moreover, the findings revealed that teachers could not assist pupils with low vision to use assistive devices such as magnifying lenses. For example, 130 (86.67%) of the teachers disagreed they could not assist pupils with low vision to use assistive devices such as magnifying lenses and telescopes. The above results is also, consistent with a study by Yalo et al. (2010) who asserted that teachers face challenges of training learners to use low vision devices because learners break or lose the devices frequently. This fact poses major challenges to both teachers and learners because lack of low vision devices leads to low expectations from learners.

Additionally, the findings showed that requisite skills in teaching pupils with low vision were a challenge to teachers. For instance, 150 (100%) of the respondents disagreed that they have requisite skills in teaching pupils with low vision. This is in consistence with Kebeto (2015) who stated that teachers need various teaching techniques to teach the type of reading a disabled person must learn. Learning to read a book, for example, demands a different form of instruction than learning math.

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Generally, visually impaired learners are able to read and use large print versions of textbooks. They cannot read normal size alphabets in the textbook or in a manual. Lewis and Little (2007 cited in Mwakyeja, 2015) opined that teacher education is insufficient in the components of low vision. Mugambi (2011) opined that it is a challenge for teachers of students with low vision who require instructional methods that differ dramatically from regular programme. Critics assert that it is not possible to deliver effectively two or more very different instructional methods in the same classroom. As a result, the educational progress of students who depend on different instructional methods often falls even further behind their peers without disabilities (Mugambi, 2011).

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND

RECOMMENDATIONS

5.0 Introduction

This chapter deals with the summary of the research findings, conclusions, recommendations, suggestions and the way forward based on the findings. It is the final chapter which provides a brief overview of the study and shows how the research questions and objectives set out in chapter one have been answered. It also discusses the recommendations for practice and new areas for further research.

5.1 Summary of the Study

The purpose of the study was to find out the opinions teachers have towards the teaching and learning of children with low vision in Nkwanta South District of the Volta Region, Ghana.

Four research questions were set out to guide the study

- What are the views of teachers towards the teaching and learning of pupils with low vision in the Nkwanta South District?

- What are the strategies teachers use to teach pupils with low vision in the Nkwanta South District?

- What are the resources available for teaching pupils with low vision in the Nkwanta South District?

- What are the challenges teachers" faces in teaching pupils with low vision in the Nkwanta South District?

5.2 Key findings of the study

In terms of the views of teachers towards the teaching and learning of pupils with low vision, the findings indicated that teachers did not have the professional skills to teach pupils with low vision. Besides that, teachers did not have adequate resources to teach pupils with low vision. Also, teachers did not use the appropriate methods of teaching pupils with low vision.

With respect to the strategies teachers used to teach pupils with low vision, the study revealed that teachers verbalized everything they wrote on the chalkboard for the pupils. In addition, teachers wrote boldly on the chalkboard. Moreover, teachers gave extra time to pupils with low vision to complete activities/assignments.

In terms of the resources available for teaching pupils with low vision, the findings revealed that there was resource personnel support available. Assistive devices in the form of magnifying lenses were also provided in large quantities. There was school-based support team available for teaching pupils with low vision.

In terms of challenges teachers faced in teaching pupils with low vision, the study revealed that teachers were not able to adapt the curriculum to suit the needs of pupils with low vision. Additionally, teachers could not assist pupils with low vision to read and write in braille. Also, teachers were not collaborating effectively with other professionals to support pupils with low vision in the classroom. Moreover, teachers were not able to assist pupils with low vision to use assistive devices such as magnifying lenses and telescopes.

5.3 Conclusions

Furthermore, finding on the challenges teachers face in teaching pupils with low vision revealed that, teachers could not adapt the curriculum to suit the needs of pupils with low vision. Also they could not assist pupils with low vision to read and in braille. Besides that, teachers could not assist pupils with low vision to use assistive devices like magnifying lenses and telescopes. Additionally, teachers were not collaborating effectively with other professionals to support pupils with low vision and could not improvise teaching and learning materials for pupils with low vision.

5.4 Recommendations

The following recommendations based on the findings of this study were:

- Ghana Education Service should organize frequent in-service training for teachers in the regular schools to update their professional skills in teaching pupils with low vision.

- Government, NGOs, and benevolent individuals should provide adequate resources such as dark lined book, braille version of reading materials for teachers teaching pupils with low vision.

- Teachers should be taught the most appropriate method of teaching pupils with low vision by the teacher training institutions

- Large prints should be made available for the children with low vision.

5.5 Suggestion for further study

Since this study was limited to only basic schools in Nkwanta South District in the Volta Region of Ghana, a further study will be necessary to cover other schools within other districts of the Volta Region of Ghana so as to establish a holistic trend regarding the opinions teachers have towards the teaching and learning of children with low vision.

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APPENDIX A

QUESTIONNAIRE FOR TEACHERS

Dear Sir/Madam,

I am currently conducting research on: **Perception of Teachers towards the Teaching and Learning of Pupils with Low Vision in Nkwanta South District, Volta Region.** I will be very grateful if you can spare your precious time to respond to this questionnaire in order to contribute to this important process. Your identity and answers will be treated with greatest confidentiality and so I urge you to feel free to express your views. Please answer all questions. If some questions are not clear feel free to ask for clarification.

Thank you**.**

Instructions: please tick (√) where appropriate in the spaces provided. Your identity will not be disclosed so please do not write your name. Please try to be as honest as possible.
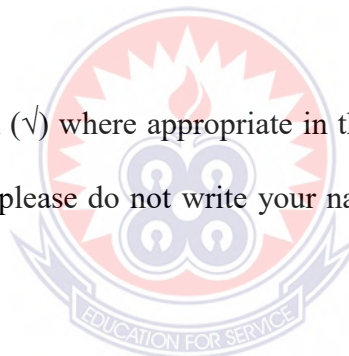
Ranking

1=Strongly Disagree (SD)
2=Disagree (D)
3= Agree (A)
4= Strongly Agree (SA)

BACKGROUND INFORMATION

1. Sex: Male

   A. Male   [   ]

   B. Female   [   ]

2. Age

   A. 18-23   [   ]

   B. 24-29   [   ]

   C. 30-35   [   ]

   D. 36-40   [   ]

   E. 41-45   [   ]

   F. 46-50   [   ]

   G. 51-55   [   ]

   H. 56-60   [   ]

3. Your highest qualification

   A. MPhil   [   ]

   B. MA/MED [   ]

   C. First Degree[   ]

   D. HND   [   ]

   E. DBS   [   ]

   F. Others (Specify)...
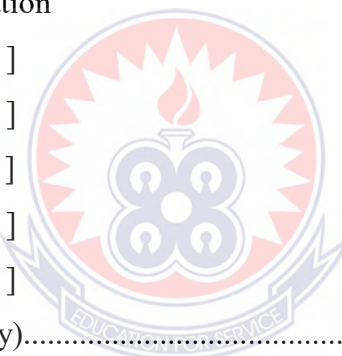
4. How long have you served in the school?

   A. 1 month - 2yrs   [   ]

   B. 2yrs - 3yrs   [   ]

   C. 4yrs - 5yrs   [   ]

   D. Above 5yrs   [   ]

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	SA	A	D	SD
OBJECTIVE ONE: **WHAT ARE THE VIEWS OF TEACHERS TOWARDS THE TEACHING AND LEARNING OF PUPILS WITH LOW VISION**				
1. I have the professional skills to teach pupils with low vision.				
2. I have a belief that pupils with low vision can learn equally like the able ones				
3. I am highly motivated teaching pupils with low vision				
4. I have adequate resources for teaching pupils with low vision.				
9. I offer counseling to pupils with low vision in my school.				
10. I use the most appropriate method of teaching that meet the understanding level of pupils with low vision				
OBJECTIVE TWO: **WHAT ARE THE STRATEGIES TEACHERS USE TO TEACH PUPILS WITH LOW VISION**				
11. I verbalize everything I write on the chalkboard for my pupils.				
12. I assign independent work in consistent manner to pupils with low vision				
13. I write boldly on the chalkboard.				
14. I use concrete objects as teaching and learning materials for teaching pupils with low vision.				
15. I give extra time to pupils with low vision to complete their activities/assignments.				
16. I provide individualized instruction to pupils with low vision				
17. I present TLMs on contrasting background				
OBJECTIVE THREE: **WHAT ARE THE RESOURCES AVAILABLE FOR TEACHING PUPILS WITH LOW VISION**				
18. Assistive devices in the form of magnifying lenses provided in the school are in large quantities				
19. I have resource personnel support available in teaching pupils with low vision.				
20. I have adequate writing materials such as dark lined books for the pupils with low vision.				
21. I have a resource room for pupils with low vision.				
22. I have adequate braille version of reading materials for pupils with low vision				
23. I have special materials and vision aids such as tactile objects, tactile maps, tactile gloves, creamer abacus and braille rulers to teach pupils with low vision				
24. I have closed circuit television (CCTV) which allows pupils to view enlarged print on a television screen, giving them access to course materials.				
25. I have school-based support team available for teaching pupils with low vision.				

OBJECTIVE FOUR: **WHAT ARE THE CHALLENGES TEACHERS FACE IN** **TEACHING PUPILS WITH LOW VISION**				
26. I can adapt the curriculum to suit the needs of pupils with low vision				
27. I can assist pupils with low vision to read and write in braille				
28. I can assist low vision pupils to use assistive devices such as magnifying lenses and telescopes				
29. I collaborate effectively with other professionals to support pupils with low vision in classroom				
30. I have requisite skills in teaching pupils with low vision				
31. I can improvise teaching and learning materials for pupils with low vision.				