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KNUST

**Support services for pupils with low vision in pilot inclusive schools in the Ejisu-
Juaben Municipality**

By

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DECLARATION

“I, BAAH, ISAAC ANIN declare that this thesis, 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.

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DEDICATION

This work is dedicated to my Parents Mr Charles Baah Kingsley and Mrs Elizabeth Baah.

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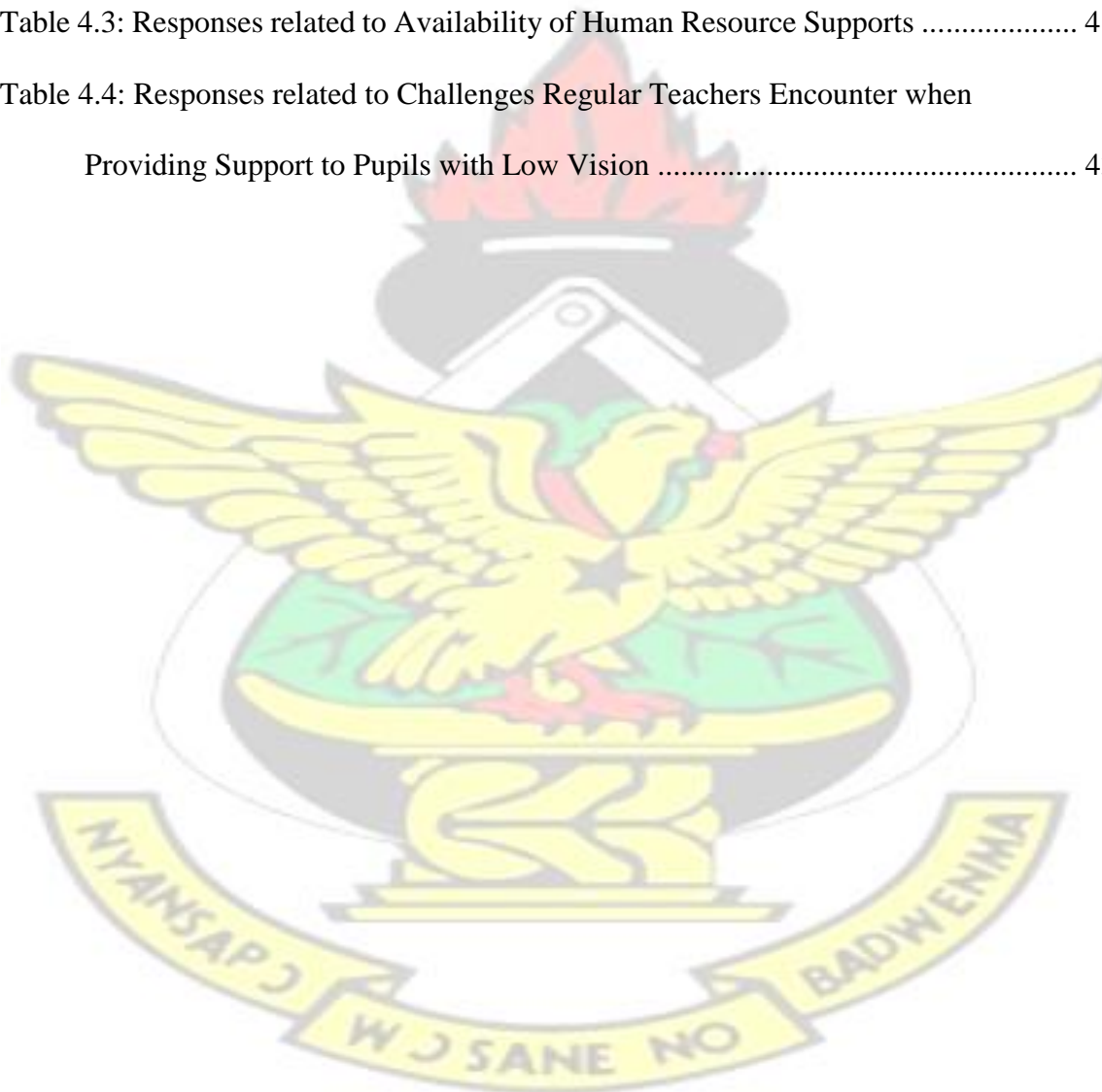
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ABSTRACT

The aim of the study was to investigate the support services available for pupils with low vision in inclusive education classrooms in Ejisu-Juaben Municipality. The research design used for this study was the descriptive survey. Purposive sampling technique was used to choose 100 Participants within the school for the study. A likert type questionnaire was used to collect data. Descriptive statistics in the form of frequencies mean and standard deviations were employed to analyze the collected data. Analysis of the data revealed that there were varieties of real materials and models of objects in the schools. Pictures with large shapes, large print charts are available in the schools for teaching pupils with low vision. Optical devices such as magnifiers, telescope and lenses were also available for use by pupils with low vision. The data further revealed that the human resource supports that the respondents said were available in all the schools were a resource teacher, guidance and counselling services. Also, related services such as eye screening, audiological services, and indirect services such as supporting the class teacher to develop an Individualized Education Plan for pupils with low vision. The challenges regular teachers encountered in providing support to pupils with low vision in all the schools included incompetence in managing pupils with low vision. The findings also showed that teachers were burdened with adapting instructional materials to meet the needs of pupils with low vision. The resource teachers did not also cooperate with teachers in the delivery of services to pupils with low vision. The teachers did not receive in-service training in order to manage pupils with low vision. It was recommended that Teachers should be given in-service training to update their skills in managing resources available for pupils with low vision.

CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

The integration, and inclusion of students with Special Educational Needs (SEN) into general education classroom is a much-discussed topic worldwide. The Salamanca Declaration of 1994 suggests that children with special needs should have access to general education which should aim at integrating them into child centered pedagogy able to address their unique needs (UNESCO, 1994). Inclusive education is to mainstream students with special needs alongside students without special needs into general education classes with adequate supportive services. An essential condition for the social inclusion of visually impaired individuals is their insertion into society. The success of inclusive education however depends on the availability of resources and support services in the schools. Inclusive schools require well equipped resource rooms which are manned by well qualified personnel. In addition, successful inclusion depends on the availability of support services like low vision aids, special educators, large print, close circuit television, counsellors, psychologist and social workers. It also depends on the effective utilization of resources to achieve maximum results (Smith, 2007).

According to Friend (2008), pupils with low vision are pupils with moderate to severe visual impairments (low vision). They experience difficulty in performing daily tasks involving the use of sight and need to use large print for reading, strong magnifying devices and other adaptations. Some pupils with low vision may also learn to read braille and use tactile and auditory channels to complete tasks. Koeing and Holbrook (2000) postulated that 90% of individuals with vision loss have limited vision and just 10% are functionally blind. Pupils with low vision are often disregarded in the majority of individuals who are visually impaired. Difficulties of pupils with low vision are often not apparent as they are

for pupils who are blind. Nonetheless, pupils with low vision require direct instruction in literacy, visual efficiency, accessing the core curriculum and compensatory skills (Koeing & Holbrook, 2000). Similarly, a UNESCO survey carried out in 1986 – 1987 on access to education revealed that 32 countries out of 52 countries which replied a questionnaire, less than 10% of the school age was enrolled in special education programme without adequate support services while the figure was under 3% in 44 countries. The reality underlining these figures is that majority of children and young people with special educational needs do not receive an appropriate education, if they are offered any form of education at all. However, literature shows that in the United State of America, students with special needs in inclusive education schools are provided with support. This is in the form of special assistance including when necessary, individualized instruction from specialists (Hardman, Drew & Egan, 2005).

UNESCO (2000) also has stressed that the importance of support services is to ensure that all students who are included benefit from the school programme, if not then inclusive schools become a dumping ground for students with disabilities and special needs. These authors' view suggested that when inclusive schools are adequately supported or have the right support services, they provide numerous benefits to students with special needs. In line with this, Alley and Deshler (1997) have noted that issues concerning child support, guidelines or directions play central roles in inclusive education classroom teaching and learning.

Support services for individuals who are partially sighted in inclusive schools in Ghana are critical because most inclusive education school teachers lack the basis to teach children with differential learning needs Avoke and Yepkle (2006). A study by Avoke and Yepkle

showed that there are individuals with mild impairments and special educational needs in inclusive education classrooms in the Winneba Municipality of the Central Region of Ghana. Also, data available at the Ejisu-Juaben Municipality and Special Education Division of the Ghana Education Service revealed that significant number of children in the inclusive schools in Ejisu-Juaben Municipality have learning needs which hinder their academic performances (Ejisu-Juaben Education Office, 2014). This trend suggests that pupils need to be adequately supported if they are to progress academically. In line with this is increasing shift in emphasis into inclusive education. (Hayford, 2013). According to Ocloo, Hayford, Agbeke and Gadagbui (2002), many children with special needs in inclusive schools go through education without any support, as such some of them drop out of school and those who managed to go through end up with poor grades. The main purpose of this study was to outline pupils with low vision to ascertain how they were managing with class events, since many teachers were doubtful to be familiar with specific strategies involved in arranging learning materials (Avoke & Ocloo, 2002).

1.1 Statement of the Problem

In order to guarantee a successful learning environment for individuals with low vision it is envisaged that inclusive Schools will have requisite support services for pupils with low vision. Lack of or insufficient support services may affect the pupils' participation in learning and result in general poor performance (Ocloo, 2010). Ultimately, the rights of these pupils to quality education as enshrined in the constitution of Ghana and the Disability Act 715 of 2006 would be violated. When support services are not available the pupils with low vision will not be able to participate successfully in learning. Basic schools in Ejisu-Juaben Municipality are among schools where pupils with low vision are receiving

education in the inclusive education classroom. However, support services in the form of skilled personnel, materials and equipment, which are crucial for meeting the personalised learning needs of these pupils, seem not to be available. Furthermore, teachers in these inclusive schools appear not to have adequate training and experience as well as personnel to assist them to remedy the differential needs of the pupils with low vision. The problem is that if these pupils' learning needs are not addressed, they would continuously perform poorly, fail and repeat classes and some may eventually drop out of school. It is in this context that the researcher wanted to look at available support services to help address the learning needs of these pupils so that they can progress academically. The aim of the study was therefore to assess support services available for supporting the learning needs of pupils with low vision in inclusive education classrooms at the Ejisu-Juaben Municipality, in order to establish whether or not the support services enable the pupils to learn successfully.

1.2 Research Questions

1. What instructional material supports are available for supporting the learning needs of pupils with low vision in the inclusive education schools?
2. What human resource supports are available for supporting the learning needs of the pupils with low vision in the inclusive schools?
3. What challenges do teachers in the schools encounter when providing support to pupils with low vision in inclusive schools?

1.2.1 Principal Objective:

To identify support services for pupils with low vision in the pilot inclusive schools at the Ejisu-Juaben municipality

1.2.2 Specific Objectives

1. To identify instructional materials support available for supporting the learning needs of the pupils with low vision in the inclusive education schools.
2. To identify human resource supports available for supporting the learning needs of the pupils with low vision in the inclusive schools.
3. To identify challenges teachers encounter when providing support to the pupils with low vision in the inclusive education schools.

1.3 Significance of the Study

It is envisaged that the results of the study would outline various kinds of instructional materials teachers provide to pupils with low vision in the inclusive schools in EjisuJuaben Municipality. It would guide the Ministry of Education in reforming and restructuring programmes for pupils with low vision so as to improve service delivery. The study would make provision for pupils with low vision to talk about the problems that they have been facing in the classroom and how these problems impacted on their learning and inclusive education class as a whole. Thus the study would enable the voices of pupils with low vision to be heard. The report would also add to the body of literature concerning instructional materials available for the pupils with low vision in general education in Ghana particularly, in inclusive schools at the Ejisu-Juaben Municipality. Also, the finding will reveal the challenges of teachers in the schools with regards to teaching and learning, the strategies they adopted to address the challenges.

In addition, the results of the study would help reveal the level of support services for pupils with low vision and how these will enable teachers in inclusive schools to effectively meet the learning needs of these pupils. These would assist parents, itinerant/resource teachers and the Ghana Education Service (GES) to find solutions in addressing the limited support services for pupils with low vision in the inclusive classrooms in the Municipality.

1.4 Limitation of the Study

The main limitation of this study is that data were collected from general classroom teachers who are from a restricted geographical area. Therefore their responses may not be representative of schools in Ghana. The scope of the study could have covered a larger area or more district and given more holistic picture of the issue under study.

Due to small sample size, the researcher does not intend to generalize the findings.

1.5 Delimitation of the Study

The study cover only schools in Ejisu-Juaben Municipality and pupils with low vision due to the peculiar interest of the researcher. The choice of these schools is based on the fact that these are practising inclusive education and there is the need to assess the quality of work and get to the root causes of problems pupils with low vision face in the inclusive education environment, whilst exploring strategies that could be used for supporting these pupils to learn effectively.

1. 6 Operational Definition of Terms

Low vision devices: These are special facilities/equipment which enhance visual functioning of an individual who are partially sighted.

Low vision: is a visual condition where there is a perception of light and visual acuity less than 6/18 to light perception.

Support services: Refers to extra system provided to parents and schools in helping children with special needs in education adjust to the environment and activities in order to overcome barriers to learning and development.

Pupils with visual impairment: refer to individuals who cannot see well even with correction and this adversely affects their educational performance.

Regular Teachers: They are trained professionals in the field of education. They usually teach in regular schools. Their traditional role is to teach students without disability and difficulties. These teachers are not specifically trained to deliver special education services.

1.7 Organization of the Study

The study has been organized into six chapters. Chapter one constitutes the introduction which discusses the background to the study, statement of the problem, purpose of the study, research questions, research objectives, significant of the study, delimitation, limitation, definition of terms and organization of the study. The second chapter dilates on the review of related literature. Chapter three talks about the methodology employed in the study. The Chapter three highlights the population, sample size/sampling technique, research design, instrumentation, data collection procedures and methods of data analysis. Chapter four covers the findings and discussions. In Chapter five, findings of the study have been discussed in relation with the research questions and literature. Chapter Six summarizes the entire study, provides limitation, conclusion and recommendations on the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviewed related literature of earlier studies conducted on support services for pupils with low vision in the regular schools. The literature was reviewed from books, journals and research articles. The literature was reviewed under the following strands:

- The theoretical framework of the study.
- The instructional materials to support pupils with low vision in the regular schools.
- Human resource supports for pupils with low vision in the regular schools.
- Challenges of regular teachers when providing support for pupils with low vision.
- Summary of literature review.

2.1 Theoretical Context of the Study

Lerner and Teti (2005) noted that a model is a philosophical content that talks about, set of variables and a set of logical and quantitative relationships. Similarly, Bullock and Selz (2007) who describe models as framework for thinking and acting suggest that any profession in which people intervene in the lives of others must have a “model” of practice which guides those interventions. The suggestion of Bullock and Selz, is critical because models provide a framework for selecting, sequencing, and organizing interventions (Boer, Niel-Ingvar, Van Baalen & Kumar, 2004), and they guide the process of decision-making, and assist in answering questions in research (Mezirow, 2000). A number of theories are applicable to education of students with special needs including individuals with perception of light in regular education classrooms. In this study the social model of disability was adopted.

2.2 Social Models of Disability

The selection of the social model of disability was to explain how it relates and influences societal contribution to the education of children with disability. Avoke (2005) stated that the social model views social restrictions for the disabled as consequence for their dysfunction. It is the social systems or set ups that act as a barriers to the participation of the disabled. The social model of disability considers the environment which has disabled the individual not the condition. Underling this social principles to disability is the belief that disability is a social construct, which promotes the viewpoint that disability is created by the social view that persons with disabilities with certain conditions are different. From an exploration of the literature and views from some researchers such as Avoke (2005) on the social model of disability, it can be inferred that participation of persons with disabilities in their own society are restricted due to barriers put in place by social systems. This in turn affects the person`s academic work and performance as well as the service provisions put in place for them. In other words, the model sees disability as environmental challenges that limits ones desire to perform a function involving those with low vision from maximum participation in society as well as defining the services in place for them.

The social model emphasizes that it is the environment that limits access and opportunities for work, education, and social participation of persons with disabilities. The social prejudices, discrimination, and stigma are inherent parts of the social model (Smart, 2001). In effect, majority of persons with disabilities become restricted with regard to access, participation, and adequate provision to quality education. The social model of disability as already explained, is a reflection of human right and equality. The assumption is that it was not individuals that were disabled by their physical or mental impairments as purported by medical conceptualization of disability but rather organization of society as

designated by non-disabled people that were more significantly disabling (Brynnner, 2000; Fraser, Meltzen, Ryba, & Neilson, 2000). Within the social model, the locus of the problem is not within the individual but within the oppressive aspects of societal, political, and un-enabling economic environments in which disabled people live (Barnes, 1996); Drake, 1996; Fraser *et al.*, 2000; Swain, French, Barnes & Thomas, 2004).

Since the 1990's the disability movement began to argue that the plight of disability rest on reframing the environment and society and not in "normalization" or "care" as found in the medical model. This view point formed the basis of the social model, which perceived disability as the result of any behaviour or barrier in society that prevents people with impairments from being able to play an equal role in life (Oliver, 1993). Such barriers can either be physical (for example, inaccessible buildings, transport or lack of sign language interpreters) or attitudinal (for example, discrimination in the workplace). Unlike the medical mode, the social model sees disability as a human right issue. Disabled people's organization (DPO's) have played a leading role in challenging professional dominance, making it clear that people with disabilities can make their own choices in life. They have also increased awareness of the role and responsibility that civil society should play in the inclusion of disability into broader social issues

(Secretariat of the African Decade of Persons with Disabilities, 2009).

Swain, French and Cameron (2003) noted that in the social construction, the

administration of the situation involve social principles, and thus, the society is expected to design the surroundings to meet the needs for full involvement in all areas of life. The situation is both ethnic and believes including the person, community and environmental change (Swain, *et al.*, 2003). With the social model, society and people must be changed

attitudes and perception about persons with disabilities (Finkel-Stein, 2001). This particular model is relevant to this study in that it emphasizes that states ensure education for persons with disabilities and special needs as an integral part of the education system. Thus, general educational authorities are responsible for the education of persons with disabilities and those with special needs are integrated settings. Education for persons with disabilities should form an integral part of national education planning, curriculum development and school organization. By and large, education in mainstream schools presupposes that provision of adequate and other appropriate support services exist to enhance education of individuals who are partially sighted.

2.3 Instructional Materials and equipment for Supporting Pupils with Low Vision to learn

There is a wide variety of instructional materials equipment for supporting pupils with low vision. In the opinion of Unegbu (2006), instructional materials and equipment for supporting pupils with low vision include tables, chairs vehicles, tape recorders, earphones, Braille machines and papers, large print materials, CCTVs, felt-pens, visually impaired specialists among others. In the same vein, Nwachukwu (2006) opines that “children with such an array of problems need a flexible curriculum that would provide an enabling environment for total development of their three domains- cognitive, affective and psychomotor” (p. 278).

2.4 The use Audio, Optical and Non-Optical 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 (Salisbury, 2008). 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).

Moreover, 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 teacher's or a classmate's explanation, they understand all the visual concepts in it before the class watch it. For a film with sub titles, a classmate or teacher can read aloud to the class to help those with visual impairment (Spungin, 2002). 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 incorporate a lens and do not need to be prescribed by a specialist. Things like large prints, braille and braille writer, tape recorders, book stands, recorded and talking books and calculators are examples of non-optical devices (Simon *et al.*, 2010). The role of both optical and non-optical devices is to improve vision and increase functionality of students with visual impairments through the use of other senses. It is the role of a teacher to encourage students with visual impairment to use visual devices and assistive technologies to help them with vision (Spungin, 2002). Teaching with instructional materials is critical in learning because the materials help learners to see, hear and handle what they learn. Instructional materials help to improve communication and make the teacher work easier because talk less (Ocloo, 2011). Many pupils with low vision need some form of materials or equipment in order to learn. For instance, a strong felt pen in a particular colour will enable the child with low vision to see what has been written. Non-shining papers with either no lines or very strong and well-spaced lines will be very useful to many children with visual impairments. Working papers and books with enlarged print will ease the task of reading for most children with low vision.

Magnifiers of all shapes and sizes are other useful devices which help significantly to ease the problem of reading in children and adults with low vision (Ocloo, 2011). Optical aids help individual with low vision function effectively in their environment. . This involves standard prescription spectacles, optical low vision devices for distant vision, and optical low Ocloo (2010) indicated that, it is necessary to attend to students with low vision and give their require spectacles. Work in American indicates that at least 40% of children with low vision need spectacles. Refraction should always be carried out before vision assessment (Ocloo, 2011). Best (1992) and Keeefe (1995) cited in Ocloo, (2011) suggest some special ways teachers can use materials to support pupils with low vision; Firstly, a teacher who is going to put a test on the chalkboard can give the material on a piece of suitable paper for the child with low vision. This will enable the child to copy from close range instead. Secondly, a teacher can make simplified drawing for the child with low vision from complicated picture. Finally, when possible; the teacher can provide the child with visual impairment an original object or animal if it is not harmful, so that the child explores it extensively while the other students are looking at the picture of the object or animal (Ocloo, 2011).

Additionally, the Task Force on Special Needs Education (2006) notes that learners with SNE including pupils with low vision need provision of the following materials and facilities in the regular schools: learning resources such as low vision devices, audio and audio visual equipment, working papers and books with enlarged print and a strong felt pens which will assist them to effectively. Heward (2006) on the other hand observes that no category of handicap requires greater coordination and provision of resources than in the area persons who are blind or visually impaired. UNESCO (2008) noted that learners must be provided with learning materials in formats that will meet their individual learning needs.

Randiki (2005) advises that the resources can be pooled at the start so that several schools in a zone can have such group resources kept in the offices and shared. Again, the writer notes that local artisans should be incorporated so that they are able to make and repair some of these devices. According to the most recent data available, about 24,000 school-age children have visual disabilities that make them eligible for special education services (Office of Special Education Programme, 2000). Gargiulo (2006) explains that in the 1950s and the 1960s, vision professionals restricted pupils with low vision not to use their sight for learning to read print. However, Natalie Baraga in 1973 discovered through research that children could learn to use vision that is left and that this would get better with practice. The training of residual vision is known as visual efficiency. The child is taught to use spectacles, magnifiers and any assistive devices to improve the use of vision (Hallahan, Kauffman & Pullen, 2009). Hallahan *et al.* (2009) further explain that pupils who have low vision should be made efficient readers with optical devices to enable them access print independently thus enabling them to develop solid and meaningful academic literacy skills.

2.5 The use of Tactile Materials

Teachers must be aware, that students with visual impairments have deficit in conceptual experiences and understanding due to absence of visual ability, therefore adaptations of teaching materials becomes paramount, if they have to learn all the things other students without visual impairments learn in the class. To help achieve this, therefore, such students should be taught physically using concrete experiences (Bishop, 1996; Pauline, 2008).

Following this proposition, the students should be given an opportunity to explore tactile diagrams. Tactile diagrams are very important to understand images and concepts which are difficult to explain and describe in words. Therefore, they should be used when shapes and patterns are very important to understand the concept but also, when the real objects are not available to help teaching (Salisbury, 2008). Tactile images or diagrams can be drawn on braille papers using a special mat and stylus. This produces a relief image or diagram that can be easily felt (UNESCO, 2001).

2.6 Adapting Written Texts

In order to support students with vision loss, instructional materials need to be employed. 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 (Bishop, 1996; Mastropieri & Scruggs, 2010). It is important to consult 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).

Meanwhile, individuals who are partially sighted should be given a note which are presented on a projector. A special education teacher for partially sighted, students with visual impairment, should be able to teach them before lessons begin. (Spungin, 2002)

2.7 Assistive Technology

Assistive technology for the blind or visually impaired include low tech” to “high tech” tools (Smith, 2012). According to Smith low-tech examples are pencil grips, highlighters, paper stabilizers and high-tech examples include computers, voice synthesizers and braille

readers. Also Furthermore, Rose (2006) stated that assistive technology devices are any piece of material item, or product system (software) used to improve the functional capabilities of persons with visual impairment. According to Weiter and Hastein (2003), instructional materials on ICT, material devices or printed paper all aim to fulfil a purpose. Firstly, there is a target to fulfil the function for which they are designed; secondly, they serve as a means for inclusive education. We know it is relevant to draw practical consequences deriving the function between them. The types of assistive technology in the classroom may be in place to aid in the following area: Computer Access, Compositing Writing Material, Communication, Mobility and Vision (Weiter & Hastein, 2003).

The technological developments during the last decades have significantly increased access to information in all formats with visual impairments. As Kapperman and Stiken (2000) observed, the ability to access information is essential for success in education, employment and life. Therefore, much of the development of assistive technology has focused on providing access to information. In particular, devices to read and write Braille and print have significantly improved with the application of new technology.

Such devices include audio technology (tapes and tape recorders, auditory text, recorded texts and synthetic speech) as well computer based technology such as Braille embossers (specialized tactile printer) advanced CCTV, scanners and optical character recognition software (technology that scans printed text and provide the user with speech output), computer screen readers, Compact Disc (CDs) and multiple hardware and software innovations. Computer assistive and technology are often cited as the means to overcome limited access to print and other environmental barriers for non-print readers (Gerber, 2003).

Gerber notes that a plethora of researchers and practitioners in the field of visual impairment have acknowledged that the use of computers and assistive technology can change the lives of pupils with visual impairments to a great extent by improving education and employment opportunities, enhancing social network and facilitating independence. In essence, assistive technology has the potential to be the “great equalizer” for persons with visual impairments (Michaels & McDermott, 2003). For instance many careers opportunities requiring access to visual information are now accessible to those who have visual impairments through the application of appropriate technology. It is broadly recognised that assistive technology has good impact on the lives of individuals with vision loss. (Kapperman, Sticken, & Heinze, 2002; Strobel, Fossa, Arthanat & Brace, 2006). However, the advancement in technology on the other hand has been cited as a factor for declining Braille use and Braille literacy (Spungin, 2005). In addition, assistive technology omits grammatical structure, spelling and traditional text formats. Therefore, as assistive technology market continues flourishing with devices and software that make the visual world significant more accessible to person with impairment, educators need to evaluate their applicability and effectiveness to literacy related needs.

Also, Optical Character Recognition (OCR): OCR technology enables individuals with visual impairment to place books or other print materials on a scanner and have the text interpreted and read using synthetic or digital speech. The first OCR system for individuals with visual impairments was introduced in 1976, when Ray Kurzweil invented the Kurzweil Reader. The early Kurzweil Reader was about the size of a small photocopy machine and was considered to be a truly remarkable advance for students with visual disabilities. While the device was often found in libraries, it was too bulky and expensive to be available to students in the classroom. Today, there are portable stand-alone OCR devices and devices that can attach to other computers and scanners

(Kurzweil, 2002).

2.8 Print Adaptation for Pupils with Low Vision

Determining the appropriate method of adaptations to magnify text for learners with low vision is an important issue, to ensure that difficulties in reading do not impede progress in educational, vocational and recreational activities. Such adaptation may include closer working distance (relative distance magnification), use of magnifiers (angular magnification), higher contrast material, large print and use of electronic devices (Richard, 2011).

Teaching with instructional materials is critical in the learning of human beings because they help learners to see, hear and handle what they learn. Instructional materials help to improve communication and make the teacher's work easier because he/she talk less (Ocloo, 2011). Many pupils with low vision need some form of materials or equipment in order to learn. For instance, a strong felt pen in a particular colour will enable the child with low vision to see what has been written. Non-shining papers with either no lines or very strong and well-spaced lines will be very useful to many children with visual impairments. Working papers and books with enlarged print will ease the task of reading for most children with low vision. Magnifiers of all shapes and sizes are useful devices which help significantly to ease the problem of reading in children and adults with low vision (Ocloo, 2011).

Additionally, Task force on special needs education (2006) notes that learners with SNE including pupils with low vision need provision of the following materials and facilities in the regular schools: learning resources such as low vision devices, audio and audio visual

equipment, working papers and books with enlarged print and a strong felt pens which will assist them to effectively. Heward (2006) on the other hand observes that no category of handicap requires greater coordination and provision of resources than in the area persons who are blind or visually impaired. Randiki (2005) advises that the resources can be pooled at the start so that several schools in a zone can have such group resources kept in the offices and shared. Again, the writer notes that local artisans should be incorporated so that they are able to make and repair some of these devices.

2.9 Human Resource Supports

Support services are services that are needed to assist a child with disability to benefit from regular or special education (Avoke, Hayford, Ihenacho & Ocloo, 1998). These services are offered alongside special education programmes to help individuals with special needs benefit from the training they get from school (Avoke *et al.*, 1998). For Lewis and Doorlag (1995) these support services are offered to pupils and students with disabilities to supplement special education programmes and these programmes include psychological services, counselling services, physical and occupational therapy as well as recreation and diagnostic medical services. Also, support services offered to a student will to a large extent depend on the special needs of that particular student. The services according to Garguilo (2005), may involve physical assistance and therapy, counselling and psychotherapy, modified learning environments and assistive learning devices, educational and psychological assessments and behavioural modification techniques.

Sands *et al.* (2000), said, all stakeholders have to be properly informed of the changes in order to make inclusion a success. Traditionally, discussions of important school outcomes have been conducted in private by school administrators, curriculum specialists and other

‘experts’. In contrast, in inclusive school communities, children, youths and their families, community members all participate in these important decisions along with school professionals and support personnel (Sands *et al.* 2000). The needs and interests of the learners inform policy. Professionals, like psychologists and social workers, have different roles, because they now have to listen to the views of other people and they do not have the last say. This partnership also ensures that inclusion spills from individuals to classrooms, from classrooms to the playground, from the playground to the entire school and then from the school to families and the entire community (Sands *et al.* 2000).

2.10 Collaboration with Parents

Parents offer a big contribution to the education of their children, and are potential sources of information about the academic ability of students with visual impairments. Parents are familiar with their wards and know their educational needs, and can decide for their children. They will also provide necessary information about social, physical and emotional development (Garner & Davies, 2001; Webster & Roe, 1998). Having this information, a teacher will strive to structure and modify his or her teaching to help student with visual impairments in the class (Spungin, 2002). Parents are also given a major role to play. Instead of sitting on the side-lines and being called to school to be informed of changes, they actually participate in decision-making that concerns making changes. Parents are to be involved in aspects of school, such as the assessment of their own children. They are normally very observant of their children’s performance and schools often tell rather than ask parents about their children’s performance (Engelbrecht *et al.*, 2004). Parents also have a right to be notified about anything that might concern the identification, evaluation or placement for educational purposes of their children.

They can also request an independent evaluation to be done for their children.

Parents can also provide essential information to the multidisciplinary team that assists in the development of an appropriate and a high-quality educational programme (Vaughn *et al.*, 2007). Parents play important role as mediators towards the school, by giving information and resolving problems when teachers/learners do not understand their child's needs (Lightfoot *et al.*, 1999). Some of the problem behaviours that manifest in the school environment emanate from the home and it is only the parent who can inform the schools about the nature of the problem. Parents should not just be called when there are problems but, should take an active role in preventing problems in the school. Some might argue that this is not feasible. Teachers are very much used to their own space in teaching and having to accommodate the views of others may seem an insurmountable task. One may also inquire when time would be found for this cooperation; what with working parents and their busy lifestyles. Many schools claim to involve parents but they mostly just pay lip service (Engelbrecht *et al.*, 2004).

Vaughn *et al.* (2007) and Downing (2008) are also of the view that parent teacher collaborative practices are not as comprehensive as they could be. Other professionals like psychologists and other therapists are used to their own offices and being consulted when there are problems. In inclusive education, the expectation is that all professionals will work together in a collaborative partnership where there are no hierarchies. Cooperation, then means that there has to be compromise from all partners so that they can work towards a common goal. Downing (2008) further argues that, co-operation may, however, appear impossible, since others may feel superior to others and this collaboration will be about whose last word it will be. It will take some time getting used to working with one another. In schools, parents fear approaching their children's teachers and psychologists and

therapists may be most feared both by parents and teachers alike, as they are considered to be far too well-educated than ordinary folk. This fear makes for an uneasy working relationship which might not benefit learners. Careful planning will therefore be required to ensure that all partners work together in a collaborative partnership (Downing, 2008).

2.10.1 Itinerant/Resource Teacher Service

Another support service given to pupils with low vision in the regular classroom is the itinerant or resource teacher services. This service aims at placing and supporting visually impaired individuals in regular classrooms to enable them achieve the best in learning. Resource teachers are specialists who are trained and attached to the district education offices and they go from school to school to identify, assess children and plan management programmes for regular teachers to enable them support pupils with low vision in their teaching and learning Special Education Department (2007). Baine (2001) pointed out that these specialists are consultants who travel from school to school to assist teachers in methods of assessment, instructions, materials preparation and equipment building. Okyere and Adams (2003) opine that in most of the mainstream schools in Ghana, specialist teachers of the visually impaired provide resource room support. The bulk of the teachings are done by the regular classroom teachers while the exercises of the visually impaired are transcribed by the resource teacher for the regular teacher to mark. In another area of support, specialist teachers also help the students identify landmarks to help them orient themselves to their environment.

According to Okyere and Adam (2003), resource teachers provide in-service training for the other teachers on how to manage the visually impaired child in learning. The techniques and methods of teaching some subjects are demonstrated for regular classroom

teacher to adopt. In the community, the resource teachers target the schools, the clinics as well as going to homes to educate students and parents on disability issues. The provision of these services in most cases help pupils with low vision to adjust in the general education and they benefit from their education (Okyere & Adam, 2003). According to St Joseph`s educational centre for the blind. (2008), resource teacher encourages realistic understanding of the individual child`s needs and abilities, thus helping the child realize his/her highest potential. Some aspects of the role of the resource teachers are; (a) to recommend any child/youth suspected of having a vision problem to be checked by an ophthalmologist or optometrist (b) To recommend access to specialized equipment and materials to support children/youth who are visually impaired, monitor the functioning of such equipment and arrange for the provision of appropriate vision specific teaching aids (c) preparing materials in alternate format or adapt environment to ensure access to information for the student with low vision (St Joseph`s education centre for the blind, 2008: P.224).

As part of the ISSP team, to identify the services required by pupils with low vision and to facilitate delivery with appropriate support agencies by liaising with them as required (e.g., Ophthalmology, Optometry, Speech-Language Pathology, Occupational Therapy, Physiotherapy, APSSEA, Neuromotor Division of the child Health Program at the Janeway child Health Centre, etc.) conduct workshops and in-services with teachers, parents and administrators relating to the education of children/youth who are blind or visually impaired St Joseph`s educational Centre for the blind (2008). Parents are also given a major role to play. Instead of sitting on the side-lines and being called to school to be informed of changes, they actually participate in decision-making that concerns making changes. Parents are to be involved in aspects of school, such as the assessment of their own children. They are normally very observant of their children`s performance and

schools often tell rather than ask parents about their children's performance (Engelbrecht *et al.* 2004). Parents also have a right to be notified about anything that might concern the identification, evaluation or placement for educational purposes of their children. They can also request an independent evaluation to be done for their children. Parents can also provide essential information to the multidisciplinary team that assists in the development of an appropriate and a high-quality educational programme (Vaughn *et al.* 2007).

Scruggs. (2007), reported that there is a benefit in co-teaching which include communication among students and teachers to enhance teaching. The International Council for Education of the Visually Impaired (2010) noted that some student may require the services of a medical specialist, who can meet the specific medical and physical needs of students including pupils with low vision by providing diagnostic and treatment services within their areas of specialization. For example, an ophthalmologist – a medical doctor with a specialty in diagnosis and treatment of eye diseases and defects. Treatment may include prescription of drugs, glasses, surgery or other therapy. Many medical-related services may be provided by school nurse, who can screen students for sensory and physical problems; treat some illness; offer explanations of medical records; monitor the efforts of pharmacological interventions; teach students specific health-care skills; offer training in nutrition, dental care, and other health-related skills; check the fit, maintenance, and functioning of prosthetic and adaptive devices; and help parents obtain medical services (Friend, 2008).

2.11 Challenges of Regular Education Teachers in Providing Support for Pupils with Low Vision

Thomas, Correa and Morsink (2001) noted that the role and support of teachers in the regular classrooms of late are more crucial than in the previous times. This is because the demographic and social changes in today's classroom represent a new population of children and a new set of challenges to teaching and learning (Thomas, *et al.*, 2001). Teachers are overburdened with overcrowded classes, persistent social problems, diversity of learner's needs, and lack of skills to teach students with various differential learning needs. The ways the learning needs are addressed often create more challenges for their improvement. Hayford (2013) explained that, teachers are confronted with a situation of how to balance the conflicting priorities between teachings and helping in terms of support they give to students. These authors believe that there is the need for teachers to be more involved in drawing individualized educational plan as well as taking children through problem solving skills. This will enable teachers incorporate the educational needs of pupils with learning and achievement problems in general classrooms.

2.11.1 Non-availability of Instructional Materials to assist the Teacher in Managing the Special Needs Child

Instructional materials are essential for effective teaching and learning. This is because in a mainstreamed setting, instructional materials are used by the teacher to facilitate learning for the individual child (Obi & Mensah, 2005). But this becomes a problem in most schools due to inadequate funds to procure them. The Ministry of Education and Ghana Education Service must see it that the capitation grants and other logistics reach schools on time for teachers to procure the needed materials for teaching. Deku and Vanderpaye (2008) were of the view that the choice of instructional materials greatly influences any educational programme. They continued that materials available influence content, quality, and general

efficiency of the instructional programme, teachers and schools must be provided with relevant materials to the needs of students including pupils with low vision. Also, large class sizes influence educational materials since there may not be adequate for the number of students in class. This may affect teachers' willingness to teach students with special needs and difficulties. Regular school teachers are more willing to accept students with disabilities in their class if adequate support is provided in accommodation, individualized instruction, teaching methods, materials and services (Bunch & Finnegan, 2000).

2.11.2 The challenge of large class Size

The recent drive for enrolment into regular schools through the introduction of the FCUBE policy, the capitation grant and school feeding programme have made many regular schools in Ghana to experience a sharp increase in student enrolment. Avoke and Avoke 2004 place the number between 60 and 90 in an average class in the country.

Such large class sizes according to Avoke and Avoke (2004) make it difficult for students with special needs to be effectively included in demonstration lessons since teachers are unable to offer support to such students. Ocloo *et al.* (2002) posit that in the rural and semi-urban environment, everybody that offers him/herself for enrolment or the school is not denied access; this however, created a situation where children with various degrees of special needs are found in regular schools.

Hayford (2013) noted that the sharp increase in enrolment has led to overcrowding in both special and regular school in the country (Ghana). In a study, teachers reportedly taught classes with enrolment ranging from 35 to 85 pupils. The challenges imposed on teachers by large class size ranged from inability to make time for all the pupils including pupils with low vision, to difficulty in marking class exercises to problems encountered with class

control. Also, large class size adversely affects teachers' assessment of pupils' progress in the programme of study as well as the quality of their marking. Ocran (2011) reported that out of 104 teachers surveyed in Basic Schools in the Central region, 79% of them taught classes with enrolment that ranged between 36 – 66 pupils. Only 21% of the teachers in that study handled classes with enrolment below 35 pupils. The findings from the studies confirm the Ministries of education assertion that there are variations in enrolments and many schools have not attained the national target of 35:1 pupil-teacher ratio. Consequently, teachers in these schools are not able to provide quality attention to all learners including those with special educational needs.

Large classes cause teachers to spend so much time on marking pupils' work that they tend to have very little time to prepare for teaching. By simple calculation, if a teacher has 35 pupils in his class and gives the pupils exercises in three different subjects, then, in a day he has 105 exercise books to mark. If the teacher uses a minimum of five minutes to mark a book then he will spend 525 minutes or 8 hours 45 minutes marking every day. That is most basic school teachers spend more than a third of a day marking of pupils' work, which is not helpful to inclusive education because teachers may not have the energy to attend to the needs of children with disabilities or special educational needs during school hours (Hayford, 2013).

Teaching pupils with low vision in Ghana can be said to be a difficult task to the general educator due to inability to cope with learning without the needed support. This however, puts some extra responsibilities on teachers in the regular classroom to diverse different ways to convey what is being taught in the schools for pupils with low vision to meet the targets in the National Curriculum. The way learning needs are addressed for students with special needs create challenges to the general education teachers.

2.11.3 The Challenge of Adapting the Curriculum and Teaching Learning Materials

The task of adapting instructional materials to the needs of low vision students adds to the regular teacher's anxieties. In inclusive settings, instructional materials are used by the teacher to facilitate performance by the individual child. The materials are therefore evaluated based on the needs of particular disabled children in the classroom. General education teachers will be faced with the challenges of adapting materials and equipment to meet the needs of the children match the structure of the academic subject and objectives of the lesson to be taught (Obi & Mensah, 2005).

Obstacles also exist in the area of adaptations of materials for pupils with low vision. Although some subjects such as integrated or natural sciences, English, environmental studies and mathematics, studied in the basic schools have syllabi adapted for pupils with low vision in which complex psychomotor activities are replaced by more manageable ones (Waihenya, 2000). Most syllabi used in general education classes do not have accommodations in terms of adapted activities for students with visual impairments. This makes it extremely hard for pupils with low vision to access the general education curriculum (Obi & Mensah, 2005). Obi and Mensah further stated that, teaching children with diverse needs calls for curriculum adaptation. This involves planning and adaptation of instructions to suit the needs of the learner. Teachers are expected to tailor their instructions to the needs of each individual child. This HF means that the content of instruction should be adapted by the teacher to make provision for both higher and lower achievers. The teacher will need to apply a wide variety of teaching styles and principles including direct instructions, systematic teaching, discovery learning, cooperative teaching and learning, one to one small group activities, peer teaching among others. Adapting these

methods will no doubt add to the teachers work load that are extremely challenging to most classroom teachers.

2.11.4 The Challenge of In-Service Training

Regular classroom teachers require intermittent in-service training or refresher courses for managing students with special needs including pupils with low vision. As today's classroom settings abound with new and challenging situations, the best way to assist the teacher is to develop the teacher through in-service training to support provision (Rose, 2001). Supporting this statement Rose, Bracket and Maxam (2001) postulated that inservice training should be considered an important part of educational planning for teachers in general education to meet the demands of diverse learners. William and Finnegan (2003) noted that regular education teachers do not have the required knowledge about children with special needs including pupils with low vision and this will influence their perception about them. These authors therefore suggest that inservice training should be an integral part of training for regular school teachers on the field in order to foster a greater level of positive attitudes towards children with special needs.

Specialists who are expected to serve the pupils with low vision in various capacities are grossly inadequate. It is common knowledge that not many students of special education desire to major in the area of visual impairment. This accounts for acute shortage of teaching and supportive staff in schools and institutions of higher learning. The system and design of educational programme in Nigeria do not promote effective learning for students with visual impairment. In-service training seminars and workshops must be regularly organized for both specialists and non-specialist teachers in special and mainstreamed schools. This is to update their knowledge on what they have not known in special

education so that they effectively support pupils with low vision in the mainstream schools (Olukotun, 2003).

2.11.5 The Challenge of Funds to Procure Equipment and Train Specialists in Special Needs Education

The insufficient satisfactory funding to procure equipment and train specialists for special education programs stands as one of the major factors working against effective implementation of the programs. The consequences of the under-funding of this sector are immediate for example, it results in the inability to purchase instructional materials to effectively prepare pre-service teachers like computers, text books, laboratory equipment, audio visual aids, slides, video clips, electronic white boards, electronic conferencing materials, enough chairs and desks in classrooms to keep students from having to stand to receive lectures to mention a few. The dilapidation that characterizes schools is very serious (Olukotun, 2006).

Additionally, Wang (2009) observed that funding should support provision for enough facilities, teaching materials, appropriate curriculum, train special educators and learning activities. Unfortunately, lack of funds is often an obstacle for development. Supporting this statement Olukotun (2004) argued that existing schools for the blind are not adequately funded. The same goes for the existing rehabilitation centers and vocational centers across the country. Subsidy from the government which complements the contributions of the non-governmental organization (NGO) is inadequate. This accounts for the poor running of special schools for the blind and some rehabilitation/vocational centers in Nigeria. The governments at all levels should improve upon their efforts to educate the visually impaired by increasing their annual subventions and grant in-aid to

mainstreamed/inclusive schools. Likewise the philanthropist and non-governmental organizations should be encouraged to generously fund the inclusive schools and award scholarships to teachers and student (Olukotun, 2004).

2.12 Summary of the Literature Review

The chapter presents relevant literature which relates to the study. The literature was reviewed on the following strands as raised in the research questions: Instructional materials supports available for supporting the learning needs of the pupils with low vision in the regular schools, Human resource supports available for supporting the learning needs of the pupils with low vision in the regular schools and challenges regular teachers in the schools encounter when providing supports to the pupils with low vision in addition is the theoretical framework.

CHAPTER THREE METHODOLOGY

3.0 Introduction

This section explains the methods used to obtain information for the study. These include; research design, population, sample, sampling technique(s), instruments, procedure for data correction, validity and reliability and data analysis.

3.1 Research Design

The research design employed in this study was descriptive. The use of the descriptive survey allows for easy description and calculation of data. For the purpose of this study, a descriptive survey design was appropriate because views were sampled from respondents on support services available for pupils with low vision in the Ejisu-Juaben Municipality as a basis for making generalizations.

3.2 Population and Sample size

The target populations for the study consisted of all teachers in the ten inclusive pilot schools in the Ejisu-Juaben Municipality. The estimated teacher population for the ten inclusive schools was 150 comprising 80 males and 70 females. The sample for the study was 100 respondents. Eighty (80) regular classroom teachers in inclusive schools who doubled as school-based resource teachers that is, 8 from each school and 20 head teachers. This sample was considered appropriate because they rendered services directly to the pupils with low vision in their schools and could therefore provide relevant information on the support services available for pupils with low vision.

3.3 Sampling Techniques

The Purposive sampling technique was used to select the regular school teachers and head teachers. The choice of this technique was influenced by the fact that the teachers were providing direct support to students with low vision in the inclusive schools at Ejisu-Juaben Municipality. According to Maxwell (2002), in purposive sampling, particular settings, person or event are deliberately selected for the important information they can provide that cannot be obtained elsewhere. Sarantakos (2000) also explained that this type of sampling allows the researcher to choose subjects who in his or her opinion are relevant to the research. Head teachers were chosen because they taught and have records of all the pupils with low vision in the schools and can give authentic data on them. The regular teachers were also chosen because they were school-based resource teachers who worked directly with other teachers as well as pupils with low vision by providing them with the

needed support services. Therefore, they were able to give the researcher the important information needed for the study.

3.4 Data Collection Tool and procedure

The instrument employed to collect data was questionnaire. The choice of this instrument was influenced by the fact that descriptive survey research lends itself to questionnaire (Creswell (2009)). The researcher used questionnaire as the research tool because he intended to seek information from many teachers and head teachers about their opinions on the support services for pupils with low vision in inclusive education classrooms. The questionnaire was a likert scale type made up of 24 close ended items prepared for teachers and head teachers in inclusive schools at Ejisu-Juaben Municipality. This was developed to elicit information on the main variables raised in the research questions.

The researcher personally administered the questions to the teachers and head teachers to respond within 21 days after which they were collected. According to Johnson and Christensen (2000), a high response rate was important to the accuracy of the study as well as proper representation of the identified population. A response rate of ninety-five percent (90%) therefore provided a high degree of accuracy for the result of this present study.

3.4.1 Validity and Reliability

The questionnaire was pilot tested to ascertain its validity and reliability, the appropriate length of item required to answer it and more importantly, to help in refining the final document. The sample for the pilot study was a group of 50 teachers from six basic inclusive schools in the Kona Educational Circuit where the teachers shared similar characteristics with the study area. The pilot was conducted in two (2) batches on two

different occasions. The (Cronbach Alpha values) from the variables found in factors identified from administering questionnaire was .922 which is greater than 0.70 that is generally required in social science research (Cresswell, 2005). The internal consistency of items in the questionnaire was thus highly reliable.

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Table 3.1: Cronbach's Alpha for Validity and Reliability

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.922	.932	24

3.5 Data Analysis

Responses to the questionnaire items were read and cross checked with other respondents from each school. Similar views were put into categories according to their reflections on the research questions. Five options were available for respondents under each item (these

were 1 = Strongly Disagree, 2 =Disagree, 3 =somewhat agree, 4 = Agree and 5 = Strongly Agree. Questionnaire items and their responses were coded and the Statistical Package for the Social Sciences (SPSS version 16) used in the analysis of the data in the form of tables, frequency, mean and standard deviations.

3.6 Ethical Consideration

For ethical clearance, the researcher did not ask participant to write names that reveals personal information. The rights of respondents and other parties involved at every stage of this study were particularly treated with utmost care. The following considerations were made to promote and protect the rights and interests of participants at the difference stage of the study. As a procedure to gain access to the school, an introductory letter from the Department of Community Health, KNUST was presented to the authorities of the school. The researcher told the participants of their right to participate voluntarily or withdraw from the study at any stage if they deemed it appropriate to do so. To try to make participants informed before signing the letters of informed consent, the purpose of the study, the risk and benefit of the study were explain to participant. Participants were also verbally assured that there would be confidentiality in the handling of any data or information obtained from them.

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter provides the results. The results are presented under sub-themes in line with the research objectives raised. The chapter is divided into four major subheadings. These include the demographic characteristics of respondents, availability of instructional materials to meet the learning needs of pupils with low vision, Human resources supports available for supporting the learning needs of the pupils with low vision in the regular schools and challenges regular teachers in the schools encounter when providing support to pupils with low vision in regular schools.

4.1 Demographic Characteristics of Respondents

The main demographic features of participants analyzed in this study included the position participants' held, gender, teaching experience, qualification and rank. As shown on Table 4.1 below, the highest rank among the participants was Assistant Director II (30%) while the lowest rank was Senior Superintendent II (17%). These participants had Master's degree (10%), Bachelor's degree (50%) and Diploma (40%). The findings indicated that 25% of the participants had working experience ranging between 1 and 5 years, 35% had worked between 6 and 10 years, 25% had worked between 11 and 15 years and 15% had worked for 16 years and above. The demographic characteristics of participants are summarized in Table 4.1.

Table 4.1: Demographic Characteristics of Participants

	Number of Participants	Percentage%
Category		
Head Teachers	20	20

Teachers	40	40
Resource Teachers	40	40
Total	20	100

Rank

Assistant Director II	30	30
Principal Superintendent	25	25
Senior Superintendent I	28	28
Senior Superintendent II	17	17
Total	100	100

Qualification

Master's Degree	10	10
Bachelor Degree	50	50
Diploma	40	40
Total	100	100

Sex

Male	48	48
Female	52	52
Total	100	100

Years of Teaching 1-5	25	25
6-10	35	35
11-15	25	25
16 and above	15	15
Total	100	100

Source: Field Data, 2015

4.1.1 Availability of instructional materials support to meet the learning needs of pupils with low vision in the inclusive education schools

Table 4.2: Respondents' response questions related to availability of Instructional Materials

Statement	1	2	3	4	5	Mean	S.D
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1. Tape recorders are available in my school.	45	26	2	12	5	1.95	1.25
2. Reading stands are accessible for pupils with low vision in my school.	30	40	2	9	9	2.18	1.27
3. There are varieties of real materials in my school for teaching pupils.	3	7	0	40	40	4.18	1.02
4. Writing and reading guides are available for pupils with low vision in my school.	21	33	8	22	6	2.54	1.27
5. Optical devices such as magnifiers, telescope and lenses are available for use by pupils with low vision.	9	27	2	25	28	3.41	1.43
6. I use pictures with large shapes in teaching pupils.	6	11	2	50	21	3.76	1.14
7. Large print charts are available in my school for teaching pupils with low vision.	10	8	5	40	27	3.73	1.28
8. There are no models of objects in my school.	33	29	10	8	10	3.74	1.33
Overall mean						3.19	0.54

n = 90, Source: Field Data, 2015.

Means were calculated from a scale of 1 = Strongly Disagree, 2 =Disagree, 3 =somewhat agree, 4 = Agree and 5 = Strongly Agree

Eight different instructional materials were identified and used for the study (Table 4.1).

The respondents were asked to determine the availability of the materials in their various schools. Generally, the respondents agreed with the availability of the instructional materials in the schools. The materials that the respondents agreed to be most available in all the schools were variety of real materials (M= 4.18), pictures with large shapes (M=3.76), models of objects (M= 3.74), large print charts (M 3.73) and optical devices

such as magnifiers, telescope and lenses (mean score of 3.41). The high mean scores of 4.18, 3.76, 3.74, 3.73 and 3.41 shows that the respondents agreed that those materials mentioned were available in their schools. On the other hand, with the low mean scores of 1.95, 2.18, and 2.54, the respondents disagreed that materials such as tape recorders, reading stands and writing and reading guides were available in their schools.



4.1.2 Human resource supports available for supporting the learning needs of the pupils with low vision in the regular schools

Table 4.3: Responses related to Availability of Human Resource Supports

Statement	1	2	3	4	5	Mean	S.D
1. Regular teachers are able to support pupils with low vision to learn effectively in my classrooms.	45	35	0	2	8	1.74	1.00
2. Individualized teaching of pupils with low vision is practiced in my school.	40	35	5	15	5	2.22	1.23
3. Indirect services such as supporting the class teacher to plan an IEP, select the right materials for pupils with low vision is practiced in my school.	10	15	5	30	30	3.61	1.38
4. A resource teacher is attached to my school to help pupils with low vision to learn.	9	6	1	40	34	3.93	1.25
5. Related services such as eye screening services are functional in my school.	12	8	3	32	35	3.81	1.36
6. I collaborate with other teachers in teaching my pupils with low vision.	54	30	0	2	4	1.57	0.95
7. Peer support is actively practiced in my school.	54	28	2	16	4	2.06	1.26
8. Guidance and counselling services are rendered to pupils including pupils with low vision in my school.	7	13	10	45	15	3.53	1.16
Overall mean						2.81	1.06

n = 90, Source: Field Data, 2015.

Means were calculated from a scale of 1 = Strongly Disagree, 2 =Disagree, 3 =somewhat agree, 4 = Agree and 5 = Strongly Agree

Eight different Human Resource Supports items were identified and used for the study

(Table 4.3). The respondents were asked to determine the availability of the Human Resource Supports in their various schools. Generally, the respondents had a somewhat agreement with the availability of the human resource supports in the schools.

The human resource supports that the respondents agreed to be most available in all the schools were a resource teacher (M= 3.93), Related services such as eye screening, audiological services (M= 3.81), Indirect services such as supporting the class teacher to plan an IEP (mean score of 3.61) and Guidance and counselling services (M= 3.53). The high mean scores of 3.93, 3.81, 3.61 and 3.53 shows that the respondents agreed that those Human Resource Supports were available in their schools. However, with the low mean scores of 1.57, 1.74, 2.06 and 2.22, the respondents disagreed that human resource supports such as collaboration with other teachers, regular teachers and peer supports, and individualized teaching of pupils with low vision were available in their schools. The varied standard deviations for example, 1.00, 1.25, 1.38, and 1.23 and so on, show the variations of responses on each of the statements raised.

4.1.3 Challenges regular teachers in the schools encounter when providing support to pupils with low vision in regular schools.

Table 4.4: Responses related to Challenges Regular Teachers Encounter when Providing Support to Pupils with Low Vision

1. Adapting instructional materials to meet 3 the needs of pupils with low vision burdens my work as a regular teacher.							1.06
2. As a regular teacher, I receive assistance 4 from special educators in order to provide effective teaching for pupils with low vision.	6	5	35	40	1.07		1.07

3. Funds are available to procure teaching 1 and 7 0 12 70 1.41 0.92 learning materials.
4. Instructional materials are readily 13 5 20 50 1.82 1.17 2 available in my school.
5. Resource teachers do not cooperate with 9 me 23 15 31 14 2.75 1.22 in delivery of services to pupils with low vision.
6. I do receive in-service training in order 20 to 60 1 4 5 2.04 0.95 manage pupils with low vision.
7. In spite of large class size, I involve 3 pupils 10 2 35 40 1.90 1.10 with low vision in demonstration lessons.
8. As a regular teacher, I do not have 3 6 0 33 48 4.30 1.01 necessary competences to manage pupils with low vision.

Statement	1	2	3	4	5	Mean
	7	5	30	45	4.18	

S.D



2.54 0.33

Overall mean

n = 90, Source: Field Data, 2015.

Means were calculated from a scale of 1 = Strongly Disagree, 2 =Disagree, 3 =somewhat agree, 4 = Agree and 5 = Strongly Agree

Eight different statements were formulated on the challenges regular teachers encountered in providing support to pupils with low vision (Table 4.4). The respondents were asked to determine the challenges regular teachers encountered in providing support to pupils with low vision in the schools. The challenges regular teachers encountered in providing support to pupils with low vision in all the schools were; incompetence in managing pupils with low vision (M=4.30). A mean score of 4.18 showed that teachers were burdened with adapting instructional materials to meet the needs of pupils with low vision. With a mean score of 2.75, the respondents agreed that resource teachers did not cooperate with teachers in the delivery of services to pupils with low vision. Another mean score of 2.04 indicated that teachers did not receive inservice training in order to manage pupils with low vision. The varied standard deviations for example, 1.22, 1.07, 1.17, and 1.06 and so on, show the variations of responses on each of the statements raised.

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter discusses the results in the light of the literature review and the research objectives raised.

5.1 Availability of instructional materials support to meet the learning needs of pupils with low vision in the inclusive education schools

Majority of the teachers confirmed the availability of instructional materials to meet the learning needs of pupils with low vision. The result confirms the findings of (Ocloo, 2003) who noted that many pupils with low vision need some form of materials or equipment in order to learn. For instance, a strong felt pen in a particular colour will enable the child with low vision to see what has been written. Non-shining papers with either no lines or very strong and well-spaced lines will be very useful to many children with visual impairments.

The findings from the study showed that magnifiers of all shapes and sizes were other useful devices available in schools and thus help significantly to ease the problem of reading in children and adults with low vision (Ocloo, 2003). Optical devices play a key role in enhancing vision and reducing visual disability in pupils with low vision. They include standard prescription spectacles optical low vision devices for distant vision and optical low vision devices for near vision. Aduwa-Ogiogbaen and Imogie (2005) asserted that materials and resources including, opaque projectors, still pictures, maps, charts, graphs and many more are available in schools and offer a variety of learning experiences individually or in combination to meet different teaching and learning experiences. Incorporating these tools and materials present, support and reinforces teaching. Office of Special Education Programme (2000) noted that students who are visually impaired but

have at least some useful vision are often able to rely on large print materials, specialized magnification lenses, or electronic enlargement for the assistance they need.

5.1.1 Human resource supports available for supporting the learning needs of the pupils with low vision in the regular schools

The analysis of data revealed that related services such as eye screening and audiological services were functional in the schools. Eye screening and audiological services are very critical services as far as the inclusion of pupils are concerned. Children with visual or hearing impairments may look like typical children, but early signs can indicate a problem. These signs are important because identification of visually or hearing impaired students leads to early intervention. According to Torreno (2010), early identification of impairments among students is extremely important because early intervention will be most effective. Sometimes it is unclear whether a child has a vision or hearing problem or not. Physical signs of vision problems include eyelids drooping over one or both eyes, or eyelids that do not completely cover the eyes when the child closes them. If a child has a clear squint, has jerky eye movements, or has eyes that do not move together, teachers should see a paediatric ophthalmologist. Teachers' ability to identify pupils with visual or hearing impairments in the classroom also leads to the identification of their learning needs.

The data however, showed that resource teachers were attached to the schools where pupils with visual impairments were being included. Resource teachers render direct services to both teachers and pupils with visual impairments. They indirectly render services to teachers in the form of workshops on how to handle pupils with special needs. Hornby, Atkinson and Howard, (1997) cited in Nel, Müller and Rheeders (2011) are of the opinion

that this support includes a speech therapist, a psychologist, an occupational therapist as well as a remedial teacher who is prepared to provide the other teachers with in-service training.

According to Nel *et al.* (2011) the best support experienced by a learner with barriers to learning is to be assisted by a specialist in the field of the barrier. However, this is not always possible, due to limited financial and human resources, as well as accessibility. Also, the data indicated that indirect services such as supporting the class teacher to plan an IEP and selecting the right materials for pupils with low vision were practised in the schools. For instance, specialized teachers, otherwise known as special educators support regular classroom teachers to develop Individualised Education Plans (IEP) for pupils with low vision in their classrooms. Kanaita (2010) contends that writing effective inclusion IEP's is the cornerstone of an individually planned, specialized, intensive, goal directed, using research based methods and guided by students performance instruction for disabled students. Kanaita (2010) noted that in-class support models undertaken by special educators have a number of advantages, including the transfer of skills to the classroom teacher, increased collaborative planning and greater opportunities for pupils to keep pace with classroom work.

The analysis of data further revealed that guidance and counselling services were rendered to pupils with low vision in my school. Counselling services had been touted to be a cornerstone on which inclusive education for pupils with special needs grows. The data however, indicated that no appropriate specialized counselling and guidance services are rendered to pupils special needs in some of the schools. Counselling approaches to special needs children have traditionally been oriented towards helping them resolve a variety of

emotional conflicts that are, by implication, more or less adaptive and neurotic. Ocloo (2003) noted that counselling services help the child with low vision to adjust and accept the challenges the impairment imposes on him/her. He observed that many children with visual impairment believe that a miracle might occur to restore their sight and as a result do not accept their conditions. Any attempt to help them settle down for serious work is seen as an act of discrimination. Such clients must be counselled to get over this dilemma and face the world in its new form. The essence is to guide the client to come to term with the disability and move along with others.

5.1.2 Challenges regular teachers in the schools encounter when providing support to pupils with low vision in regular schools.

The high mean scores show the affirmation of the respondents on the challenges they encountered in providing support to pupils with low vision in the schools in their schools. With low mean scores the respondents disagreed to statements associated with as challenges they encountered in providing support to pupils with low vision in the schools in their schools.

The data analysis highlights some challenges that teachers encountered when providing support to pupils with low vision in their schools. The data showed with a mean score of 4.30 that teachers did not have necessary competences to manage pupils with low vision. The availability of specialized equipment and other resources require specialized skills to utilize them. The use of braille, photographs, illustrations filmstrips, charts, maps, globes, posters, diagrams, speech assisted computers demand technical skills in their usage. It is quite worrying that the respondents had no skills in using the few available equipment and materials. Mendy (2007) noted that teachers need to be equipped with skills in screening,

identification and management of children who are blind and have low vision. Mendy observed that teachers who go through the college of Education have some limited basic information of special needs in general. They do not have in-depth knowledge on the specific areas of disability such as low vision and consequently are not able to cater for all the children.

The data analysis further revealed that adapting instructional materials to meet the needs of pupils with low vision burdened the work of regular teacher. Fisher and Ryndak (2001) noted that adapting the curriculum involves differentiating instruction to provide learners with a variety of ways to process information and demonstrate what they have learned, in order to "match" the way in which each learner learns most effectively. This demands time and commitment in order to serve pupils with low vision effectively in inclusive settings. Teachers have to spend time and energy in addressing diversity in the teaching and learning situation. Armstrong (2000) noted that adapting the curriculum involves differentiating instruction to provide learners with a variety of ways to process information and demonstrate what they have learned, in order to "match" the way in which each learner learns most effectively. This, Armstrong asserts that, it could be cumbersome for teachers to handle.

The data revealed the non-cooperation of resource teachers as far as their responsibility as teacher support systems were concerned. Teacher support is always built on cooperation, commitment and understanding, but in situations where these values are lacking, students with low vision can easily face many obstacles such as poor academic performance repetition of classes and eventually some could be dropped out. It should be noted that

students with low vision in an inclusive education system could only function effectively if the collaboration between resource teachers and general teachers is effective.

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CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

The purpose of the study was to examine the support services available for pupils with low vision in inclusive education classrooms in Ejisu-Juaben Municipality. The study revealed that there were varieties of real materials and models of objects in the schools. Pictures with large shapes, large print charts are available in the schools for teaching pupils with low vision. Optical devices such as magnifiers, telescope and lenses were available for use by pupils with low vision. The data further revealed that the human resource supports that the respondents agreed to be most available in all the schools were a resource teacher, guidance and counselling services, related services such as eye screening, audiological services, and indirect services such as supporting the class teacher to develop an Individualized Education Plan for pupils with low vision. The challenges regular teachers encountered in providing support to pupils with low vision in all the schools were incompetence in managing pupils with low vision. The findings also showed that teachers were burdened with adapting instructional materials to meet the needs of pupils with low vision. The resource teachers did not also cooperate with teachers in the delivery of services to pupils with low vision. The teachers did not receive in-service training in order to manage pupils with low vision.

It emerged from the study that several real materials as well as optical devices were available for teaching pupils with low vision in the schools. Resource teachers, guidance and counselling services and related services were also available in the schools. The available resources improved the performance of pupils with low vision in the schools in spite of certain challenges that existed.

6.2 Recommendations

Comprehensive policy and administrative measures are of necessity in order to improve upon the state of inclusive educational system in Ghana so as to enhance the learning abilities and activities of the visually impaired. Below are some suggestions:

Devotion of Adequate Resource to the Inclusive Project

The government of Ghana needs to devote enough funds to inclusive schools through the budget of the ministry of education. Adequate funds could help to improve availability of instructional materials, visual aids and restructure the available curriculum to enhance the learning activities of the visually impaired. Moreover, the services of resource persons in inclusive schooling can be employed to layout the foundation for the success of the pilot scheme.

Training of Teachers in Inclusive Education The government must build the human resource capacity in inclusive schooling by giving scholarships to teachers to further their education in that direction. The adequacy of the needed human capital would enhance the success of the inclusive schooling project started in the country.

Again, Teachers should be given in-service training to update their skills in managing resources available for pupils with low vision. Also resource teachers should cooperate and collaborate with teachers in order to ensure effective resource utilization for pupils with low vision in the inclusive basic schools

Public Educational Programme on Inclusive Educational System

There is the need to educate and conscientize the general public on the need to add their quota to ensuring the success of inclusive education system. Especially, stakeholders such

as parents and the general public need good knowledge in inclusive education to commensurate the work of teachers.

Provision of the Needed Technologies

There is the need to provide schools implementing the policy of inclusive education with modern visual and low vision technologies to enhance their capacity to fully achieve the requirements of inclusive educational system. Evidently, the pilot inclusive schools at Ejisu-Juaben Municipality does not have the requisite resources and capacity to achieve the required result of inclusive educational system. Therefore, there is the need for the government to build the technological capacity of such special schools by providing them with computers with adapted software packages to enhance success in the school curriculum for the pupils with visual impairment. The schools should be provided with resource rooms and equip the rooms with the needed resources for pupils with visual impairments.

6.3 Suggestion for Further Study

- This study was conducted in Ejisu-Juaben Municipality and therefore further studies could be extended in the other Municipalities.
- Student's views on support services provided by teachers in inclusive education schools.

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CONSENT FORM

Statement of person obtaining informed consent:

I have fully explained this research to _____ and have given sufficient information, including that about risks and benefits, to enable the prospective participant make an informed decision to or not to participate.

DATE: _____ NAME: _____

Statement of person giving consent

I have read the information on this study/research or have had it translated into a language

I understand. I have also talked it over with the interviewer to my satisfaction.

I understand that my participation is voluntary (not compulsory).

I know enough about the objective, methods, risks and benefits of the research study to decide that I want to take part in it.

I understand that I may freely stop being part of this study at any time without having to explain myself.

I have received a copy of this information leaflet and consent form to keep for myself.

Name _____

DATE: _____ SIGNATURE/THUMB PRINT: _____

APPENDIX

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,

KUMASI.

DEPARTMENT OF COMMUNITY HEALTH

QUESTIONNAIRE FOR REGULAR SCHOOL TEACHERS/HEADTEACHERS

**TOPIC: SUPPORT SERVICES FOR PUPILS WITH LOW VISION IN THE
PILOT INCLUSIVE SCHOOLS AT THE EJISU-JUABEN MUNICIPALITY**

Dear Colleague,

This thesis is submitted to the Department of Community Health, Kwame Nkrumah University of Science and Technology, Kumasi in partial fulfillment of the requirement for the award of Msc Disability, Rehabilitation and Development. Therefore, any information that is provided would be treated confidentially and wholly for the academic pursuit.

INSTRUCTIONS

Kindly answer the questions that are in this questionnaire. Using the scale assigned to each statement, indicate by ticking (✓) the appropriate box that answers the questions.

Please, do not write your name.

1 = STRONGLY DISAGREE 2 =DISAGREE 3 =SOMEWHAT AGREE
4 = AGREE 5 = STRONGLY AGREE

SECTION B Availability of Instructional Materials

Statement	SA	A	N	D	SD
1. Tape recorders are not available in my school.					
2. Reading stands are accessible for pupils with low vision in my school.					
3. There are varieties of real materials in my school for teaching pupils.					
4. Writing and reading guides are available for pupils with low vision in my school.					
5. Optical devices such as magnifiers, telescope and lenses are available for use by pupils with low vision.					
6. I use pictures with large shapes in teaching pupils.					
7. Large print charts are available in my school for teaching pupils with low vision.					
8. There are no models of objects in my school.					

Availability of Human Resource Supports

Statement		SA	A	N	D	SD
9.	Regular teachers are able to support pupils with low vision to learn effectively in my classrooms.					
10.	Individualized teaching is practiced in my school for pupils with low vision.					
11.	Indirect services such as supporting the class teacher to plan an IEP, select the right materials for pupils with low vision is practiced in my school.					
12.	A resource teacher is attached to my school to help pupils with low vision to learn.					
13.	Related services such as eye screening, audiological services are functional in my school.					
14.	I collaborate with other teachers in teaching my pupils with low vision.					
15.	Peer support is actively practiced in my school.					
16.	Guidance and counseling services are rendered to pupils including pupils with low vision in my school.					

Challenges Regular Teachers Encounter when Providing Support to Pupils with Low Vision

Statement		SA	A	N	D	SD
17.	Adapting instructional materials to the needs of pupils with low vision burdens my work as a regular teacher.					
18.	As a regular teacher, I do not receive assistance from special educators in order to provide effective teaching for pupils with low vision.					
19.	Funds are not available to procure teaching and learning materials.					
20.	Instructional materials are not readily available in my school.					
21.	Resource teachers do not cooperate with me in delivery services to pupils with low vision.					
22.	I do receive in-service training in order to manage pupils with low vision.					

23.	Due to large class size, I do not involve pupils with low vision in demonstration lessons.					
24.	As a regular teacher, I have necessary competences and qualifications to manage pupils with low vision.					

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