KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF MEDICAL SCIENCES

DEPARTMENT OF COMMUNITY HEALTH

SUPPORT SERVICES AND ADAPTATIONS FOR PUPILS WITH VISUAL

IMPAIRMENT AT BECHEM ST. JOSEPH'S PRACTICE BASIC INCLUSIVE

SCHOOL IN THE BRONG AHAFO REGION OF GHANA

BY

OWUSU-AMOAKO JUSTICE

APRIL, 2015

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Support Services and Adaptations for Pupils with Visual Impairment at Bechem St.

Joseph's Practice Basic Inclusive School in the Brong Ahafo Region of Ghana

A Thesis submitted to the Department of Community Health, School of Medical

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In partial fulfillment of the requirements for the degree of Master of Science

(Disability, Rehabilitation and Development)

By

OWUSU-AMOAKO JUSTICE

(PG4934110)

APRIL 2015

DECLARATION

I, OWUSU-AMOAKO JUSTICE, hereby declare that except references to other people's work which have been duly cited, this project work is the result of my own work and that, it has neither in whole nor in part been presented elsewhere.

OWUSU-AMOAKO JUSTICE   …………………..   …………………..

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(SUPERVISOR)   SIGNATURE   DATE

DR. ANTHONY EDUSEI   …………………..   …………………..

(HEAD OF DEPARTMENT)   SIGNATURE   DATE
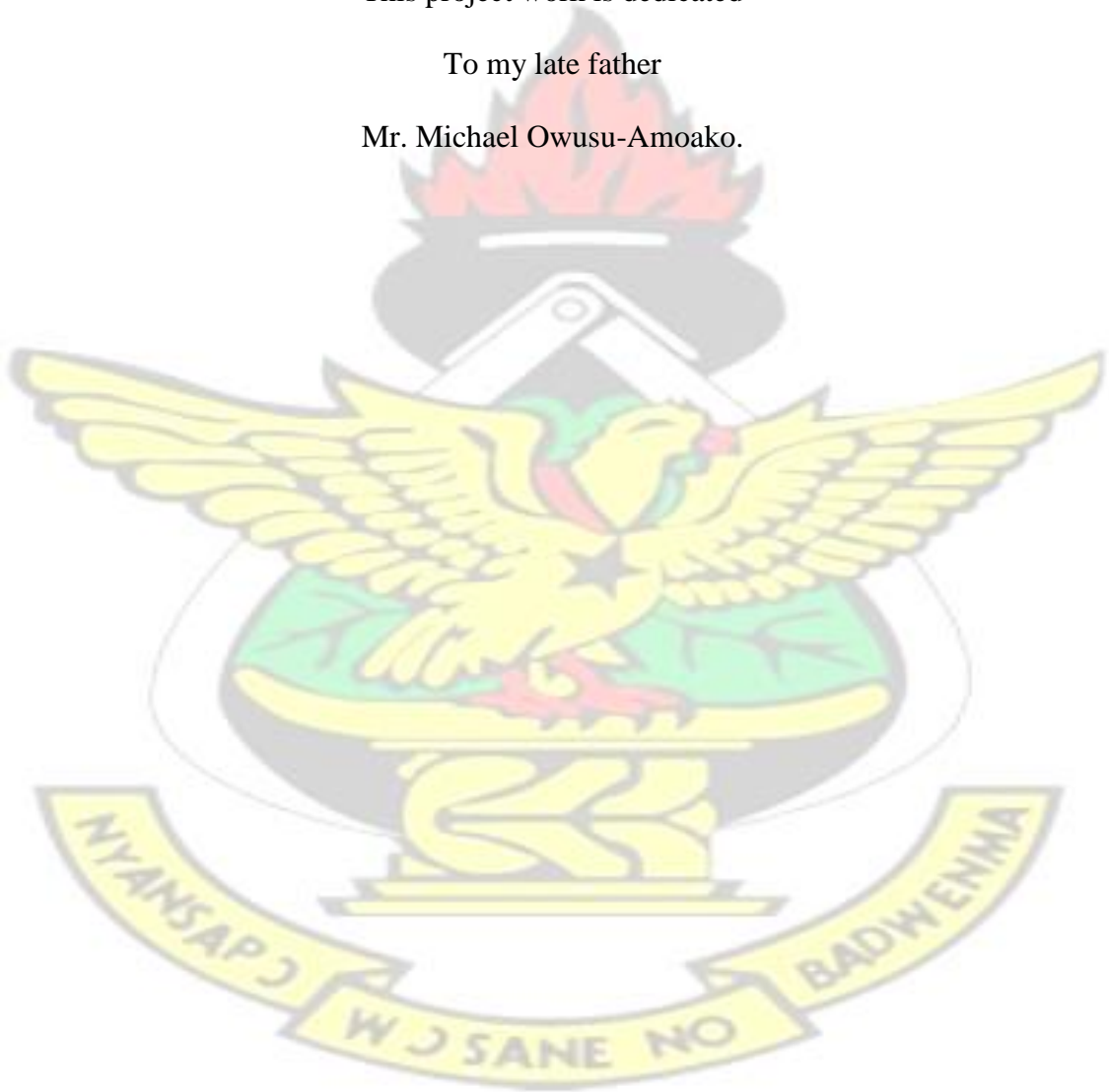
DEDICATION

This project work is dedicated

To my late father

Mr. Michael Owusu-Amoako.

ACKNOWLEDGEMENT

This study could not have been completed without the assistance and co-operation of many individuals. I therefore wish to acknowledge with sincere gratitude, my indebtedness to them.

First and foremost, I express my profound gratitude to Almighty God for seeing me through this programme successfully. I also wish to recognize and acknowledge my indebtedness to Dr. Samuel K. Hayford, Head of Department of Special Education, University of Education, Winneba, for his patience, exquisite guidance and supervision throughout the study. I am also grateful to the authors, from whose work certain valuable materials were gathered for the project.

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ABSTRACT

The research work sought to assess the support services and adaptations for pupils with visual impairment at Bechem St. Joseph's Practice Inclusive Basic School in the Brong Ahafo Region of Ghana. The descriptive study involved an administration of structured questionnaires to fourteen teachers of the Bechem St. Joseph's Practice Basic Inclusive School. The study specifically sought to describe how the school environment and facilities have been adapted to enhance the participation of pupils with visual impairment in learning, and establish whether there are specialized personnel to support pupils with visual impairment to participate in learning. The result of the study revealed that school buildings and furniture arrangement were friendly to pupils with visual impairment

whereas the layout, playground and the environment were poorly designed. Furthermore, the teachers introduced adaptations in the curriculum while resource teachers provided additional instructional support in the form of braille writing, transcription of class work and enlargement of prints which helped to meet the needs of the pupils with visual impairment. The research also revealed that the school has a resource room for the resource personnel and adequate supply of writing materials for pupils with visual impairment. However, computers with adapted software packages to augment instructional support for the blind were lacking. Based on these findings, the researcher recommended that the Government helps the school to procure computers with adapted software packages to supplement instructional support for the visually impaired.

CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

Students with visual impairments have unique educational needs which are most effectively met using a team approach involving professionals, parents and students themselves where possible. According to the American Foundation for the Blind (2013), in order to meet the unique needs, students with visual impairment must have specialized services, books and materials in appropriate media (including braille), as well as specialized equipment and technology to assure equal access to the core and specialized curriculum, to enable them to most effectively compete with their peers in school and ultimately in society.

The education of the blind and individuals with visual impairment has a very interesting history. In Ghana, the blind were seen as liability in their families and their communities. This in effect meant that no provisions were made for their development. Most of these individuals were killed or overprotected, misdiagnosed and undereducated such that they led a life that was segregated and debased (Ocloo, 2011).

The Akwapim Akropong School for the blind was the first residential school of its kind for the visually impaired in all West Africa if not in Africa (Ocloo, 2011). Even though the school started in June, 1936, it was officially opened in 1945.The idea of starting a second residential school for the blind at Wa in the upper west region of Ghana was initiated by the Methodist church to serve the northern sector of the country, and in May, 1958, the school was opened.

However, in 1962, the Henderson committee recommended that all special schools should be taken over by the Ministry of Education, and as a result of this, in 1968, a resolution was adopted by the conference of Teachers of the Disabled demanding that a separate directorate should be created for Special schools. This idea was hailed and in 1974/75, a directorate was opened to supervise the activities of all special schools in the country.

According to Ocloo (2011), the schools for the blind in Ghana have very laudable objectives, and that they set out to educate all children with visual impairment in order to enable them live as normal as possible. The school system also thrives to inculcate in these children both cognitive and vocational skills which can be marketable for their independent livelihood and sustenance.

In terms of the curriculum, the schools for the blind in Ghana have followed the same curriculum in the ordinary public school system. However, the syllabus is modified and adapted to meet the peculiar educational needs of pupils with visual impairment (Ocloo, 2011). In ensuring access to quality education for all children irrespective of the child's background, religious affiliation and geographical location among others, a pilot inclusive programme was rolled out in 2003 in Ghana involving seven hundred and forty nine schools from thirty eight districts across the country, to assess the possibility of implementing it nationwide (Otaah, 2014). In addressing the challenges militating against its implementation, the government of Ghana had taken bold decisions to ensure that the challenges of children with special needs were addressed however, those policies would not achieve the expected results unless there was a change in attitude by those who implemented them (Hayford, 2014)

Successful participation in learning by pupils with visual impairment can be achieved if there are modifications of teaching strategies, instructional materials and equipment as well as information in braille. However, since its adoption as an inclusive pilot school, no study has been conducted at Bechem St. Joseph's practice inclusive Basic school in the Tano South district of Brong Ahafo Region to ascertain whether the school is meeting the set objectives of ensuring that pupils with visual impairment participate successfully in learning by eliminating barriers to learning and participation. It is also anticipated that regular schools which have adopted inclusive programme are required by policy to progressively make their environment disability-friendly (MOE, 2008).

1.1 Statement of the Problem

In order to meet the unique educational needs of the visually impaired pupils in the regular schools, modification in assessment procedures, creative placement practices and individualized educational programmes specifically designed are essential ingredients to assist pupils with visual impairment overcome barriers to learning. The main issue is that without these services, the pupils with visual impairment will become excluded in most of the learning activities.

As a pilot inclusive school, it is anticipated that St. Joseph's Practice inclusive Basic Pilot School adapts its environment and makes provision for support services and personnel to support pupils with visual impairment in order to ensure that they successfully participate in learning. This study is therefore intended to find out what St. Joseph's practice inclusive basic school at Bechem in the Brong Ahafo region has been able to achieve since it was turned into a pilot school in the year 2002, with regards to ensuring successful participation of pupils with visual impairment.

1.2 General Objectives

The general objective of the study was to establish whether St. Joseph's Practice Inclusive Basic School has the requisite resources, support system and adapted environment to promote inclusion of pupils with visual impairment to facilitate their successful participation in learning and other school activities.

1.3 Specific Objectives

The specific objectives which guided the study were to:

- Describe how the school environment and facilities have been adapted to enhance the participation of pupils with visual impairment in learning.

- Establish whether there are specialized personnel to support pupils with visual impairment to participate in learning.

- Discuss the instructional adaptations employed by teachers to assist pupils with visual impairment to participate successfully in learning.

1.4 Research Questions

The following were the questions that this study sought to address.

- What environmental adaptations has the school made to enhance access to pupils with visual impairment?

- What types of personnel has the school recruited to support pupils with visual impairment to participate successfully in learning?

- What types of resources available for the pupils with visual impairment?

- What types of curriculum and instructional adaptations have teachers made to promote learning among pupils with visual impairment in the school?

1.5 Significance of the Study

In achieving quality education for pupils with visual impairment who are enrolled in a school which was originally meant for those without visual problem, adequate related services must be provided in order not to exclude them in the society. Thus the study of St. Joseph's practice inclusive basic pilot school is significant for the following reasons:

- The study will equip St. Joseph's Practice Basic Inclusive School in the Brong Ahafo region of Ghana in terms of support services and adaptations to promote effective participation of pupils with visual impairment.

- The study will also enable the school meet the diverse social and academic needs of pupils with visual impairment.

- The results of the study will also help to facilitate the successful participation of pupils with visual impairment in terms of resource availability.

- It will help reduce the negative perception of the general public that, pupils with visual impairment cannot be enrolled in the same environment with their sighted ones.

- Finally it will add to the existing literature and knowledge about educating pupils with visual impairment in an inclusive setting and also lead to further related issues on availability of support services and adaptations for inclusive schools in Ghana.

1.6 Scope of the Study

Thematically, the study was limited to investigating the support services and adaptation for pupils with visual impairment in Ghana. However, geographically, the study was limited to the Bechem St. Josephs Practice Basic Inclusive School in the

Brong Ahafo Region of Ghana.

1.7 Delimitations of the Study

On issues relating to visual impairment, it is most appropriate to get information from visually impaired persons in the specific area of study. The information from visually impaired students would have added more picture and clearer definition of the problem of the study. However, this study was narrowed to soliciting for information from the teachers of the pupils with visual impairment at Bechem St. Joseph's Practice Inclusive Basic School in the Brong Ahafo Region of Ghana. This is due to financial, time and other constraints.

1.8 Limitations of the Study

Despite the usefulness of this study, it has several limitations to be acknowledged. First, the findings in this study depend on the honesty of the respondents. It is known that individuals would agree more on socially desirable answers and disagree more towards socially undesirable answers rather than fully and truly express the feeling and opinions. Another limitation of this research is that the data of this study were collected through the surveys, so there is a high probability of inaccurate information. Moreover, the small sample size limits the reliability and the generalization ability of the study.

CONCEPTUAL FRAMEWORK
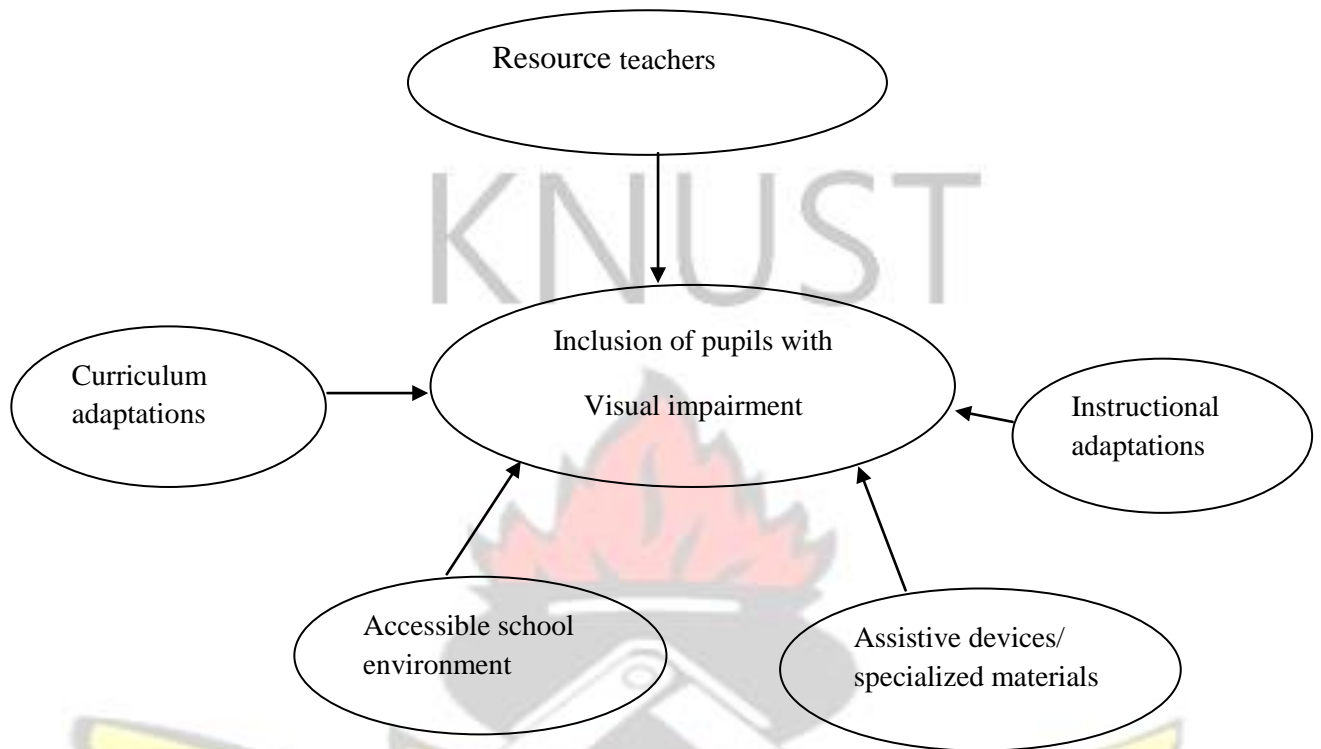
Fig 1: conceptual framework

In ensuring an effective inclusion of pupils with visual impairment at Bechem St. Joseph's practice basic inclusive school, the following factors must be considered; resource teachers, curriculum adaptations, accessible school environment, assistive devices or specialized materials and instructional adaptations.

1.9 Operational Definition of Terms:

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

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

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

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Special Education: Is a set of instructions that is individually tailored to meet the unique needs of a child with exceptionality, taking into account the child's individual learning strengths and weaknesses rather than following one set of curriculum as regular education does.

Special Needs: Is a term used to describe individuals who require assistance that may be medical, mental or psychological. However 'special needs' as a concept is used within an educational context as special educational needs.

Disability: Disability in general can be considered as a condition that in some way hampers or hinders a person in terms of his or her ability to carry out day to day activities (WHO, 2001).

1.10 Organization of the Study

The entire work is divided into five chapters. The first chapter is the introduction. It provides the background information on the topic, and defines the statement of the problem, objectives of the research, and it also provides the research questions, limitation of the study, delimitation of the study and organization of the study. In chapter two, the definitions of the main concepts and discussion of the relevant literature on support services and adaptations for pupils with visual impairment are dealt with under the literature review. Chapter three constitutes the methodology, while chapter four presents the results and analysis as well as the discussions and analysis of the field survey. Finally, chapter five concludes the text of the study. It summarizes the major findings of the study, provides policy implications and recommendations as well as practical limitations encountered during the survey to facilitate future research work in that area.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter discusses related literature of the study. The discussion has been organized under the following sub-topics:

- Individuals with visual impairments

- Learning characteristics of pupils with visual impairments

- Support services for pupils with visual impairments in inclusive classrooms ☐ Adaptations for pupils with visual impairments in regular schools

2.1 Individuals with visual impairments

There are both legal and educational definitions of visual impairment. Legal definition:- according to the British Blind Act (1962), a person shall for the purpose of registration as blind under Section Two of the Act, be regarded as blind if his or her visual acuity is so restricted that he is unable by reason of such restriction to perform any work for which eye sight is essential. The legal definition involves assessment of visual acuity and field of vision (Hallahan, Kauffman & Pullen, 2009).In terms of educational definition, the American Public Law (PL) 94-142 states: "where a person with visual handicap is described as a child with visual impairment that even after correction adversely affects the child's educational provision" (Ocloo, 2005 pg. 33).The educational definition of visual impairment focuses primarily on the child's ability to use vision as a medium for learning. Children who are unable to use their sight and rely on other senses, such as hearing and touch are described as educationally blind (Hallahan, et al., 2009).

Definitions of blindness and visual impairments vary depending on the discipline or the agency offering the services (Rusalem, 1972). This is to emphasize that the visually impaired (blind) can be put into two main groups as the blind and the partially sighted, thus the partially sighted are also called persons with low vision. According to Kaln and Morhead (1973), only 10% of individuals with visual impairments are in total darkness and the rest of the population have some vestige of vision. Although, relatively few people are blind inferring from the earlier statement by Kaln and Moorhead, the term has a specific definition developed for legal and social purpose, usually referred to as the legal blindness

According to Koestler (1976), a person who has central visual acuity of 20/200 or less in the better eye with corrective glasses or central visual acuity of more than 20/200, if there is a visual field defect in which the peripheral field of vision is contracted to such an extent that the widest diameter of angular distance is not greater than 20 degrees in the better eye is referred as legally blind. Even though this definition became part of the Aid to the Blind Act of 1935 and hence part of the Federal Law of America, it should be noted however that, the definition of blindness of other nations may differ from this accepted legal definition of blindness in the United States (Goldstein, 1980).

In support of these views, Scholl (1986), stipulated that the above legal definition did not consider individuals who may experience functions in vision or who have pathologies functioning under certain environmental conditions or have visual acuity better than 20/200 but are those who are inefficient in the use of their eyes or vision, or who have deteriorating eye conditions. In addition, when measuring visual acuity for determination of legal blindness, only distance vision is measured. Although there is much relationship

between near vision and distance vision or acuity, all persons perform tasks in specific settings which have varied visual requirements so that at times near vision may be more critical variable in the performance of certain task.

Barraga (1983) also demonstrated through her studies of residential school children that visual efficiency could be significantly increased with systematic programmes for instruction. Since that time, advance in research optics and technology have resulted in curriculum development for the purpose of assisting children with low vision to maximize the use of residual vision. Many educationists have therefore tried to redefine low vision and again Barraga (1983) described a person with low vision as the individual who has limitations in distance vision but is able to see objects and material within a few meters away. Bishop (1971) also maintained that the child with low vision is the one whose visual condition is such that it interferes with efficient learning, but who is still able to use print as his chief medium of learning.

Corn (1986) also believed that visual efficiency in children improves when they are trained to use their low vision for academic work and other functional activities. This calls for a critical look at who a low vision child is. Again Corn stipulated that, the child with low vision is viewed in Britain as someone who is substantially or permanently handicapped by defective vision caused by congenital defect or illness or injury but not so blind as to be unable to perform any task for which eyesight is essential. In terms of conventional definition, the World Health Organization

Programme Advisory Group on Prevention of Blindness (1991) adopted a definition which could be reviewed when the need arose in course of time. Thus a person with low vision is the one who has an impairment of visual functioning even after treatment or

refractive error correction and has visual acuity of less than 6/18 to light perception or a visual field of less than 10° (degrees) from the point of fixation, but uses or is potentially about to use vision for the planning or execution of task.

Visually impaired children constitute a small percentage of the school-age population approximately one child in a thousand. Recognizing that these students have very individual and distinct needs, will help to ensure that those needs are met, which is a key factor in inclusive education (Blatch, 1997; Palmer, 2005a; Student Support Services, 2001). For students who are visually impaired to be successfully included in regular schools, they must be able to access and participate in learning equally with their sighted peers (The American Foundation for the Blind, 2005a; Palmer, 2005a).

2.2 Learning characteristics of pupils with visual impairments

Exceptional children including children who are visually impaired have unique learning needs which prevent many of them from achieving their potential in life especially relating to life competencies through the ordinary provision of general education (Ocloo, 2001).

Like other disabilities, visual impairment can be congenital or adventitious, and many adventitiously blind people retain a visual memory of things they formerly saw. With this, many researchers agree that vision loss has a major impact on learning (American Foundation for the Blind, 2005a, 2005b; Pagliano, 2005; Palmer, 2005a) and that students with visual impairment learn differently from their sighted peers. In support of this assertion, Pagliano (2005) states that unlike their sighted peers, who "learn incidentally through vision", students with vision impairment must be "systematically and

sequentially taught". They are unable to rely on visual cues and observation, and instead must utilize their other senses (American Foundation for the Blind, 2005a, 2005b; Jindal-Snape, 2005; MacCuspie, 1996; Palmer, 2005a, 1998).

Students' ability to use vision as well as how much they use other senses for learning, are aspects of each category (Bishop, 1996; Turnbull, Shank, Smith & Leal, 2002). The terms low vision, functionally blind and blind are often used to describe and categorize levels of vision. Generally, students with low vision are able to learn using their visual senses; however they may need to have print magnifier, contrast enhanced or type font or size changed (Turnbull et al, 2002). Students in this category characteristically work more slowly and experience difficulty working with details (Colenbrander in Barraga& Erin, 1992).

People with functional blindness typically use a combination of modalities to function within their surroundings (Turnbull et al, 2002). Students in this category generally read and write using braille. Some functionally blind individuals have sufficient vision to allow them to move around the classroom safely. Others however, may require considerable accommodations to do so. According to Colenbrander et al, (1992), near blindness and total blindness are included in this category and students with total blindness receive no stimuli from their visual channel. However, Objects that have different shapes and sizes, many degrees of hardness and softness, roughness and smoothness will encourage the child with visual impairment to expand and explore the world with tactile perceptual abilities (Best, 1992).

Characteristics of children with visual impairment are usually defined by degree of visual impairment and age of onset. According to Okyere and Adams (2003), the degree of visual impairment may mean they only need the support of enlarged print or magnification. They again stipulated that however, more seriously impaired students will need to learn braille or have access to technological support. They further pointed out that age of onset is important because if the children become blind later, they will have a visual memory which will be very valuable in their education. It is however useful for a teacher to know the age at which a student became visually impaired.

Like cognitive development, language development of severely visually impaired children progresses at a slower rate but delays lessen significantly or disappear altogether by school age (Okyere and Adams 2003). Motor development and mobility are other forms of development which are of equal importance on the part of visually impaired pupils. According to Okyere and Adams (2003), pupils with visual impairment may exhibit abnormal gait and posture if early intervention does not occur.

Socially, difficulties that may be manifested by visually impaired individuals are more of the attitudes of others than of their visual impairment. A large number of social factors prove to be barriers to inclusion for students who are visually impaired, who often experience poor social inclusion while attending regular schools (Hatlen, 2004; Shapiro et al., 2003). Many of these students lack appropriate social interactions, have poor self-image and suffer from low self-esteem (Tuttle & Tuttle, 2004), which combined with a deficiency of social skills, often ends up translating into social rejection and isolation from their sighted peers (Bishop, 1997; Hatlen, 2004; Wolffe& Sacks, 1997 as cited in Kim, 2003; Kekelis& Sacks, 1992 as cited in Palmer, 1998). Students who have problems

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initiating social contact with their sighted peers can have difficulties with social inclusion

(Celeste, 2006 as cited in Celeste, 2007; Jindal-Snape,

2004).

Since sighted students often have minimal knowledge of the differences and difficulties caused by visual impairment (Peavey &Leff, 2002; Rosenblum, 2000), other factors, including lack of non-verbal communication skills, not maintaining eye contact, abnormal physical appearance caused by their visual impairment and the existence of blindism, such as eye pressing and arm flapping work to further isolate these students from their sighted peers. Other differences, such as assistive technology, may contribute to further isolation (Wolffe, 2000 as cited in Griffin-Shirley &Nes, 2005; Hatlen, 2004). Until social issues are dealt with, students with visual impairment cannot truly experience successful inclusion (Hatlen, 2004). Hatlen (2004, 2002) states that students with visual impairment are not experiencing successful social integration in inclusive regular school settings, despite social skills being a part of the expanded core curriculum. He claims that they do not learn social skills by imitation or observation, and there is often not enough time in the school day to teach them the necessary social skills.

To ensure success in the core curriculum, pupils with visual impairment need to receive appropriate training in the expanded core curriculum, which can include the following areas: orientation and mobility; social skills; technology; braille; independent living skills; recreation and leisure skills; post secondary and career education; use of remaining sight; and organizational skills (American Foundation for the Blind, 2005a,

2005b; Blatch, 1997; Hatlen, 2003, 1997; Lewis, 2002; Lueck, 1999; Pagliano, 2005; Palmer, 2005a, 2005b; Student Support Services, 2001). Visual impairment is thus

considered a low-prevalence disability; there are comparatively few visually impaired students, even relatively to other population of exceptional children.

Students who are visually impaired require qualified and trained educators who actively promote inclusion (American Foundation for the Blind, 2005a; British Columbia Ministry of Education, 2006; Pagliano, 2005; Palmer, 2005a). The members of the learning team must work collaboratively to accommodate the needs of these students (Kamionka, 2002; Pagliano, 2005; Palmer, 2005a; Student Support Services, 2001). Educators must be flexible, caring and willing to assist the students so they can gain equal access to the curriculum (Palmer, 2005a). However, children who are blind or have low vision need to learn to use their other senses to provide information they miss through their eyes. According to Freiberg (1995), listening skills are especially important for the visually impaired person and that their hearing may be normal, below normal or they may be hearing impaired or deaf.

Children who are blind or have low vision usually have more difficult with orientation of their bodies in space and movement in their spatial environments than normal vision children (Freiberg, 1995). Thus most teachers need to include lessons in orientation and mobility to the individualized educational programme of visually impaired students. According to Freiberg (1995), most persons with visual impairments occasionally use sighted persons as quides and in this regard, teachers and sighted students need to learn how to guide their blind or low vision friends. Each child with low vision needs to feel accepted by his or her more visually abled peers, and the teacher plays a major role in encouraging positive interactions between children with and without visual impairments

2.3 Support Services for Pupils with Visual Impairments in inclusive classrooms

All children can learn, but not all children learn in the same way, at the same time, or at the same rate. Learning is an individual process. There are many different ways of meeting a student's exceptional learning needs. What is right for one student may not be the best for another. No two children are exactly alike. Children identified with the same diagnosis often have different abilities and learning needs, and require different supports.

In Ghana, most children with low vision attend regular schools without any tangible support. The recent survey conducted by the Ghana Eye Care Programme of the Ministry of Health (1995) confirmed that Ghana has about 30,000 children of school going age who work with low vision for which they need special assistance and educational help to come to terms with their disability. Meeting the special educational needs of children and young people is still at an early stage of development in most countries including Ghana. A UNESCO survey carried out in 1986/87 found that in 32 out of 51 countries that replied to a questionnaire, less than 10% of the school-age population was enrolled in special education. In another 44 countries, the figure was under 3% (Ocloo, 2011). The stark reality underlying these figures is that the great majority of children and young people with special educational needs do not receive any appropriate education, if they are offered any education at all.

According to Ocloo (2011), the integration of children with low vision in Ghana uses the itinerant teaching approach in the basic school system in only six districts out of the 170 Metropolitan, Municipal and District Assemblies. The itinerant support service is one of the service delivery and placement alternatives for children who are handicapped. It is an educational support service provided by itinerant teachers for children who are handicapped but receiving their education in the regular classroom.

The itinerant teacher programme for the visually impaired conforms to rules and regulations for PL 94-142 of the United States of America regarding the Least Restrictive Environment and the Individualised Education Programme (IEP). This programme involves a collaborative effort of the classroom teachers and the special educators of children with visual impairment. Cruishank (1967) defined itinerant support services as a programme in which the handicapped children remain in their regular classroom and are given special assistance through the visiting special teacher who advises and assists the classroom teacher and often work with the child in a more or less tutorial capacity.

According to Gearheart and Weishahn (1980), in the itinerant support service programme, the regular classroom teachers retain primary responsibility but special education personnel provide supportive or supplemental assistance to both the student and his teacher or teachers. Under this plan, the child with visual impairment lives at home and attends classes in the local public school with other neighbourhood sighted peers and most of the school curriculum is taught by the regular classroom teachers while the itinerant teacher for children with low vision provides special education modifications required by each child (Tuttle, 1986).

According to UNESCO (1994), an educational team is accountable for the education of students with special needs. Following this philosophy, a collaborative team, made up of classroom teachers, special support teachers, administrators, school psychologists, parents and students, must meet to outline the skill and ability levels of the students, the goals and objectives for their learning, the recommended support services and any required adaptations, strategies, specialized materials and assistive technology

(American Foundation for the Blind, 2005a; British Columbia Ministry of Education,

2006; Lueck, 1999; Pagliano, 2005, 1998; Salend, 1998; Student Support Services, 2001).

In terms of appropriate educational support, Manitoba Education offers Alternate Format Services (AFS). These services support the education of students who are print disabled by providing books in alternate formats, such as audio files, Braille, large print and electronic text. Alternate format materials are available for students who are blind, visually impaired, as well as those who are physically disabled or learning disabled. In order to meet the unique needs of the visually impaired individuals, students must have specialized services, books and materials in appropriate media (including braille), as well as specialized equipment and technology to assure equal access to the core and specialized curricula, and to enable them to most effectively compete with their peers in school and ultimately in society (American Foundation for the Blind, 2013)

With respect to communication needs, relationships are important for pupils with visual impairments and the classroom can be a wonderful place for its development. It is for this reason that Ocloo, (2003) argued that it is necessary for the teacher to provide experiences to develop and enrich language by providing and promoting the understanding of basic concepts leading to the acquisition of both receptive and expressive language. It is however, the duty of the peripatetic teacher or consultant teacher or the itinerant teacher to determine with the regular teacher, the appropriate means or methods of reading instruction in either print or braille or using audio reading.

For students with vision impairment to be successfully included in regular schools and make them socially accepted, positive social interaction with their sighted peers is

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essential (Celeste, 2007; Hatlen, 2004; Pagliano, 1998). Hatlen (1997) states that these students are unable to learn social interaction skills "casually and incidentally", so in order to socially function with their sighted peers, they must be taught proper social interaction skills (Celeste, 2007; Hatlen, 1997; Kamionka, 2002; Palmer, 1998; Wagner, 2004). According to Hatlen(1997), if social interaction skills are not learned, students with vision impairment often become social isolates, which is the opposite to the desired effect of inclusion.

Mobility is very crucial when it comes to the education of the visually impaired children. According to Ocloo (2003), orientation and mobility should be taught to the visually impaired pupils to ensure independent movement among these children. Again the visually impaired children should be given basic guidance and counseling services to encourage them to accept their conditions. The guidance and counseling services should also be focused on vocational and employment opportunities and skills for meaningful leisure.

The more severe the visual impairment, the more orientation and mobility instruction will be needed. The range of techniques vary greatly and the orientation and mobility specialist will determine how best to teach the students. An orientation and mobility instructor "should have a solid foundation and expertise in the areas of education of students with visual impairment and child growth and development. They should also demonstrate skills in human relations and communication" (British Columbia Ministry of Education, 2006, p. 75). For optimal benefits, orientation and mobility training should not be relegated only to the school environment; students with vision impairment need

to be able to safely and independently travel out in the community, giving them the opportunity for freedom and independence equal to their sighted peers (British Columbia Ministry of Education, 2006; Student Support Services, 2001).

2.4 Adaptations for pupils with visual impairments in regular schools

The American Foundation for the Blind (2005a, 2005b) and Pagliano (2005, 1998) state that much of the learning that occurs in regular schools relies on vision, putting students who are visually impaired at a disadvantage. In order to achieve learning outcomes in regular schools, the following must occur: adaptations to; instruction,   resources, assignment formats and classroom environment (Palmer, 2005). Teaching strategies and lesson delivery need to be diversified to enable students who are visually impaired to participate in learning (Palmer, 2005a; Student Support Services, 2001). Verbalizing all instructions in detailed form ensures that students comprehend the expectations of required assignments and projects (British Columbia Ministry of Education, 2008; Student Support Services, 2001). Breaking concepts into clear chunks is beneficial to facilitate learning for the visually impaired child (Palmer, 2005a).

The American Foundation for the Blind (2005a) and the British Columbia Ministry of Education (2008) state that students who are visually impaired may require individual instruction in order to understand what is expected of them. Visually impaired students may also benefit from pre-lesson instruction for more difficult concepts. According to Pagliano (2005), confirming instructions can assist in ensuring comprehension. Teachers therefore, need to allow these individuals to solve problems and complete tasks on their own (Pagliano, 2005; Student Support Services, 2001). Pagliano (2005), further states that students with vision impairment benefit from doing tasks on their own via "learning

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by doing" (p. 351); they are guided through the actions until they have gained expertise of the task and that they must be "explicitly taught how to make connections between parts and the whole". Pagliano (2005) again notes that students with vision impairment may also perform "kinesthetic re-enactments" (p. 352), where by placing their hands over the teachers, they observe and learn by touch. Allowing extra time to complete tasks and tests is another effective teaching strategy that helps to ensure that these students are able to meet learning outcomes (British Columbia

Ministry of Education, 2006).

The use of real and concrete objects in terms of resources also works towards furthering comprehension (Pagliano, 2005, 1998; Palmer, 2005a; Special Needs Opportunity Window, 2005; Student Support Services, 2001). Using books-on-tape can also be beneficial for students with vision impairment (British Columbia Ministry of Education, 2008). According to Bishop (1997), to ensure that learning outcomes are met, classroom teachers should access a myriad of resources to support students with vision impairment. Special materials and vision aids, such as tactile objects, tactile maps, tactile globes, Crammer abacus, and braille rulers help to ensure that these individuals are able to successfully access learning. Palmer (2005a) states that diagrams and maps must be adapted to suitable formats, such as braille or tactile. The use of modified games may also be used to foster achievement. Using adaptive materials can greatly increase students with vision impairments' ability to achieve learning outcomes (Bishop, 1997; Pagliano, 2005; Palmer, 2005a).

According to Hatlen (1997), in order to meet regular curriculum learning outcomes, students with vision impairment need to be taught skills covered in the expanded core

curriculum, such as accessing assistive technology and social skill instruction. Assistive technology, both low technology and high technology, helps to improve the basic skills of students with vision impairment, giving them the ability to access literature, attain information and complete assignments and tests (Allan &Stiteley, 2006). Technology allows these students to achieve learning outcomes in a variety of ways. Non-electronic equipment can be very helpful with completing course work

(Student Support Services, 2001).

For example, students with vision impairment who can write can use dark-lined paper to lessen any eyestrain associated with written work (Allan &Stiteley, 2006). Reading stands allow students to have their books as close to themselves as needed, without dealing with muscle fatigue. Aids for accomplishing mathematics tasks, such as braille rulers, abacus and braille protractors, help students to meet prescribed mathematics learning goals (Student Support Services, 2001). A slate and stylus enable students with vision impairment to produce work in braille, allowing them to take notes in class (Student Support Services, 2001). Electronic technological devices are excellent tools students can use to gain access to the core curriculum. Using other assistive technology, such as speech synthesis and braille translation software, give students with vision impairment a myriad of opportunities, such as using a word processor and accessing the internet, to access prescribed learning outcomes (Wormsley& Baker, 1994). Assistive technology, in all its forms, allows students with vision impairment to achieve the same learning outcomes expected of their sighted peers (Glodowski, 2006).

For students with visual impairment to complete assigned work and meet learning objectives, assignments and textbooks need to be adapted into an appropriate format.

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Pagliano (2005) states that expecting these young people to transcribe work from an overhead or a blackboard will result in visual fatigue. Depending upon the degree of their visual impairment, students must be given copies of their work in appropriate formats, such as braille or large print. If hard copies are not available, work on the blackboard and any other visual presentation must always be read aloud (Special Needs Opportunity Window, 2005). Assignments and textbooks in the appropriate format enable students with vision impairment to achieve learning goals (British Columbia

Ministry of Education, 2008).

It is also necessary to consider the classroom environment of students with visual impairment to help with successfully achieving positive learning outcomes (Allan, 2002). Students with vision impairment need preferential seating so they can have appropriate access to the blackboard, windows, and overhead screens when needed (Student Support Services, 2001). Adjusting lighting in order to help complete assigned work is an important consideration, which can be achieved by adding extra lighting or dimming the lights, depending on the needs of the students (Palmer, 2005). Indeed, modifying the classroom environment maximizes the opportunity for these students to learn alongside their classmates. Individuals with vision impairment must be taught specific skills that enable them to access learning and compete with their sighted peers on a level playing field (Bishop, 1997).

UNESCO (1994) and Student Support Services (2001) note that, ensuring social inclusion demands commitment from the entire school community. Evidence shows that students who are visually impaired do not develop social competence via observation and the ability to read non-verbal cues. In order for these students to meet social learning

outcomes, training is vital (Celeste, 2007). Positive social skill training is critical to the development of social competence. Social interaction skills, such as establishing and maintaining relationships, regulating emotions and understanding emotional cues need to be directly taught (Celeste, 2007). Students with vision impairment need instruction in understanding other people's behaviour, comprehending their own behaviour, problem solving and conflict resolution (Palmer 1998).

Educating sighted peers about the effects of vision impairment can help them understand the differences and obstacles that students with vision impairment face, which can assist in promoting inclusion (Bishop, 1997; MacCuspie, 1996; Pagliano, 1998). Feedback, from both teachers and sighted students, regarding unsuitable behaviour is necessary for students with vision impairment to evaluate their inappropriate behaviour and thus amend their actions (Peavey &Leff, 2002). Students who are visually impaired also need to understand the concept of personal space, so as not to make others feel uneasy in their presence. Ongoing intervention is required to ensure that appropriate behaviours are continually reinforced (Celeste, 2007).

According to Scholl (1986) and Lowenfeld (1980), modifications for children with visual impairment should include learning strategies and instructional materials and equipment in order to enable children access information readily. Generally, teaching and learning materials for children with visual impairments must have some distinguishable characteristics which contain accurate information and must be appropriate to the lesson and the age of the children involved (Ocloo, 2011).

According to Ocloo (2001), using adequate and age appropriate teaching or instructional materials as play materials help the child with visual impairment to develop good muscle tone, manipulative skills and increase the child's attention span. Ocloo further stipulated that, children with visual impairments who do not access useful instructional materials tend to develop emotional problems, have problems with social adjustment and self-expression. This in most cases can lead to the development of blindism and verbalization which is prevalent among those children. Thus interaction with teaching or instructional materials builds a store of knowledge of information and develops the curiosity to learn.

The literature indicates that, support services and adaptations for pupils with visual impairment in regular schools are worthy goals and help to meet their individual learning needs. Many factors are required for successful support and adaptation, yet many barriers exist that often prevent a positive support and adaptation for pupils with visual impairment. From the review of the literature, it was evident that organizations such as UNESCO, and government education sites, such as the British Columbia

Ministry of Education and the Newfoundland and Labrador Department of Education, all fully support the related services and adaptations in regular schools. However, organizations and people who work directly with students with visual impairment, such as the American Foundation for the Blind and the superintendent of the TSBVI, Phil Hatlen, tend to view support services and adaptations in regular schools as an idealistic. Since the visual impairment experts question the validity of it, one must therefore, take notice and continue with further research on reducing the barriers in order to improve inclusion for students with visual impairment.

2.5 Summary

The literature review has pointed out a number of issues on individuals with visual impairments, learning characteristics of pupils with visual impairments, support services for pupils with visual impairments in inclusive classrooms and adaptations for pupils with visual impairments in regular schools. In all these, the review was looking at how to create an enabling environment for pupils with visual impairment in order for them to participate meaningfully with their peers. In achieving this, the review proposes that there is the need to provide support services and adaptations for pupils with visual impairments in the regular schools. It is however obvious that most regular schools lack these services and adaptations for an effective inclusion and this study will help bridge the gap.
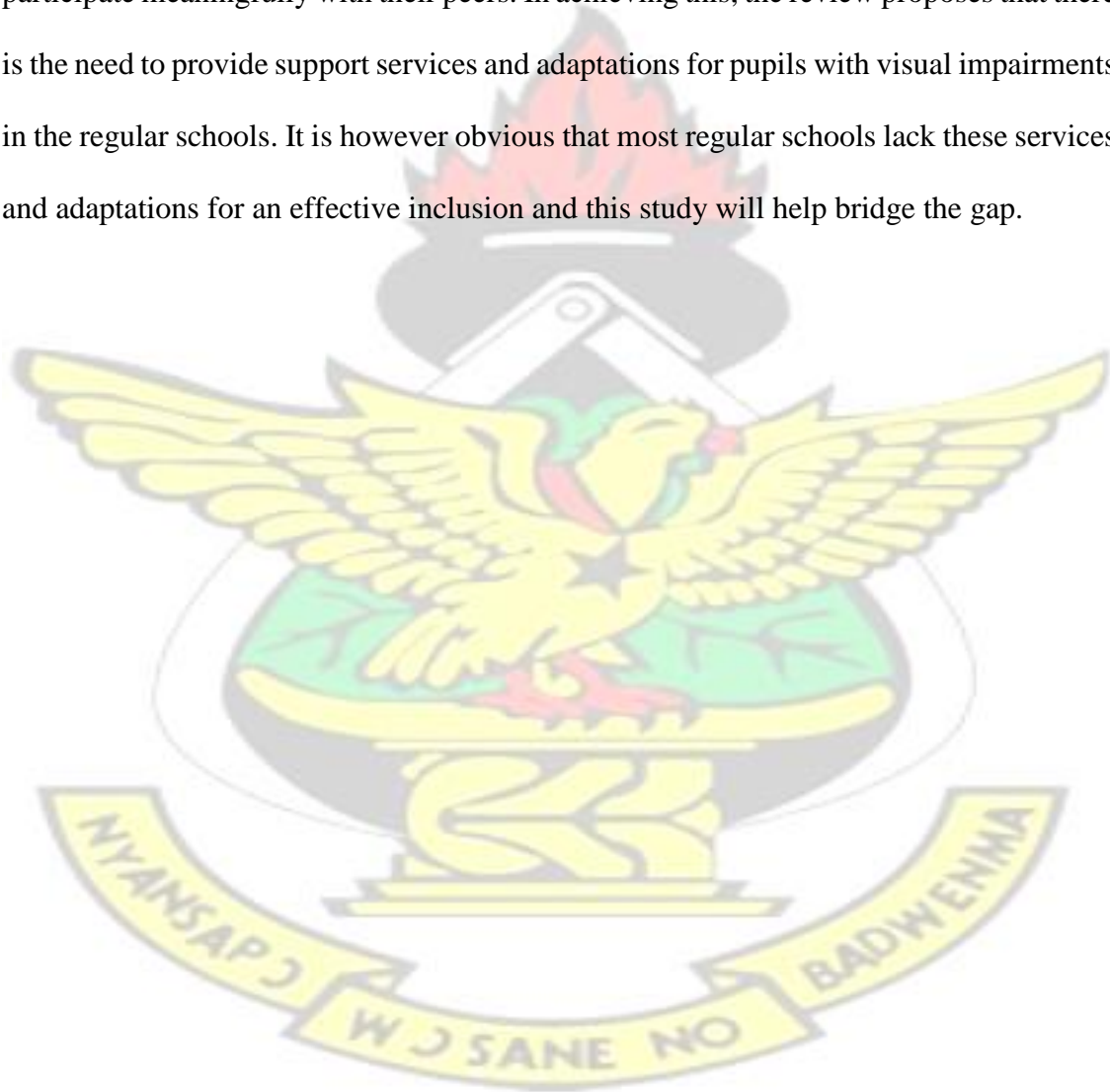
CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents a description of methods employed in the study. It includes description of the study area, population, study design, sample and sample size, data collection techniques and methods of data analysis.

3.1 Research Strategy

The clarification of the orientation of the researcher to the conduct of research (Bryman, 2004), as cited by Baiden (2006) is of paramount essence. The research strategy dwells on how the research objectives are questioned. The three main strategies are quantitative, qualitative, and triangulation (Baiden, 2006). The choice to follow any particular strategy depends on the purpose of the study, the type and availability of information for the research (Naoum, 2002), cited by Baiden (2006).

This research follows a qualitative strategy.

3.2 Research Design

Research design deals with the framework for data collection and analysis; the structure that guides the execution of the technique for collection and analysis of data, which provides the connection between empirical data and its conclusions in a logical sequence to the initial research question of the study (Bryman, 2004; Yin 2003) cited by Baiden (2006). Research design includes experimental, survey, action research and case study (Blismas, 2001 cited by Baiden, 2006).

This research adopted a case study design. The case study approach is now widely used in the social sciences, and there is a growing confidence in its applicability as "a rigorous research strategy in its own right" (Hartley, 2004: 323). Case studies comprise a single unit of analysis, based upon depth that is both holistic and exhaustive (Ball, 1996), and which retains the meaningful characteristics of realistic events. Thus a case study, as defined by Yin (2003), is an empirical inquiry that investigates a contemporary phenomenon within its real-life context. In this present study, the case study was justified, as attempting to assess the support services and adaptation for pupils with visual Impairments, which would be difficult without the contextual picture provided by the case study approach. The study therefore limits its scope to investigating the phenomena of support services and adaptation for pupils with visual impairments at the Bechem St. Joseph's Practice Inclusive Basic School in the Brong

Ahafo Region of Ghana.

3.3 Population of the Study

The target population of the current study was all the entire teaching staff of the pupils with visual impairment of the Bechem St. Joseph's Practice Basic Inclusive School. The total number of the teaching staff at the time of the study was fourteen (14) teachers.

3.4 Sample Size and Sampling Technique

The total sample size of the current study was fourteen (14) teachers of the pupils with visual impairment at Bechem St. Joseph's Practice Basic Inclusive School. The appropriateness of this sample size is justified by the deVaus, (2002) sample size proportion formula approach which has been used to calculate the appropriate sample size as shown below:

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$$n = \dfrac{N}{1 + N e^2} \; ; \quad n = \dfrac{14}{1 + 14\,0.05^2} \; ; \quad n = \dfrac{14}{1.035} \; ; \quad n = 13.53 \approx 14$$

where;

n $=$ Sample size

N $=$ Population e $=$
Confidence Level

To obtain access to the fourteen (14) teachers, a sample frame, which is a list containing information regarding all the teachers of the visually impaired pupils of the Bechem St. Joseph's Practice Basic Inclusive School was first inquired from the head teacher of the school. With this information, the simple random sampling by balloting techniques was appropriate. However, since the study needed to sample all the members of the population, the technique was ignored. The researcher therefore, contacted all the teachers of the school and informed them of the study and its necessity to the development of the school.

3.5 Methods for Data Collection

The researcher administered questionnaires to teachers and conducted a documentary analysis. According to Dempsey and Dempsey (2000) a questionnaire is a paper and pencil data collection instrument filled in by respondents for the purpose of the research. The questionnaires were structured using the research objectives and was selfadministered to the various respondents. The format of the questionnaires was guided by considerations of appeal to respondents and ease of reading and supplying the required data so that research participant's time were not wasted during the data collection. The questionnaires were designed to include; close ended questions and scaled response

questions. The advantage of the inclusion of closed-ended questions was that, they are fast and easy to analyze. The likert response scale was employed to measure the strength or intensity of respondent's opinion. An attempt was made to keep the questions in simple language in order to minimize potential errors from respondents. Similarly, the number of questions in each set was kept low as much as possible to encourage respondents to take their time in answering the questions.

The content of the questionnaire was principally obtained from the reviewed literature. The questionnaire was structured into four sections, which included demographic background of the respondents, the environmental adaptation to enhance the participation of the visually impaired, the curriculum or instructional adaptation, and the participation of the visually impaired in learning.

The participants completed and returned questionnaires to the researcher. The questionnaire enabled the researcher to achieve a high response rate. It provided a relatively simple and straight forward approach to the study of teachers' perception of the adaptation of the pupils with visual impairment to the school environment and structure. The questionnaire was efficient at getting information from many people in a short time and at relatively low cost. It also allowed anonymity which encouraged frankness in responses on sensitive issues (Robson, 2002) such as the instructional adaptations employed by teachers to assist pupils with visual impairment to participate successfully in learning. Questions are useful in that they can generate frequencies amenable to statistical treatment and analysis (Hayford, 2013).

3.6 Pre-testing of Questionnaire

To ensure reliability and validity of questionnaires, the researcher pre-tested the designed questionnaires on four (4) samples from the Bechem School for the Deaf, which has a unit for pupils with visual impairment. The participants were asked to fill out the initial surveys based on their perception and opinion. The initial survey took about 10 to 20 minutes to complete. Further discussion of the questionnaire was held with two lecturers in the area of special education. The instruction and some questions were not clear. The questionnaire was modified and redesigned based on the pre-test, and the final version of the questionnaire was completed after a review by the researcher.

3.7 Distribution and Collection of Questionnaire

With regards to the administration of the questionnaires, the researcher first obtained a permit from the head of the Bechem St. Joseph's Practice Basic Inclusive School and the heads of the various departments requesting permission to conduct the research in the institution. It is worth noting here that the reply from the head of the institution took such a long time, and the researcher was forced to follow up with telephone calls and by paying visits. The approval was finally given for the conduct of the research. It should be emphasized that for the pupils with visual impairment, it was necessary for the researcher to read to them and tick the appropriate choices based on their responses. After the authorization, it took three weeks to get all the questionnaires administered to the sampled teachers of the school.

3.8 Method of Data Analysis

Most of the questionnaires were pre-coded before administration to facilitate easy tabulation and analysis. Responses were cross-checked on the field as a quality check on the data. Zikmund (2003) suggests that data processing begins with the editing and coding of the data. Coded data on responses were fed into the computer based programme, statistical package for social sciences (SPSS), version 17 for display and analysis. The programme generated figures, frequencies, percentages and tables to show results of the data analysis. Descriptive analysis conducted involved the use of tabular analysis (percentages and frequencies), and mean values for discussing the key variables involved in the study. The questionnaire was basically designed using the

'Likert Scaling type'.

3.9 Ethical Consideration

An introductory letter from the School of Medical Science, department of Community Health, KNUST, was sent to the Headmaster of the Bechem St. Joseph's Practice Basic Inclusive School to seek for authorization to undertake the research study in the school. With regards to the administration of the questionnaires, the researcher first obtained a permit from the head of the Bechem St. Joseph's Practice Basic Inclusive School and the heads of the various departments requesting permission to conduct the research in the institution. It is worth noting here that the reply from the head of the institution took such a long time, and the researcher was forced to follow up with telephone calls and by paying visits. The approval was finally given for the conduct of the research. Furthermore, the researcher disclosed to the respondents that the study is purely meant to satisfy an academic requirement and not for any other reason. Respondents were not required to give their names in the interview to ensure confidentiality and participation.

3.10 Validity and Reliability of the Study

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

CHAPTER FOUR

PRESENTATION OF ANALYSIS AND DISCUSSION OF RESULTS

4.1 Introduction

This chapter provides the analysis and discussion of data collected for the study. The following were the research questions which were raised to guide the study:

1. What environmental adaptations has the school made to enhance access to pupils with visual impairment?

2. What types of personnel has the school recruited to support pupils with visual impairment to participate successfully in learning?

3. What types of resources are available for the pupils with visual impairment?

4. What types of curriculum and instructional adaptations have teachers made to promote learning among pupils with visual impairment in the school?

4.2 Demographic data of Respondents

The demographic data of the teachers who participated in the study have been discussed in this section. Table 4.1 presents the demographic information of the teachers.

Table 4.1: Demographic Characteristics of Respondents

Demographic Data	Frequency	Percent
Gender		
Male	12	85.7
Female	2	14.3
Age of respondents		
Less than 20 years	0	0.0
21-25 years	0	0.0
26-30 years	3	21.4
31-40 years	5	35.7
41-50 years	6	42.9

51+ years	0	0.0
Educational Qualification		
Diploma	2	14.3
Post-Diploma	8	57.1
Post-Graduate	4	28.6
Others	0	0.0
Teaching Experience 1-5 years	0	0.0
6-10 years	1	7.1
11-15 years	5	35.7
16+ years	8	57.1

Source: Field Survey, 2012

Percentages are in parentheses

Table 4.1 shows that 85.7% of the respondents were male teachers while 14.3% were female teachers. Thus, there were more male participants in the study than female participants. Also, the table (4.1) reveals that 42.9% of the respondents were aged 41-50 years, 35.7% of them were 31-40 years of age. None of the participants of the study was less than 26 years of age. Thus, the participants of the study were largely middle aged. In terms of the educational qualification of the participants of the study, the table (4.1) shows that 57.1% have Post-diploma certificate, 28.6% have Post-graduate certificate and 14.3% have diploma certificate. With regard to the teaching experience of the participating teachers, table (4.1) shows that 57.1% have over 16 years of teaching experience, 35.7% have 11 to 15 years of teaching experience, and 7.1% have

6 to 10 years of teaching experience. None of the participants of the study has less than 5 years of teaching experience. Thus, the participating teachers have been in the teaching profession for very long.

It is therefore believed that with the educational status and teaching experience, the respondents were in appropriate position to provide in-depth information regarding the support services and the adaptation for pupils with visual impairment for the study.

4.3 Environmental Adaptations for Accessibility

This section provides data on the environmental adaptation at Bechem St. Joseph's Practice Basic Inclusive School in the Brong Ahafo Region. Table 4.2 highlights data from the respondents.

Table 4.2: Environmental Adaptation to Improve Visually Impaired Accessibility

Statements	1	2	3	4	5
Buildings in the school support pupils with visual impairments	0(0.0)	0(0.0)	12(85.7)	2(14.2)	0(0.0)
Furniture arrangement in the classrooms prevent pupils from bumping into each other	0(0.0)	0(0.0)	11(78.6)	2(14.2)	1(7.1)
The environment is well signed to support free movement of pupils with visual impairment	1(7.1)	13(92.9)	0(0.0)	0(0.0)	0(0.0)
The layouts of the school compound support the mobility of pupils with visual impairment	2(14.2)	11(78.6)	1(7.1)	0(0.0)	0(0.0)
The school's playgrounds allow the visually impaired pupils to meet and play with the sighted ones	2(14.2)	12(85.7)	1(7.1)	0(0.0)	0(0.0)

Rank: [5-Excellent, 4-Very Good, 3-Good, 2-Poor, 1-Very Poor]
Percentages are in Parentheses
Source: Field Survey, 2012

From Table 4.2, out of the total participants of the study, 85.7% were of the opinion that the buildings in the school favoured the pupils with visual impairment whiles 14.2% believed they were very good to support the pupils with visual impairment. Consistent with this finding is the Tools for Schools (1998) which states that the adaptive

learning environment model has been quite successful in the sense that, in schools where this model component has been adopted, data are collected on degree of implementation, classroom process and student outcomes such as student achievement and student attitudes about their schools and learning experience (Tools for schools, 1998).

Also, the table (4.2) shows that 78.6% of the participants of the study regarded as good the furniture arrangement in the classroom, in that it prevented pupils from bumping into each other, whereas 14.2% of the participants also deemed the furniture arrangement in the classrooms as very good. This finding is consistent with existing literature that indicates that a general education teacher with a visually impaired child in his or her class has to put in place the necessary facilities in order to make the environment more conducive for all the pupils in the class (Ocloo, 2011).

The design of the environment was however, deemed poor in terms of supporting free movement of pupils with visual impairment by 92.9% of the participants of the study, whiles 7.1% regarded it as very poor. This finding is therefore inconsistent with existing literature that states that inclusive education generally involves the reform and restructuring of the school as a whole (Banku Obi, 2010).

The layouts of the school compound was also deemed poor in terms of supporting the mobility of the pupils with visual impairment by 78.6% of the participants, 14.2% deemed the layout of the school very poor, whereas 7.1% regarded the layout as good. This situation therefore could be a barrier against the pilot inclusive education system in progress since Avoke and Hayford (2000) in their study indicates that some of the major

problems relating to inclusive school implementation are difficulties inherent in restructuring.

Furthermore, the table (4.2) shows that the school's playgrounds was regarded as poor by 85.7% of the participants in terms of allowing the pupils with visual impairment to meet and play with the sighted ones, 14.2% of the participants regarded the school's playground as very poor, whereas 7.1% deemed the playgrounds of the school as good. This finding is contrary to existing literature that states that in adapting the school environment for persons with disabilities and more especially pupils with visual impairment, physical education also becomes an important aspect which should be considered (Ocloo, 2003).

4.4 Curriculum or Instructional Adaptations

This section of the study assesses the level to which the available curriculum or instructional adaptation of the Bechem St. Joseph's Practice Basic Inclusive School supports the visually impaired to enhance their learning activities. Table 4.3 therefore, highlights data from the respondents.

Table 4.3: Curriculum or Institutional Adaptation to Enhance Visually Impaired Accessibility

Statements	Yes	No
Adaptations are done in the curriculum to suit pupils with visual impairment	2(14.3)	12(85.7)
The use of additional instructional support such as braille writing, transcription of class work and enlargement of prints are included in the instructional adaptations	13(92.9)	1(7.1)
Teaching is related to the experience of the pupils with visual impairment	12(85.7)	2(14.3)
Additional support services for pupils with visual impairment are continuous	12(85.7)	2(14.3)

There is the use of computers with adapted software packages to enhance success in the school curriculum for the pupils with visual impairment	1(7.1)	13(92.9)
The method of child centered learning is adopted by teachers in the school	13(92.9)	1(7.1)

Percentages are in Parentheses
Source: Field Survey, 2012

From Table 4.3, out of the total participating teachers, the majority (85.7%) disagreed that adaptations are done in the curriculum to suit pupils with visual impairment in the school whereas 14.3% agreed. This finding is consistent with the studies of Hayford (2007) and Brew (2011). Their studies showed that basic school teachers were not empowered to adapt the national curriculum to suit all learners including those with disabilities or special educational needs, even though majority of the sighted pupils interviewed reportedly stated that adaptations were done in the curriculum to suit pupils with visual impairments. The table (4.3) also shows that 92.9% of the participating teachers agreed to the use of additional instructional support such as braille writing, transcription of class work and enlargement of prints are included in the instructional adaptations, whereas 7.1% disagreed. This finding is consistent with the study of Barton (1997) that showed that inclusive education should be about listening to unfamiliar voices, being open, empowering all members and importantly, it is about celebrating differences in dignified ways and aimed at not leaving anyone out of school.

Table 4.3 shows that 85.7% of the participating teachers agreed that the teaching activities are related to the experience of the pupils with visual impairment, whiles 14.3% of the participants disagreed. This finding however is inconsistent with literature that showed that unlike curriculum designed for the 1987 educational reforms, the curriculum

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which has emerged from the review reminds teachers of the presence of learners with different needs in the class and urges them to make provisions for such learners (Hayford, 2013). However, the table (4.3) shows that 85.7% of the participating teachers agreed that the additional support services for pupils with visual impairment are continuous, whereas 14.3% disagreed. This finding is consistent with the study of Hoover and Patton (1997) who suggested that clarification of learning goals, presenting tasks in steps modeling required procedures and the continuous monitoring of student understanding in order to adjust teaching style if necessary, are required to ensure that all learners including those with disabilities or special educational needs participate successfully in learning.

The table (4.3) also shows that the majority (92.9%) of the participating teachers disagreed that there is the use of computers with adapted software packages to enhance success in the school curriculum for the pupils with visual impairment, whereas 7.1% of the participating teachers agreed. Thus, this presupposes that the Bechem St.
Joseph's Practice Basic Inclusive School is yet to consider computerized software packages for pupils with visual impairment. The majority (92.9%) of the participating teachers agreed that a method of child centered learning is adopted by teachers in the school, whereas 7.1% of the participating teachers disagreed with the assertion.

4.5 Resources Available For Pupils with Visual Impairment

This section provides data on the amount of resources devoted to improving the learning activities of pupils with visual impairment. Table 4.4 highlights data from the respondents.

Table 4.4: Resources Available for Improving Visually Impaired Pupil's Accessibility

Statements	Yes	No
There are adequate writing materials for the pupils with visual impairment	13(92.9)	1(7.1)
There are resource personnel for the pupils with visual impairment	13(92.9)	1(7.1)
There is a resource room for the pupils with visual impairment	1(7.1)	13(92.9)
The school has a well-equipped resource room for the pupils with visual impairment	0(0.0)	14(100.0)
The school has adequate braille version of reading materials for the pupils with visual impairment	1(7.1)	13(92.9)

Percentages are in Parentheses
Source: Field Survey, 2012

From Table 4.4, 92.9% of the participating teachers of the study agreed that there are adequate writing materials for the pupils with visual impairment, whiles 7.1% of the participating teachers disagreed. This implies that the Bechem St. Joseph's Practice Basic Inclusive School has adequate writing materials to aid the learning activities of the pupils with visual impairment. This finding is consistent with a study of UNESCO

(1994) that showed that different levels of resources such as funding, teaching and learning materials are essential in the mainstream when learners with special educational needs are included.

Table 4.4 shows that 92.9% of the participating teachers of the study agreed that there are resource personnel for the pupils with visual impairment, whereas 7.1% of the participating teachers believed otherwise. This finding is consistent with a study conducted in Ghana by Ocloo (2011) that showed that different levels of resource personnel are available in schools with children requiring special attention. Thus the

integration of children with low vision in Ghana uses the itinerant teaching approach in the basic school system in only six districts out of the one hundred and seventy Metropolitan Municipal and District Assemblies (Ocloo, 2011).

However, the table (4.4) shows that 92.9% of the participants of the study disagreed that there is a resource room for the pupils with visual impairment, whereas 7.1% of the participating teachers had different opinion. However, existing literature indicates that in order for pupils with disabilities to learn together with their peers in a meaningful and fruitful way, a support system must be in place. This support system makes sure that there is equal access for all students to all the learning resources available in the school (UNESCO 2009).

From Table 4.4, all the participating teachers (100.0%) agreed that the Bechem St. Joseph's Practice Basic Inclusive School is not well equipped with resource room for the pupils with visual impairment. These were in line with the findings of Scholl (1986) and Lowenfeld (1980) who stated in their studies that modifications for children with visual impairment should include learning strategies and instructional materials and equipment in order to enable children access information readily. The table (4.4) also shows that 92.9% disagreed that the school has adequate braille version of reading materials for the pupils with visual impairment, whereas 7.1% of the participating teachers agreed that the school has adequate braille version of reading materials for the pupils with visual impairment.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND POLICY

RECOMMENDATIONS

This chapter mainly focused on key findings of the research problem analysis, measures to be taken in order to improve the sector and conclusion of the study. The recommendations constitute both policy level interventions and operational ones.

5.1 Summary of Findings

This research was set to find answers to the following questions: 1) What environmental adaptations has the school made to enhance access to pupils with visual impairment, 2) What types of personnel has the school recruited to support pupils with visual impairment to successfully participate in learning, 3) What type of resources are available for the pupils with visual impairment, and 4) What type of curriculum and instructional adaptations has the school made to enhance the learning activities of the visually impaired. Rigorous field works were conducted and below are the main findings:

5.1.1 Environmental Adaptation

The study revealed that the buildings of the Bechem St. Joseph's Practice Basic Inclusive School in the Brong Ahafo fairly support pupils with visual impairments. The furniture arrangement in the classrooms is believed to prevent pupils from bumping into each other. The school environment is also believed not to be well signed to support free movement of pupils with visual impairments. The layout of the school compound does not support the mobility of pupils with visual impairment, and the school playground also

does not allow the pupils with visual impairment to meet and play with the sighted pupils in the school.

5.1.2 Curriculum or Instructional Adaptation

The Bechem St. Joseph's Practice Basic Inclusive School does not have adaptation in the curriculum to suit pupils with visual impairment. However, there is also the use of additional instructional support such as braille writing, transcription of class work and enlargement of prints. Teaching in the school is related to the experience of the pupils with visual impairment. The Bechem St. Joseph's Practice Basic Inclusive School has additional support services for pupils with visual impairment. The method of child centered learning is adopted by teachers in the school. However, there is absence of the use of computers with adapted software packages to enhance success in the school curriculum for the pupils with visual impairment.

5.1.3 Resources Available For Pupils with Visual Impairment

From the study, it was revealed that there are adequate writing materials for the pupils with visual impairments in the Bechem St. Joseph's Practice Basic Inclusive School. The school also has resource personnel for the pupils with visual impairment. However, the school does not have a resource room or a well-equipped resource room, and neither does it have adequate braille version of reading materials for the pupils with visual impairment in the Bechem St. Joseph's Practice Basic Inclusive School.

5.2 Conclusions

From the study, it can be concluded that the Bechem St. Joseph's Practice Basic Inclusive School has an environment that is partially adaptable to the visually impaired.

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The school has buildings and furniture arrangement that support the easy learning activities of the visually impaired pupils. However, the environment is not conditioned to support free movement of the visually impaired. The layout of the school does not support mobility and neither does the playground allow meeting of the visually impaired and the sighted pupils in the school. There are also lapses in the curriculum in terms of supporting the learning activities of the visually impaired. The curriculum is bereft of adaptation plans. The curriculum does not allow the use of computers with adapted software packages to enhance the learning experiences of the visually impaired. However, adequate writing materials together with the needed resource persons have been devoted to enhancing the learning activities of the visually impaired in the Bechem St. Joseph's Practice Basic Inclusive School. It can therefore be concluded that there is still some gap to fill in order to fulfill demands and ensure success of the inclusive school in Ghana.

5.3 Policy 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:

5.3.1 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 build an adaptable environment 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.

5.3.2 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.

5.3.3 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.

5.3.4 Provision of the Needed Technologies

There is the need to provide schools implementing the policy of inclusive education with modern visual and hearing technologies to enhance their capacity to fully achieve the requirements of inclusive educational system. Evidently, the Bechem St. Joseph Practice Basic Inclusive School 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.

5.4 Suggestions for Further Research

The scope of the current study was limited to only the Bechem St. Joseph's Practice Basic Inclusive School in the Brong Ahafo Region of Ghana. This therefore limits the reliability, validity and generalization ability of the study. The study therefore recommends any further study to include other inclusive schools and even expand the sample size. Increase of sample size would help reduce perception biases as well. Further studies should be conducted to ascertain how issues militating against achieving the Ministry of Education Strategic Plan (2003-2015) could be enhanced to include all persons with disability in the mainstream in the near future.
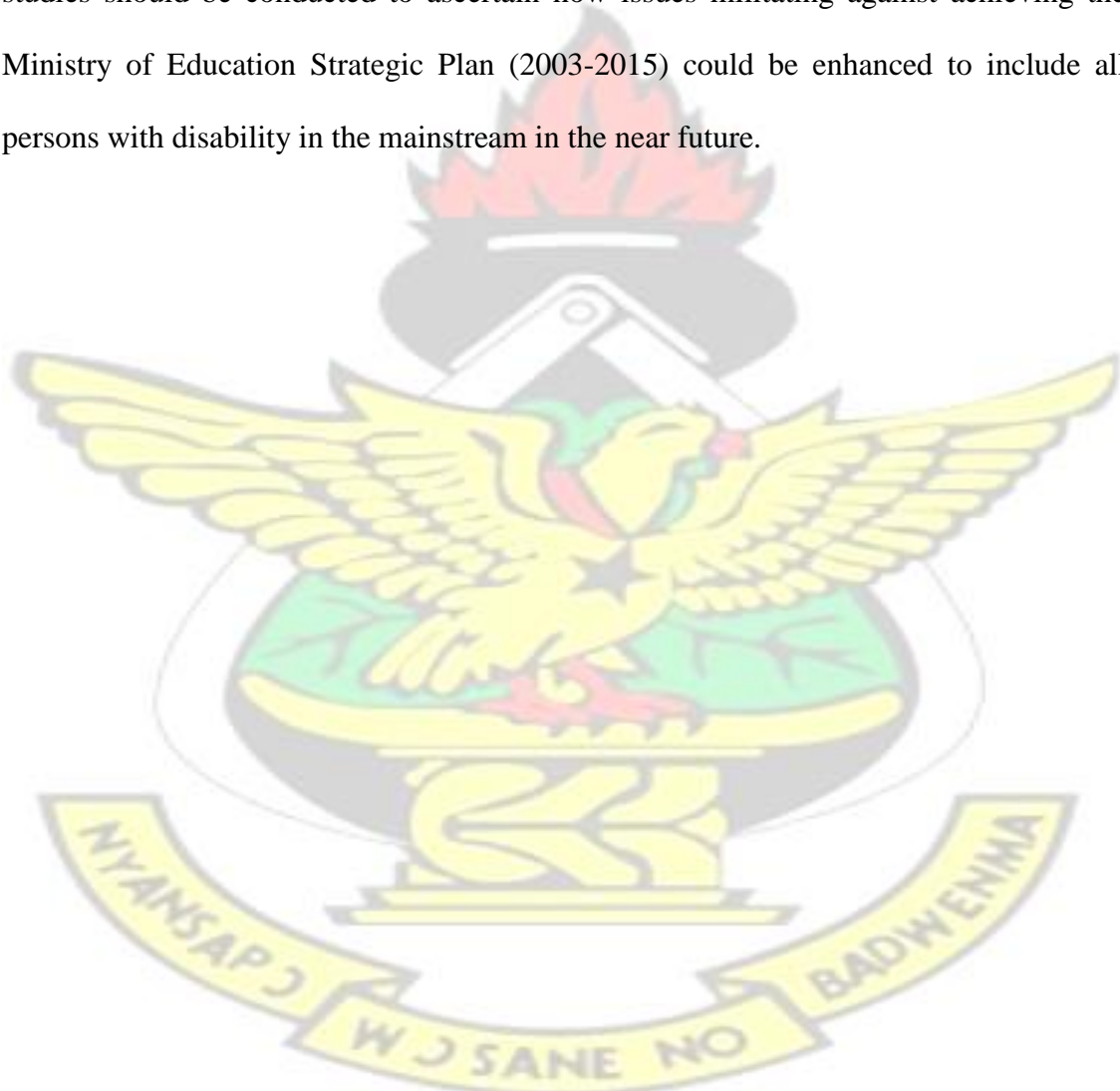
REFERENCES

Avoke, M. (2008). *Introduction to special education for universities and colleges*. Accra North: The City Publishers.

Avoke, M. K. &Avoke, S. K. (2004). *Inclusion, rehabilitation and transition services in special education*. Dansoman Estates, Accra: Shine and light printers.

Baiden, B. K., (2006). "Framework for the Integration of the Project Delivery Team" , Unpublished Thesis (PHD) Loughborough University, United KingdomBeyea S. and Nichll, L. H. (1998) Writing an Integrative review*, AORN Journal* April, 1998.

Ball, M. (1996). *"Visual Methods in Social Research."* Sage London.

Banku Obi, F. (2010). *Essentials of special educational needs*. Nigeria: Klentin Printers Publishers.

Burns, N., & Grove, S. K. (2001). *Understanding Nursing Research.* (2nd edn.). Philadelphia: W.B. Saunders Company.

Creswell, J. W., & Clark, V. L. P. (2007).*Designing and conducting mixed methods research*. Thousand Oaks, California: Sage Publications, Inc.

De Vaus, D. (2001).Research design in social research. Sage Publications Ltd., London.

De Vos, A. S., Strydom, H., Fouche, C. B., & Delport, C. S. L. (1998).*Research at Grassroots for the Social Sciences and Human Service Professions. (*3rd ed.).Pretoria: Van Schaik.

Fadhley, S. A., (1991), "A Study of Project Finance Banking with Special reference to the Determinants of Investment Strategy", *unpublished Doctoral Thesis*, submitted to the Loughborough University.

Ghana Disability Act 2006 (Act 715 section 16-21). Accra: GPC/Assembly Press.

Hardman, L. M., Drew, C. J., Egan, M. W. & Wolf, B. (1990).Human Exceptionality: society, school and family. *International Journal Association*, 4(23), 25-78.

Hartley, J. (2004). Case study research.In C. Casell& G. Symon (Eds.), *Essential guide to qualitative methods in organizational research*. London: Sage Publications, Ontario, p.76.

Hayford, S. K. (2013). Special Educational Needs and Quality Education for All. Dansoman, Accra: Salt and Light printers.
Inclusion international 2004.

Kirk, S. A., Gallagher, J. J. & Anastasiow, N. J. (1993).Educating Exceptional children. Boston: Houghton Mifflin Company.

Meyen, E. L. (1996). *Exceptional children in Today's schools.* California: Love publishing company.

Miles, M. B. & Huberman, A. M. (1994), *Qualitative Data Analysis: An Expanded Sourcebook*, (2nd ed). California: Sage Publications,

Mintzberg, H. (1979). 'An emerging strategy of direct research'.*Administrative Science Quarterly*, 24, 105–16.

Ocloo, M. A. (2011). Effective education for persons with visual impairments in Ghana. Tema: Distinctive Publishing Limited.

Ocloo, M. A., Morttey, D. B. & Boison, C. (2005). Comprehensive study notes on special education. Winneba: Geowillie Publications.

Okyere, B. A & Adams, J. S. (2003). Introduction to special Education: An African perspective. Accra: Adwinsa Publications.

Patton, M. Q., (1990), *Qualitative Evaluation and Research Methods*, (2nd edn.), Sage: Newbury Park.

Peat, M. (1997). Community Based Rehabilitation. Philadelphia: WB Saunders Co.

Pedhazur, E. J., & Schmelkin, L. P. (1991). *Measurement, design and analysis: An integrated approach*. Hillsdale, NJ: Erlbaum.

Polit, D. F., & Hungler, B. P. (1999) *Nursing Research: Principles and Methods* (6th edn). Philadelphia: J.B. Lippincott.

Polit, D. F., Beck, C. T., & Hungler, B. P. (2001). *Essentials of Nursing Research: Methods, Appraisal, and Utilization* (5th edn). Philadelphia: Lippincott.

Quarterly Newsletter by Organizations of persons with disabilities volume 2 (January – December 2004)l.

Robson, C. (2002). *Real World Research*. (2nd Edn.). Oxford: Blackwell Publishers Limited.

Saunders, M., Lewis, P. & Thornhill, A. (2009). *Research Methods for Business Student,* (5th edn.). Edinburgh: Prentice Hall.

Saunders, M., Lewis, P. & Thornhill, A. (2007). *Research Methods for Business Student* (5th edn). Edinburgh: Prentice Hall.

Constitution of the Republic of Ghana, (Article 25(1)).

The Daily Graphic (September 22, 2014) p.28.

United Nations Educational, Scientific and Cultural Organization (June, 1994). The Salamanca Statement and Framework for Action on Special Needs Education: World Conference on Special Needs Education: Access and Quality. Ministry of Education and Science, Salamanca, Spain, p7-10.

United Nations Development program. Human development report 2003.

World Health Organization (2011). WHO/PBL eye examination record for children with blindness and low vision.

Yekple, Y. E. Deku, P., Hayford, S. A., Offei, Y. N., Mensah, A. K., Mamah, V. Y. & Acheampong, E. K. (2011). Special needs education; perspectives and insights: A practical guide for teachers. Tema: Distinctive Publishers.

Yin, R. (1994).*Case study research: Design and methods.* 2nd ed. Beverly Hills, CA: Sage Publishing, p.12.

Yin, R. K. (2003).*Case Study Research: Design and Methods*. Thousand Oaks, CA: Sage.

Zickmund, W. G. (2003). *Business research methods*. (7th edn.). Australia: Thomson, South-Western: Ohio.

APPENDIX A

This is a study being conducted by a graduate student reading MSc. Disability, Rehabilitation and Development from the School of Medical Sciences, Department of Community Health, KNUST, to ascertain Support Services and Adaptations at Bechem St. Joseph's Practice Basic Inclusive School. It is my hope that you will provide factual, honest and reliable answers to help bridge the gap between theory and practice. You will enjoy absolute anonymity and confidentiality as your name is not needed. Your responses to the questions will be used purely for academic purpose

<u>Section A:</u> **PERSONAL DATA OF TEACHERS**

Instruction: *Circle the letter(s) a, b, c, d or e, which corresponds with your preferred answer or write down the responses in the space provided where appropriate.*

1. Gender
    a.) Male
    b.) Female

2. Present Age
    a.) Less than 20years
    b.) 20 - 25 years
    c.) 25 – 30 years
    d.) Above 30 years

3. Educational qualification
    a.) Diploma
    b.) Post-Diploma
    c.) Post-Graduate
    d.) Other (Specify)

4. Teaching Experience
    1-5years
    6-10years
    11-15years
    16+ years

Section B: ENVIRONMENTAL ADAPTATIONS

Tick your level of agreement to the following items: 1 Excellent 2 Very Good 3 Good 4 Poor 5 Very Poor

Item	1	2	3	4	5

5. Buildings in the school support pupils with visual impairments…………………					
6. Furniture arrangement in the classrooms prevent pupils from bumping into each other………………………….					
7. The environment is well signed to support free movement of pupils with visual impairment …………………					
8. The layouts of the school compound support the mobility of pupils with visual impairment………..					
9. The school's playgrounds allow the visually impaired pupils to meet and play with the sighted ones……..					

Section C: CURRICULUM/INSTRUCTIONAL ADAPTATIONS

Answer Yes or No to the following:

Item	YES	NO
10. Adaptations are done in the curriculum to suit pupils with visual impairment		
11. The use of additional instructional support such as braille writing, transcription of class work and enlargement of prints are included in the instructional adaptations		
12. Teaching is related to the experience of the pupils with visual impairment.		

13. Additional support services for pupils with visual impairment are continuous.		
14. There is the use of computers with adapted software packages to enhance success in the school curriculum for the pupils with visual impairment		
15. The method of child centered learning is adopted by teachers in the school		

Section D: RESOURCES

Answer Yes or No to the following items

Item	YES	NO
16. There are adequate writing materials for the pupils with visual impairment		
17. There are resource personnel for the pupils with visual impairment		
18. There is a resource room for the pupils with visual impairment		
19. The school has a well equipped resource room for the pupils with visual impairment		
20. The school has adequate braille version of reading materials for the pupils with visual impairment		

KNUST

Appendix B

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF HEALTH SCIENCES

SCHOOL OF MEDICAL SCIENCES / KOMFO ANOKYE TEACHING HOSPITAL
COMMITTEE ON HUMAN RESEARCH, PUBLICATION AND ETHICS

Our Ref: CHRPE/AP/273/14   6th August, 2014.

Mr. Owusu-Amoako Justice
Department of Community Health
School of Medical Sciences
KNUST.

Dear Sir,

LETTER OF APPROVAL - PROTOCOL AMENDMENT

Old Title: · *"An Evaluation of St. Joseph's Practice Basic Inclusive*
                       School at Bechem in the Brong Ahafo Region."

New Title: *"Support Services and Adaptations for Pupils with Visual Impairment at Bechem St.*
                    Joseph's Practice Basic Inclusive School in the Brong Ahafo Region of Ghana."

Proposed Site: *St. Joseph's Practice Basic Inclusive School at Bechem,*
                   Tano South District of Brong Ahafo Reion.

The Committee has considered the ethical merit of your proposed amendment in respect of the new title above and approved it.

Thank you Sir, for your application.

Yours faithfully,

Rev. Prof. John Appiah-Poku.
Honorary Secretary
FOR: CHAIRMAN

Appendix C

GHANA EDUCATION SERVICE

In case of reply the date the number of this letter should be quoted

Our Ref GES/TSD/MS.46/V.8/202

Your Ref.

Tano South District Office
P. O. Box 48
Bechem -B A
Tel 03520-92029-92030

30th January, 20 12

REPUBLIC OF GHANA

PROJECT MANAGER
CENTRE FORE DISABILITY AND REHABILITAION STUDIES
DEPARTMENT OF COMMUNITY HEALTH
SCHOOL OF MEDICAL SCIENCES
KNUST
KUMASI

INTRODUCTION LETTER – MR. OWUSU-AMOAKO JUSTICE

I refer to your letter of 23rd January, 2012 on the above subject and I wish to inform you that Mr. Owusu-Amoako Justice who is a second-year student pursuing MSC programme in Disability, Rehabilitation and Development in the Department of Community Health of the school of medical sciences, K.N.U.S.T, Kumasi, will be accorded the necessary assistance that will enable him carry out his research work successfully.

Thank you.

MARY GYIMAH (MS)
DISTRICT DIRECTOR
TANO SOUTH

CC:
MR. OWUSU-AMOAKO JUSTICE
BECHEM COLLEGE OF EDUCATION
P.O. BOX 15
BECHEM