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BARRIERS OF INCLUSIVE EDUCATION: THE CASE OF WENCHI SENIOR HIGH SCHOOL IN THE WENCHI MUNICIPALITY

By

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DECLARATION

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

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DEDICATION

This work is dedicated to Dr. Anthony Kweku Edusei

ABSTRACT

For general education teachers to effectively include special needs students in their classrooms, they should be knowledgeable in the concept of inclusion. Also the physical environment should be built to meet the needs of students with visual impairment and resource materials should be available to facilitate inclusion. With the introduction of inclusion in Ghana, many students with special needs have been admitted in some of these schools together with their peers without special needs and are being taught by general school teachers. The study assessed the performance of Wenchi Senior High School as an inclusive education institution. The study involved all teachers and students at Wenchi Senior High School. The study utilized qualitative data collection method, and a purposive sampling technique to select 10 regular classroom teachers, the head master and 3 resource teachers as well as 36 visually impaired students for an in-depth interview.

The findings of the study indicated generally that, the teachers had no adequate knowledge of inclusive education before the programme was introduced. Besides this major finding, the study also revealed other setbacks to inclusion such as inadequate material resource to facilitate inclusion and the physical environment not being disability friendly.

In conclusion, it is recommended that teachers should have more observation training on teaching special needs children in an inclusive setting to enable them to handle all categories of disabilities in the classrooms effectively. Also, Ghana Education Service, (GES) in collaboration with special education division, should organize workshops, seminars for a as well as symposiums aimed at establishing good rapport and collaboration among the stakeholders of inclusive education. Furthermore, it is suggested that the physical environment should be built to address the needs of persons with visual impairment. Consistent in-service training should be organized for all regular teachers in the school to refresh their knowledge and equip them with best inclusive practices to enable them manage the students.

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CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

Historically, the national policy with respect to education of students with disabilities in Ghana has been segregated. Segregation involves separating children with disabilities from their counterparts, who do not manifest any disability, and education of those in special schools. However, the National Strategic Plan for 2003-2020 stipulates that the Government of Ghana intends to implement inclusive education nation-wide by 2020. According to the documents Ghana will adopt social inclusion, whereby students with mild to moderate forms of disability will be included in ordinary schools (MOE, 2004).

Inclusion of individuals with disabilities seek to address the needs of all children with precise attention on those who are helpless. The core of inclusive education is the essential right to education for all as well as the right to inclusion (Schultz, 1995). The philosophy of inclusive education was accepted at the Salamanca World Conference on Special Education organised in Spain from 7th to 10th June, 1994 and was reaffirmed at (The World Education Forum in Dakar, Senegal 2000). Since then, inclusive education has become a much wider concept and has also become the over-arching principles of the main dimension of child-friendly school development. As a result of the World Education Forum, the challenges of getting all children into school have been put on the political agenda in many countries including Ghana and are reflected in Education for All (EFA) National action plans. (Avoke, 2000). Wenchi Senior High School has been one of the first senior high school in Ghana to practice inclusive education and it has sought to produce better scholars who are visually impaired. These individuals now stand better chances in

life and have benefited a lot in inclusive education in employment acquisition. With quality inclusive education people with disability can contribute to the growth of the economy. Inclusive education is still often seen as a way of given education for children with visual impairment in a general education. UNESCO is promotion a wider view of inclusion, which covers all students who are exchanged on ground of sexual characteristic or poverty.

In the past special needs children were exempted from public schools until the arrival of the white Missionaries in Ghana. Prior to the missionaries' arrival the traditional cultural beliefs influence the attitudes of the communities to reject, abuse and kill children with disabilities in Ghana. In 1945 the missionaries established the first segregated school for children with disability (Ocloo, 2000). These segregated schools at that time saved and protected the disabled from hunger and death. Some parents for fear of stigmatization and other hazards genuinely sent their disabled children to be trained at the various segregated school established in the country. The world declaration of Education for All, stated that equal access to education should be provided to all categories of disabled persons. Ghana being a signatory to this declaration had to open up the regular schools for students with disabilities to attend. Unlike the policy of segregation which separated special needs children from their peers and led to labeling and discrimination, this policy is to allow disabled children attend their neighborhood schools, interact in the society and be participants in the society. This shift in paradigm from segregation to inclusive permits students with visual impairment to be enrolled full time in regular schools with adequate resource support. This implies that children of mild to moderate special needs will be educated in general inclusion schools alongside their non-disabled counterpart. Prior to the 1990's, in Ghana very few student with disabilities were included in regular education classrooms. The needs of many of these children were also not met by the Government of

Ghana and some parents (Mitchell and Descii 2003) states that educating number of people with special needs in general schools require a number of challenges and issues to be addressed as such much attention is not given to issues concerning students with disabilities.

Ghana's strategic plan 2015 is focused on educating individuals with disability in the main stream by 2015. As such some schools are operating the inclusive education on pilot basis until 2015 when it will be fully implemented all over the country (Esp 2003 – 2019). Government is to provide equal educational opportunities for children and youth with special needs at pre-tertiary levels to promote access and participation, quality and inclusion (National Report, 2015). This implies that as a result of providing education for all children, teachers in regular schools must provide instruction and other educational services to meet the needs of a diverse student population. Also, teachers must be prepared to teach all kinds of pupils, including those who present special needs in the classrooms.

On the basis of the observations made by the researcher on the experience of some students with visual impairment at Wench Senior High School in the Brong-Ahafo Region of Ghana, during her Internship programme she was motivated to research into assessing how ready the school is, as far as inclusive education is concerned.

1.1 Statement of the Problem

Ghana's Education Strategic plan is focused on including all persons with disability in the mainstream by 2020. Although Government is in support of inclusive education, little has been done in terms of adequately preparing regular classroom teachers, improving the facilities, physical accessibility and resources, which is very crucial in educating children with disabilities in the regular classroom(Avoke,2011). Owing to inadequate data and research on disability issues in Wenchi Senior High School in the Brong Ahafo Region of Ghana, there seems to be lack of information on teachers practicing inclusive education and how pupils with visual impairment in inclusive schools are catered for. This goes a long way to affect teacher attitude which plays a central role in the achievement of the goals of education for any nation. Some teachers have little idea of pupils coming to their school and lack the methodology of teaching them. Many of them do not believe in inclusive education where they have to teach special needs children (Ocloo, 2000).

1.2 Research Questions

1. How knowledgeable are teachers on inclusive education at Senior Wenchi High School?
2. What are the physical barriers that affect the inclusion of pupils with disabilities in Wenchi senior high school?
3. What material resources are available to facilitate inclusion at Wenchi Senior High School?

1.2.1 Principal Objective:

To assess Wenchi Senior High School as an inclusive education institution.

1.2.2 Specific Objectives

1. Examine teacher's knowledge on inclusive education at Wenchi Senior High School
2. To access the physical environment and how it affect the inclusion of the nonsighted students.
3. To identify the material resources available to facilitate inclusive education at Wenchi Senior High School.

1.3 Significance of the Study

The result of the study will enable teachers become effective in the management of pupils with visual impairment. The result will furthermore help pupils succeed in their learning. It is anticipated that the result of the research will throw more light on accessibility of physical environment, resources and attitude of teachers and sighted student toward the non sighted, this will make parents happy with their wards in that they may feel that their students are receiving quality education.

Finally, the result of the study will assist the Municipal Directorate (Wenchi Municipal Education Office) to support Wenchi Senior High School to find solution to some of the challenges of inclusive education at Wenchi Senior High School.

1.4 Limitation of the Study

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

the issue under study. The time frame for the final presentation of the project, as well as inadequate financial support did not permit for a wide coverage of the study.

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

1.5 Organisation of Chapters

Chapter one consists of an overview of inclusive education. The problem under study is also elaborated. Research questions, specific objectives and general objectives are all found in this chapter.

Chapter two consist of literature review and includes the review of general literature and review of related literature.

The third chapter will describe the methodology, study type and study design, study population, sampling techniques and the sample size for the study. Study variables, data collection techniques and tools will also be found in this chapter. It will also talk about data handling and analysis.

Chapter four presents the findings of the study with regards to the specific objectives which are the teachers knowledge and attitude toward inclusion, material resources available and physical barriers that exist at Wenchi Senior High School. Chapter five consists of discussion of the results from the previous chapter citing literature to support research findings informed by the specific objectives of the study. Chapter six will outline conclusions and recommendations made at the end of the study, based on the result.

1.6 Definition of Terms

For the purpose of this study, the following terms are operationally defined as follows;

1. Inclusive education: placing all children with disabilities into regular classrooms irrespective of their disabilities.
2. Preparation: Making an individual ready with a skill beforehand.
3. Children with Special needs: these are children who have difficulties that affect their ability to participate successfully in learning; the difficulties including but not limited to family circumstances, poverty, poor health, as well as disabilities such as visual or hearing impairment, intellectual disabilities, attention deficits, and behavior problem.
4. Impairment; or lack of function of body part or organ.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section provides information on related literature reviewed by the researcher. A conceptual framework and empirical studies in inclusive education have been discussed under the following sub-headings:

Social model of disability,

The meaning of inclusive education

The Physical Accessibility to inclusive education,

Material Resources, Audio, optical and non-optical devices.

Human Resource Support,

The challenge of funds to procure equipment and materials for inclusion,

2.2 Social Models of Disability

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

that limits ones desire to perform a function involving those with low vision from maximum participation in society as well as defining the services in place for them. The social prejudices, discrimination, and stigma are inherent part of the social model (Smart, 2001). In effects, majority of persons with disabilities become restricted with regard to access, participation, and adequate provision to equality education. The social model of disability as already explained, is a reflection of human right and equality. The assumption is that it was not individual that were disabled by their physical or mental impairments as purported by medical conceptualization of disability but rather organization of society as designated by non-disabled people that were more significantly disabling (Brynner, 2000; Fraser, Meltzen, Ryba, & Neilson, 2000). Within the social model, the locus of the problem is not within the individual but within the oppressive aspects of societal, political, and un-enabling economic environments in which disabled people live (Barnes, 1996).

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

play in the inclusion of disability into broader social issues (Secretariat of the African Decade of Persons with Disabilities, 2009).

Swain, French and Cameron noted that in the social construction, the administration of the situation involve social principles, and thus, the society is expected to design the surroundings to meet the needs for full involvement in all areas of life. The situation is both ethnic and believes including the person, community and environmental change. They see as the same opportunity for individuals with disability and special need. (Swain, et al., 2003). With the social model, society and people must be changed attitudes and perception about persons with disabilities (Finkelstein, 2001). This particular model is relevant to this study in that it emphasizes that states ensure education for persons with disabilities and special needs as an integral part of the education system. Thus, general educational authorities are responsible for the education of persons with disabilities and those with special needs are integrated settings. Education for persons with disabilities should form an integral part of national education planning, curriculum development and school organization. By and large, education in mainstream schools presupposes that provision of adequate and other appropriate support services exist to enhance education of individuals who are partially sighted.

2.3 The meaning of the Concept of Inclusion

Halvorsen et al. (2001) defines inclusion or inclusive education as a situation where children with disabilities are supported in their chronologically age- appropriate general education classes in their home schools and received the specialized instruction delineated by their individualized education program (IEP) within the context of the core curriculum and general class activities. According to Ainscow et al. (2006), Inclusion is concerned

with all children and young people in schools, it focused on expenses, presence, participation, and achievement, inclusion and exclusion are linked together such that inclusion involves the active combating of exclusion. Inclusion is seen as a never- ending process.

Booth (1996) explained that, inclusion is also seen as a process of addressing and responding to the diversity of needs of all learners through increasing participation in learning, cultures and communities, and reducing exclusion within and from education as explained in. It involves changes and modifications in content, approaches, structures and strategies, with a common vision which covers all children of the appropriate age range and a conviction that it is the responsibility of the regular system to educate all children.

According to Ainscow (1995) inclusion is a more radical set of changes through wl1ich schools come to embrace all children. It is a movement away from segregation. For their part, Booth et al. (2000) conceive inclusion as a set of never ending processes and involves the specification of direction of change. It is relevant to any school however inclusive or exclusive its current cultures, policies and practices. It requires schools to engage in a critical examination of what can be done to increase the learning and participation of the diversity of students within the school and its locality.

It is a community based and reflects the community as a whole. Membership is open, positive and diverse. It is not selective, exclusive or rejecting, but accessible to all members in terms of building and grounds, curricula, support systems and methods of communication. It promotes equality where all members have rights and responsibilities, with the same opportunity to benefit from and take in the education provided both within and outside its premises (Centre for Studies on Inclusive Education, CSIE, 1996).

In school, inclusion does not occur by placement in the regular class alone, rather it is a desired end-state. It must be created with proper planning, preparation and supports. The goal of inclusion is achieved only when a child is participating in the activities of the class, as a member who belongs, with the supports and services they need. Inclusion is "not" a trade-off of supports and services for placement in the regular class and is not a trade-off of achievement of individual goals. No matter where a child with a disability is placed, an Individualized Education Plan (IEP) must be developed around the child's needs. The objectives of the child's Individualized Education Plan must continue to be met in the regular class. The same applies to the related services a child needs, they must continue to be provided for in the regular settings (Kids Together Inc, 2010).

Also inclusive education is concerned with all learners, with a focus on those who have traditionally been excluded from educational opportunities - such as learners with special needs and disabilities, children from ethnic and linguistic. It is an approach or process which occurs when children with and without disabilities, HIV status, age and children of diverse backgrounds and abilities learn together in the classroom, interact socially with each other with the regular school setting for the whole day. It aims at social inclusion and implements the child's right as pronounced in the universal declaration in human rights 1949 (UNESCO, 2003). However, inclusive education is not concerned only with disabled children, or with finding an alternative to segregated special schooling. Many other groups - children

2.4 Physical Accessibility

Physical Accessibility is a general term used to describe the degree to which a product, device, services or environment is available to as many people as possible it is often used

to focus on people with disabilities and their right to access to entities often through the use of assistive technology. The Disability rights movement (2001) advocates equal access to social, political and economic life which includes not only physical access but also access to the same tools, services, organizations and facilities that we all pay for. Abulia (2006) contended that many new houses, schools and public buildings even in wealthiest countries lacks basic accessibility features. Fange et al (2005) stated further that building entrance, public use areas, light switches, electrical outlets, and reinforce walls in bathrooms for later installation of grab bars need to be accessed. Architectural accessibility refers to the "built" environment and the means of getting to and from that built environment, whether it is from a parking lot, a bus stop, or the street. (Corporation for National & Community Service, 2004) concludes that the lack of architectural access affect many people with different kinds of disabilities.

We can easily imagine how a flight of steps would impart someone with a mobility impairment, but a truly architecturally accessible building considers the needs of persons with a range of disabilities, including visual, mobility, hearing and cognitive impairments (Corporation for National & Community Service, 2004). This is why an architecturally accessible environment is sometimes referred to as "barrier-free". Similarly, Sari (2007) argues that it is important for teachers of children with SEN to understand that the quality of the environment in which the children learn is important in determining their achievement.

An inclusive learning environment is one with proper layout characterized by direction indicators, provision of ramps and rails making it accessible to all students, pleasant to work in and appropriate for teaching and learning (Trinity College Dublin, 2011). Planners of schools should therefore ensure all students can physically access teaching and administrative spaces, space to manoeuvre around classes and offices with wheelchair.

Consider the width of the doorway. All areas of the classroom should be accessible to all students (Scott, Leach, & Bucholz, 2008) this is because classroom environment can either improve or impede a student's ability to learn and feel safe and comfortable as a member of the class. Some areas to consider when creating atmospheres of mutual respect are classroom design; class procedure and classroom strategies (Jessica and Julie 2009).

Moreover, Patton, Snell, Knight, Willis and Gerken (2001) substantiate the claim that desks arranged in neat, orderly rows may make movement throughout the class easier. After a survey study about classroom, Patton et al (2001) found that 94 percent of the K3 teachers they surveyed use a semi-circle or cluster to arrange the desks in their classrooms. They therefore came to the conclusion that grouping desks offered several benefits including encouraging cooperative learning, building sense of class community and making the best use of space. Similar results are reported by Jessica & Julie (2009) in their assertion that organization of the furniture in the room is important so there will be enough space for all students to easily move throughout the classroom.

Teachers should also expand safety procedures to all students, including those that are identified with disability and when teaching, repeat printed directions orally (Scott, Leach & Bucholz, 2008). Ensure safe floor covering for safe passage for any child, including, for example, a child who is in a hurry, has visual impairment, or uses a wheeled stander (Michael et al, 2006). Similarly Torrey & Ashy (1997) suggest that physical activities are conducted with children in a safe and supportive environment. They believe schools and teachers that create safe and supportive environment will not only protect students from injury, but will also encourage their lifelong participation in regular activity. However, James (2000) found that although educators in general endorse these requirements, they disagree over its implementation, particularly in relation to the concept of inclusion. Their

varied perspectives have direct implications for the design and use of school facilities. A survey conducted by Mc Cain and his group on class size suggest that large classes may have a negative impact on classroom performance in part because of reduced student/teacher interaction (Mc Cain et al, 1985). In contrast, Baun and Valins (1979) believes changes in overall school population independent of classroom size are more likely to result in increased levels of uncertainty, goal interference and cognitive load

2.5 Material resources Audio, Optical and Non-Optical Devices

Since students with visual impairments rely mainly on verbal information for learning, audio devices should be incorporated to aid the teaching process. These include things like audio cassettes and compact discs (Salisbury, 2008). However, lesson contents with diagrams and tables cannot be well explained in an audio format (Salisbury, 2008). Moreover, a lesson can be tape recorded and given to students with visual impairments for later playback at their convenient time (UNESCO, 2001).

Moreover, if a videotape for example has to be shown, it is wise to show it to students with visual impairment so that through a specialized teacher's or a classmate's explanation, they understand all the visual concepts in it before the class watch it. For a film with sub titles, a classmate or teacher can read aloud to the class to help those with visual impairment (Spungin, 2002). Optical devices such as eye glasses, magnifiers and telescopes use lenses to increase a person's residual vision. They are normally prescribed by a medical specialist while non-optical devices do not incorporate a lens and do not need to be prescribed by a specialist. Things like large prints, braille and braille writer, tape recorders, book stands, recorded and talking books and calculators are examples of non-optical devices (Simon et al., 2010). The role of both optical and non-optical devices is to improve vision and increase functionality of students with visual impairments through the use of other senses.

It is the role of a teacher to encourage students with visual impairment to use visual devices and assistive technologies to help them with vision (Spungin, 2002). Teaching with instructional materials is critical in learning because the materials help learners to see, hear and handle what they learn. Instructional materials help to improve communication and make the teacher work easier because talk less (Ocloo, 2011). Many pupils with low vision need some form of materials or equipment in order to learn. For instance, a strong felt pen in a particular colour will enable the child with low vision to see what has been written. Non-shining papers with either no lines or very strong and well-spaced lines will be very useful to many children with visual impairments. Working papers and books with enlarged print will ease the task of reading for most children with low vision.

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

the child explores it extensively while the other students are looking at the picture of the object or animal (Ocloo, 2011).

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

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

access print independently thus enabling them to develop solid and meaningful academic literacy skills.

2.6 The use of Tactile Materials

Teachers must be aware, that students with visual impairments have deficit in conceptual experiences and understanding due to absence of visual ability, therefore adaptations of teaching materials becomes paramount, if they have to learn all the things other students without visual impairments learn in the class. To help achieve this, therefore, such students should be taught physically using concrete experiences (Bishop, 1996; Pauline, 2008). Following this proposition, the students should be given an opportunity to explore tactile diagrams. Tactile diagrams are very important to understand images and concepts which are difficult to explain and describe in words. Therefore, they should be used when shapes and patterns are very important to understand the concept but also, when the real objects are not available to help teaching (Salisbury, 2008). Tactile images or diagrams can be drawn on braille papers using a special mat and stylus. This produces a relief image or diagram that can be easily felt (UNESCO, 2001).

2.7 Adapting Written Texts

In order to support students with vision loss, instructional materials need to be employed. For example printed text can be adapted through increasing the font size, bolding the text, increasing contrast, adding colour, and adjusting spaces between characters. However, the extent of these adaptations depends solely on the severity of visual defects and the needs of the student concerned (Bishop, 1996; Mastropieri & Scruggs, 2010). It is important to consult a specialist teacher on preparation of materials prior to the lesson, because different

students use different materials depending on the degree of their visual impairment (Spungin, 2002).

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

2.8 Assistive Technology

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

2.9 Assistive Technology for pupils with Visual Impairment

The technological developments during the last decades have significantly increased access to information in all formats with visual impairments. As Kapperman and Stiken (2000) observed, the ability to access information is essential for success in education,

employment and life. Therefore, much of the development of assistive technology has focused on providing access to information. In particular, devices to read and write Braille and print have significantly improved with the application of new technology. Such devices include audio technology (tapes and tape recorders, auditory text, recorded texts and synthetic speech) as well computer based technology such as Braille embossers (specialized tactile printer) advanced CCTV, scanners and optical character recognition software (technology that scans printed text and provide the user with speech output), computer screen readers, Compact Disc (CDs) and multiple hardware and software innovations. Computer assistive and technology are often cited as the means to overcome limited access to print and other environmental barriers for non-print readers (Gerber, 2003).

Gerber notes that plethora of researchers and practitioners in the field of visual impairment have acknowledged that the use of computers and assistive technology can change the lives of pupils with visual impairments to a great extent by improving education and employment opportunities, enhancing social network and facilitating independence. In essence, assistive technology has the potential to be the ‘‘great equalizer’’ for persons with visual impairments (Michaels & McDermott, 2003).

For instance many careers opportunities requiring access to visual information are now accessible to those who have visual impairments through the application of appropriate technology. It is broadly recognise that assistive technology has good impact on the lives of individuals with vision loss. (Kapperman, Sticken, & Heinze, 2002; Strobel, Fossa, Arthanat & Brace, 2006). However, the advance in technology on the other hand has been cited as a factor for declining Braille use and Braille literacy (Spungin, 2005). In addition, assistive technology omits grammatical structure, spelling and traditional text formats.

Therefore, as assistive technology market continues flourishing with devices and software that make the visual world significant more accessible to person with impairment, educators need to evaluate their applicability and effectiveness to literacy related needs.

Also, Optical Character Recognition (OCR): OCR technology enables individuals with visual impairment to place books or other print materials on a scanner and have the text interpreted and read using synthetic or digital speech. The first OCR system for individuals with visual impairments was introduced in 1976, when Ray Kurzweil invented the Kurzweil Reader. The early Kurzweil Reader was about the size of a small photocopy machine and was considered to be a truly remarkable advance for students with visual disabilities. While the device was often found in libraries, it was too bulky and expensive to be available to students in the classroom. Today, there are portable stand-alone OCR devices and devices that can attach to other computers and scanners
(Kurzweil, 2002).

2.10 Print Adaptation for Pupils with Visual impairments

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

Teaching with instructional materials is critical in the learning of human beings because they help learners to see, hear and handle what they learn. Instructional materials help to

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

Additionally, Task force on special needs education (2006) notes that learners with SNE including pupils with low vision need provision of the following materials and facilities in the regular schools: learning resources such as low vision devices, audio and audio visual equipment, working papers and books with enlarged print and a strong felt pens which will assist them to effectively. Heward (2006) on the other hand observes that no category of handicap requires greater coordination and provision of resources than in the area persons who are blind or visually impaired. Randiki (2005) advises that the resources can be pooled at the start so that several schools in a zone can have such group resources kept in the offices and shared. Again, the writer notes that local artisans should be incorporated so that they are able to make and repair some of these devices.

2.11 Human Resource Supports

Support services are services that are needed to assist a child with disability to benefit from regular or special education Wood (1993) as cited in (Avoke, Hayford, Ihenacho & Ocloo, 1998). These services are offered alongside special education programmes to help

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

Sands et al. (2000), said, all stakeholders have to be properly informed of the changes in order to make inclusion a success. Traditionally, discussions of important school outcomes have been conducted in private by school administrators, curriculum specialists and other 'experts'. In contrast, in inclusive school communities, children, youths and their families, community members all participate in these important decisions along with school professionals and support personnel (Sands et al. 2000). The needs and interests of the learners inform policy. Professionals, like psychologists and social workers, have different roles, because they now have to listen to the views of other people and they do not have the last say. This partnership also ensures that inclusion spills from individuals to classrooms, from classrooms to the playground, from the playground to the entire school and then from the school to families and the entire community (Sands et al. 2000).

2.12 Collaboration with Parents

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

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

Parents can also provide essential information to the multidisciplinary team that assists in the development of an appropriate and a high-quality educational programme (Vaughn et al., 2007). Parents play important role as mediators towards the school, by giving information and resolving problems when teachers/learners do not understand their child's needs (Lightfoot et al., 1999). Some of the problem behaviours that manifest in the school environment emanate from the home and it is only the parent who can inform the schools about the nature of the problem. Parents should not just be called when there are problems but, should take an active role in preventing problems in the school. Some might argue that this is not feasible. Teachers are very much used to their own space in teaching and having

to accommodate the views of others may seem an insurmountable task. One may also inquire when time would be found for this cooperation; what with working parents and their busy lifestyles. Many schools claim to involve parents but they mostly just pay lip service (Engelbrecht et al., 2004).

Vaughn et al. (2007) and Downing (2008) are also of the view that parent teacher collaborative practices are not as comprehensive as they could be. Other professionals like psychologists and other therapists are used to their own offices and being consulted when there are problems. In inclusive education, the expectation is that all professionals will work together in a collaborative partnership where there are no hierarchies. Cooperation, then means that there has to be compromise from all partners so that they can work towards a common goal. Downing (2008) further argues that, co-operation may, however, appear impossible, since others may feel superior to others and this collaboration will be about whose last word it will be. It will take some time getting used to working with one another. In schools, parents fear approaching their children's teachers and psychologists and therapists may be most feared both by parents and teachers alike, as they are considered to be far too well-educated than ordinary folk. This fear makes for an uneasy working relationship which might not benefit learners. Careful planning will therefore be required to ensure that all partners work together in a collaborative partnership (Downing, 2008).

2.12.1 Itinerant/Resource Teacher Service of inclusive education

Another support service given to pupils with low vision in the regular classroom is the itinerant or resource teacher services. This service aims at placing and supporting visually impaired individuals in regular classrooms to enable them achieve the best in learning. Resource teachers are specialists who are trained and attached to the district education

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

According to Okyere and Adam (2003), resource teachers provide in-service training for the other teachers on how to manage the visually impaired child in learning. The techniques and methods of teaching some subjects are demonstrated for regular classroom teacher to adopt. In the community, the resource teachers target the schools, the clinics as well as going to homes to educate students and parents on disability issues. The provision of these services in most cases help pupils with low vision to adjust in the general education and they benefit from their education (Okyere & Adam, 2003). St Joseph`s educational Centre for the blind (2008). Parents are also given a major role to play. Instead of sitting on the side-lines and being called to school to be informed of changes, they actually participate in decision-making that concerns making changes. Parents are to be involved in aspects of school, such as the assessment of their own children. They are normally very observant of their children's performance and schools often tell rather than ask parents about their children's performance (Engelbrecht et al. 2004). Parents also have a right to be notified about anything that might concern the identification, evaluation or placement

for educational purposes of their children. They can also request an independent evaluation to be done for their children. Parents can also provide essential information to the multidisciplinary team that assists in the development of an appropriate and a high-quality educational programme (Vaughn et al.

2007).

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

Instructional materials are essential for effective teaching and learning. This is because in a mainstreamed setting, instructional materials are used by the teacher to facilitate learning for the individual child (Obi & Mensah, 2005). But this becomes a problem in most schools due to inadequate funds to procure them. The Ministry of Education and Ghana Education

Service must see it that the capitation grants and other logistics reach schools on time for teachers to procure the needed materials for teaching. Deku and Vanderpaye (2008) were of the view that the choice of instructional materials greatly influences any educational programme. They continued that since materials availabilities influence content, quality, and general efficiency of the instructional programme, teachers and schools must be provided with relevant materials to the needs of students including pupils with low vision. Also, large class size influence educational materials since there may not be adequate for the number of students in class. This may affect teachers' willingness to teach students with special needs and difficulties. Regular school teachers are more willing to accept students with disabilities in their class if adequate support is provided in accommodation, individualized instruction, teaching methods, materials and services (Bunch & Finnegan, 2000).

2.13.2 The Challenge of Large Class Size

The recent drive for enrolment into regular schools through the introduction of the FCUBE policy, the capitation grant and school feeding programme have made many regular schools in Ghana to experience a sharp increase in student enrolment. Asamani (2002) cited in Avoke and Avoke (2004) places the number between 60 and 90 in an average class in the country. Such large class sizes according to Avoke and Avoke (2004) make it difficult for students with special needs to be effectively included in demonstration lessons since teachers are unable to offer support to such students. Ocloo et al. (2002) posit that in the rural and semi-urban environment, everybody that offers him/herself for enrolment or

the school is not denied access; this however, created a situation where children with various degrees of special needs are found in regular schools.

Avoke, Hayford and Ocloo (1999) cited in Hayford (2013) noted that the sharp increase in enrolment has led to overcrowding in both special and regular school in the country (Ghana). In a study, teachers reportedly taught classes with enrolment ranging from 35 to 85 pupils. The challenges imposed on teachers by large class size ranged from inability to make time for all the pupils including pupils with low vision, to difficulty in marking class exercises to problems encountered with class control. Also, large class size adversely affects teachers' assessment of pupils' progress in the programme of study as well as the quality of their marking. Ocran (2011) reported that out of 104 teachers surveyed in Basic Schools in the Central region, 79% of them taught classes with enrolment that ranged between 36 – 66 pupils. Only 21% of the teachers in that study handled classes with enrolment below 35 pupils. The findings from the studies confirm the Ministry's assertion that there are variations in enrolments and many schools have not attained the national target of 35:1 pupil-teacher ratio. Consequently, teachers in these schools are not able to provide quality attention to all learners including those with special educational needs. Large classes cause teachers to spend so much time on marking pupils' work that they tend to have very little time to prepare for teaching. By simple calculation, if a teacher has 35 pupils in his class and gives the pupils exercises in three different subjects, then, in a day he has 105 exercise books to mark. If the teacher uses a minimum of five minutes to mark a book then he will spend 525 minutes or 8 hours 45 minutes marking every day. That is most basic school teachers spend more than a third of a day marking of pupils' work, which is not helpful to inclusive education because teachers may not have the energy to attend to

the needs of children with disabilities or special educational needs during school hours (Hayford, 2013).

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

2.13.3 The Challenge of Adapting the Curriculum and Teaching Learning Materials

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

Obstacles also exist in the area of adaptations of materials for pupils with low vision. Although some subjects such as integrated or natural sciences, English, environmental studies and mathematics, studied in the basic schools have syllabi adapted for pupils with low vision in which complex psychomotor activities are replaced by more manageable ones (Waihenya, 2000). Most syllabi used in general education classes do not have accommodations in terms of adapted activities for students with visual impairments.

This makes it extremely hard for pupils with low vision to access the general education curriculum (Obi & Mensah, 2005). Obi and Mensah further stated that, teaching children with diverse needs call for curriculum adaptation. This involves planning and adaptation of instructions to suit the needs of the learner. Teachers are expected to tailor their instructions to the needs of each individual child. This HF means that the content of instruction should be adapted by the teacher to make provision for both higher and lower achievers. The teacher will need to apply a wide variety of teaching styles and principles including direct instructions, systematic teaching, discovery learning, cooperative teaching and learning, one to one small group activities, peer teaching among others. Adapting these methods will no doubt add to the teachers work load that are extremely challenging to most classroom teachers. Regular classroom teachers required intermittent in-service training or refresher courses for managing students with special needs including pupils with low vision. As today's classroom settings abound with new and challenging situations, the best way to assist the teacher is to develop the teacher through in-service training to support provision (Rose, 2001). Supporting this statement Rose,

Bracket and Maxam (2001) postulated that in-service training should be considered an important part of educational planning for teachers in general education to meet the demands of diverse learners. William and Finnegan (2003) noted that regular education teachers do not have the required knowledge about children with special needs including pupils with low vision and this will influence their perception about them. These authors therefore suggest that in-service training should be an integral part of training for regular school teachers on the field in order to foster a greater level of positive attitudes towards children with special needs.

Specialists who are expected to serve the pupils with low vision in various capacities are grossly inadequate. It is common knowledge that not many students of special education desire to major in the area of visual impairment. This accounts for acute shortage of teaching and supportive staff in schools and institutions of higher learning. The system and design of educational programme in Nigeria do not promote effective learning for students with visual impairment. In-service training seminars and workshops must be regularly organized for both specialists and non-specialist teachers in special and mainstreamed schools. This is to update their knowledge on what they have not known in special education so that they effectively support pupils with low vision in the mainstream schools (Olukotun, 2003).

2.13.5 The Challenge of Funds to Procure Equipment and Material Resources for inclusion.

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

Additionally, Wang (2009) observed that funding should support provision for enough facilities, teaching materials, appropriate curriculum, train special educators and learning

activities. Unfortunately, lack of funds is often an obstacle for development. Supporting this statement Olukotun (2004) argued that existing schools for the blind are not adequately funded. The same goes for the existing rehabilitation centers and vocational centers across the country. Subsidy from the government which complements the contributions of the non-governmental organization (NGO) is inadequate. This accounts for the poor running of special schools for the blind and some rehabilitation/vocational centers in Nigeria. The governments at all levels should improve upon their efforts to educate the visually impaired by increasing their annual subventions and grant in-aid to mainstreamed/inclusive schools. Likewise the philanthropist and non-governmental organizations should be encouraged to generously fund the inclusive schools and award scholarships to teachers and student (Olukotun, 2004).

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This section deals with the methods used in obtaining data for the study. It involves the research design, the study population, sample size and sampling technique, description of instrument, procedure for the data collection, validity and reliability of instrument, data collection procedure and data analysis.

3.1 Research Design

The design is a case study in which students and teachers in Wenchi Senior High School were interviewed. Case study allows an investigation to real-life events; such as individual life cycle, organizational and managerial processes, neighbourhood change, international relations and maturation of industries. (Yin, 1994). A case study has a unique strength in its ability to deal with variety of evidence; documents, artefact, interviews, and observations beyond what might be available in the conventional historical study (Yin, 1994). A case study is an in depth analysis conducted usually over a limited period of time, and focusing upon a limited number of subjects. Considering the purposes of case studies and the intent of this research, which is to assess Wenchi Senior High as an inclusive education institution, a Case study design is deemed appropriate. This study adopted a qualitative data collection method. Qualitative research methods allows the researcher to get close to the data thereby developing the analytical, conceptual and categorical components of explanations from the data itself rather than from preconceived rigidly structured and highly quantify techniques (Avoke, 2005, cited in Robson, 2001). This researcher takes recognition of Kannae's (2004) assertion that the primary strength of qualitative methods are that they permit adaptation to changing conditions and/or new insights that is in- depth inquiry and open to all aspects of the situation under investigation. Bryman (2012) is of the opinion that "qualitative inquiry is the type of methodology in which the description of observation is not ordinarily expressed in quantitative terms" (p23). Qualitative research takes into consideration the holistic description of whatever is been observed, rather than comparing the effects of a particular treatment as quantitative research does. Qualitative research also seeks insight into issues rather than statistical analysis. It studies phenomena in its natural settings. The researcher deemed qualitative

method useful in that it helped to conduct an in-depth exploration of the issue being investigated.

3.2 Population

Population is define as all the members of real or hypothesis set of people, event or object to which a researcher wishes to generalize the result of the research study (Borg & Gall, 2005). Koul (2002) states that a population refers to group of humans selected for a study. The population for this study comprised the headmaster, all teachers and students at Wenchi Senior high School.

3.3Sample

A sample is a small portion of a target population. Sampling means selecting a given number of subjects from a defined population as representative of that population (Bryman, 2012). Any statements made about the sample should also be true of the population (Orodho, 2002). It is however agreed that the larger the sample the smaller the sampling error. A sample size for the study comprised the headmaster, 36 visually impaired, (23 male visually impaired students and 13 female visually impaired students), 3 resource teachers and 10 regular classroom teachers. (Made of 5 male and 5 female teachers),

3.4 Sample Technique

Purposive sampling technique was employed in selecting the headmaster, 36 visually impaired, 3 resource teachers and 10 regular classroom teachers. Purposive sampling enabled the researcher to select only those who are knowledgeable on the topic under study and can provide useful information. In purposive sampling, the units of the sample are

intentionally picked for study because of their qualities which are not randomly distributed in the universe, but they are typically or they exhibit most of the characteristics of interest to the study (Kumekpor, 2000). In the current study, participants were selected with the belief that each member of the study population holds vital information needed to explain the issue being investigated.

3.5 Instrument

3.5.1 Instrument Description

The instrument which was used for the study is a semi-structured interview guide. It had three parts. Part 1 (one) examined teachers' knowledge on inclusion. The part two dealt with resource materials available to facilitate inclusion, and the third chapter also seeks to address the physical barriers that exist at Wenchi Senior High School.

3.5.2 Procedure for Data Collection

The researcher obtained a letter of introduction explaining the research focus to the authorities at Wenchi Senior High School. Upon receiving the permission the researcher visited the School to collect data from the Students and teachers. The interview guide were administered to each teacher independently by the researcher and the research assistant playing the assisting role of recording and transcribing the views expressed by the teachers and students. However, the researcher, where necessary explain some questions that remains unclear to teachers. The researcher interviewed the teachers on their knowledge on inclusion, physical barriers that exist and resource materials available to facilitate inclusion. The interview was conducted in the resource lab of Wenchi Senior

High in a very congenial atmosphere with little disturbance of any kind in both cases. The researcher interviewed them to elicit information which each part lasted for thirty minutes from nine 9.00 a.m to 10.30am at Wenchi Senior High School.

3.6 Validity and Reliability

For an instrument to be valid, it must be both relevant and reliable. The researcher's supervisor checked and confirmed the reliability and validity of the tool following the pilot study conducted for that purpose. Validity is one of the basic principles of research and it is the ability to produce findings that are in agreement with the theoretical or conceptual values, in order words, to produce accurate results and to measure what it is supposed to measure (Sarantakos 2011). A valid measure produces true results that reflect the true situation and condition of environment it is supposed to study.

After the instruments were designed, they were read over several times to identify mistakes that might have been overlooked during the setting stage. Ambiguous items were restructured or deleted. To ensure validity of the findings, respondents' views, which were recorded manually, were read to them. This gave the respondents the opportunity to determine if their view were accurately recorded.

Furthermore, the use of interview and observation in the study, allowed triangulation of the data. According to O'Donoghue and Punch (2003), triangulation is a "method of cross-checking data from multiple sources to search for regularities in the research data (Punch, 2003). The use of triangulation in the research therefore increased the credibility and validity of the result.

3.7Ethical Consideration

Ethical clearance was applied for and obtained from the Committee on Human Research

Ethics and Education (CHRPE) of the Kwame Nkrumah University of Science and Technology. The researcher strived to be unbiased, accurate and honest as much as possible during all phases of the study. Permission was also sought for and granted by the authorities of the Wenchi Senior High School. Efforts were also made to protect the confidentially and anonymity of participants and to ensure that they were not exposed to any risk during the study. Each participant was asked to sign an informed consent form which described the purpose of the study, the risks, benefits, and the voluntary nature of their participation before they were interviewed.

3.8 Data Entry and Analysis

Kannae (2004) defined data analysis as the process of bringing order to the data by organizing it into categories, patterns and trends through the use of statistical methods. Data collected from interviews was transcribed verbatim by three different persons. The transcription was done by playing back the recorded version of the responses with references from the jotted points. The different transcriptions was compared to come out with more accurate response that reflected the respondent's views. The transcribed version of the response was submitted to the respondents to read through and make further corrections if any. Data was categorized in relation to the research questions raised and analyzed descriptively using the thematic content analysis approach.

Inferences from literature and other relevant studies was drawn to support the findings. The verbatim expressions of some respondents were indicated at some instances. As the study is about assessment of Wenchi Senior High School as an inclusive institution the researcher summarized and described data from the respondents and came out with a conclusion and some recommendation.

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter deals with the presentation of the main findings of the study. The findings are presented according to the three main research questions posed to guide the study and the emerging themes within each question.

4.1 Level of knowledge of teachers of inclusive education at Wenchi Senior High school.

Analysis of the interview revealed that all the regular teachers interviewed did not have any idea of inclusive education before their school was selected for the pilot study, but the resource teachers and the head have adequate knowledge in inclusion. Some of the teachers

involved in the teaching of children with disabilities commented as follows: *"We started practicing integration long time and completed university of cape Coast many years ago and so I have no idea about this inclusive education"*

"We just started practicing inclusive and don't know much about inclusive education. (Field data collected 2013). No officer came to talk to us about inclusive education" (field data collected 2013).

However, the head teachers as well as the resource teachers seemed to have undergone some training and claimed to be knowledgeable on inclusive education. The head teacher stated that:

"Yes I was given two days in-service" he explain that: All head teachers of pilot inclusive Schools in the Municipality attended a training workshop on inclusion before our school started the program".

Similarly, the resource teachers claimed they had adequate knowledge about inclusion. A resource teacher at Wenchi Senior High stated that, *"I am more knowledgeable on inclusive education. I was taught inclusive education during my first degree. And I have been posted here to support regular teachers".* Another resource teacher remarked that: *"I have four good years training on inclusion, full time special educationist posted here to serve the purpose of my training so I know what I am here for and I am doing exactly what is expected of me"* (field data collected 2013).

Embracing the concept: Even though responses from the participants suggest that the teachers did not have any knowledge about inclusion education before its implementation in their schools, some of them indicated that they accepted the concept after the Special education Coordinator met them and brief them on the concept. As a result of the awareness created by the special education coordinator, some of them claimed their

perception about disability changed and became more tolerant to children with disabilities. For example, a teacher stated that *"the policy has helped us to identify and appreciate the capabilities of persons with disabilities",* while another teacher supported this assertion and said:

"Now I feel comfortable to chat, play and even to the extent of sending a disabled student to buy me food, one of the most difficult things I would have done without this inclusive programme".

The following comments further illustrate teachers' support for inclusion education. *"The policy is good; I can't see anything wrong with this inclusive education. Some of us who were initially against the policy and were distance from the disabled pupils due to our negative perceptions can now interact comfortably with the disabled pupils. Also both the disabled and nondisabled children play together because they now see themselves as friends or brothers and sisters"* (field data collected 2013).

"It has enabled us to understand these disabled pupils better than before because we now know some of their behaviours, the way they do their things as well as acknowledging and appreciating their needs which was not so at the initial stages of the inclusive programme in the school" (field data collected 2013)

Comments from the teacher suggest that he was in full support of the policy.

*"The head master was willing to accept children with disabilities because disability is universal and can affect anyone. And so it is wise to educate them and their peers in their local schools"(*field data collected 2013).

Similarly, comments by the resource teachers suggest that they had positive attitude towards the policy. Two resource teachers explained that they supported the policy because unlike segregation, inclusion has a lot of benefits for disabled children although they envisaged some difficulties in its implementation.

4.2 The physical environment and how it affects the inclusion of the non-sighted. To assess the physical environment of Wenchi Senior High School the students were interviewed on the school's physical environment and how it affects their inclusion. The students were interviewed to ascertain their views on the physical environment. In the first place, it is worth noting that not all the students reported facing any challenges in interacting with the physical environment. However, these categories were the least, because about 95% indicated their unique challenges when interacting with the environment. The challenges highlighted have been categorized under five broad ones namely: the physical environment of boy's dormitory, the physical environment of the girl's dormitory, the physical environment of the various class room blocks, the toilet facilities and the resource room. In relation to the first challenge- the girl's dormitory- a number of students explained that they found it difficult to use the cane when accessing the physical environment. This is because the environment is not tiled, a lot of erosions can be seen around the dormitory block and the ground floor is very deep about 6 metres tall. This has compelled visually impaired students in the school to rely on their sighted counterparts for easy movement. This is typified in the following expression by one student; *''the front of the girl's dormitory to the ground is not assessable at all using the white cane''* (Field interview, 2013). It was noted that their emphasis was on how they depend on sighted guide. This is because the floor of the girl's dormitory is not accessible as erosion has taken the whole place. As a result, some of the students opined that it makes them frustrated even when they are moving from the dormitory to the classroom and limits their desire to learn in the school.

Directly linked with the above concern is the issue of the physical environment not being accessible which a number of the students raised. They opined that there is a big gutter in front of the girl's dormitory and as a result limit their desire to move about when their colleagues sighted counterparts are not there. Whereas it is true that consistent practice and use of the cane helps a user to develop familiarity with his physical environment, it was realized this familiarity has not been fully developed among majority of the students, even though the school give them orientation and mobility training. The students perceived the amount of time spent in teaching orientation and mobility in the school as being limited. In expressing a viewpoint on this, one student said; *"There is inadequate time for practice and this has affected my mobility skills. Therefore I could not move freely in this dormitory since a lot of physical barrier exist…"* (Field interview, 2013). For most of them, they argued that as a result of their impairment, their ability to identify obstacles within the classroom environment is hampered and this is because the environment is not accessible at all. The students therefore complained that it takes extended practice time to be able to develop familiarity with the various classroom blocks. Even though, they understood that there was an assigned time to teach them mobility skills their general impression was that the classroom environment is not accessible to visually impaired. Again, in front of the juniors block there is no guide rays to assist these individuals trail to their destination.

Another challenge that was raised on the physical environment is the boys dormitory. It is well known that gaining familiarity in ones environment boosts the person's confidence to move about freely without fear. However, most of the students indicated that they find it difficult to move around the boys' dormitory. This is because there is a big gutter between the ground and the stair case, also from the school entrance to the boys' dormitory there are deep gutters on both left and right sides along the road leading to the dormitory. Out

of this one visually impaired said *"the stair case leading from the dormitory to the drying line is very high and steep so am always afraid to move around there".* (Field interview 2013)" However there is no guide ray to assist these individuals to their destination. This actually impedes movement using the white cane. While it is undeniable that navigating along ones environment among the visually impaired does not come handy but with a great deal of practice and application of the use of the white cane, the aforementioned challenges have thwarted students' efforts to develop mobility skill effectively since the barriers exit in this regard.

A number of the students also had difficulty in accessing the resource room for the visually impaired. This is because, tables and chairs in the resource room are not catered for and are spread in haphazard manner and this actually limits students desire to assess their own resource room. One student said *"At times I am afraid when assessing my own resource room because of how materials are spread in the room''.*

4.3 Assistive technological devices available and how it affects the inclusive education at Wenchi Senior High School.

In educational settings, assistive technology refers to any technological tool or device that helps students with disabilities to access learning materials and perform learning tasks easily. In the case of this study, the researcher focused only on the assistive technology devices available at Wenchi Senior High School to facilitate inclusion.

It was found that the school has a computer laboratory with 45 installed desktop computers which is supported with JAW software, 3 perkins braillers, 36 hand frame and stylus and 10 white canes. The resource teacher reported that these assistive technological devices were provided by some benevolent societies and other philanthropist. It was further established that all the students were introduced to these devices in class one. And

currently used them in learning, reading, typing, assessing information and also assessing their learning environment.

It was also realized that about 95% of the students at Wenchi Senior High School express their views on the types of assistive devices available in the school. Their concerns are organized broadly into three, namely: the state of these devices, training of students in the use of these devices and inadequate material resources.

Whereas the assistive technology when in good state enables the visually impaired to interact with his or her environment and assess information in the same way a sighted individual would, it was realized that students at Wenchi Senior High School have difficulty in using the devices in the school. This is because the devices there are too old and hence reduce efficiency when using it and perceived by the students to encounter many problems when using it speech was too fast and the pronunciation of certain terms and words was perceived by the students to be different from their conventional understanding and this posits a challenge.

It was as well noted that, there is always malfunctioning and sometimes sudden failure of the use of Perkins and JAWS application as is being used and the students believed it retards progress in their studies. In expressing this frustration, one of the students indicated, *"At times, the JAWS could stop working while being used and misplacement of keys in the use of Perkins hence reducing efficiency"*. Upon further interaction, they explained that the type of the Perkins used in the school is old and easily breakdown without any body repairing them. A times too there is a malfunctions of the JAWS that is being used in the school. This is because it is unlicensed and limit in some of its applications or functions. The students are therefore limited to access other uses of

JAWS because they use the "cracked version" coupled with it inefficient functioning.

Another category of the students express the white cane available in the school are not enough as 53 visually impaired used 10 white canes and the computers in the school too are not enough this is typified in one students expressing '' *we pair* a *times at the ICT lab whenever we have computer classes and also the canes are very few hence reduce our confidence in interacting with the environment'* these categories of students were much concern with the adequacy of these assistive technological devices. Another student who is a partially sighted said that assistive device like close circuit television, hand held magnifiers or any other low vision devices could enhance his reading skill but these devices are not available in the school to facilitate inclusion. Also it was evidenced through the researcher's personal interactions with some of the students that the school does not have any orientation and mobility specialist to train the individuals, hence students are left at the mercy of their sighted counterparts in the school. They opined that had it not been the help they derive from their friends and proper use of their remaining senses, they would not have survived in the school.

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This study sought to assess Wenchi Senior High School as an inclusive institution and to determine the extent to which Students with special needs are included in Wenchi Senior high school in the Wenchi Municipality. In this chapter, the major findings were discussed, implications of the findings have been discussed and some limitations of the study were identified.

5.1 Level of knowledge of teachers of inclusive education at Wenchi Senior High school.

The data gathered from the interview revealed that there were children with special needs in Wenchi Senior High School. Only students with visual impairment were identified in the school. As explained in the literature special needs include both disabilities as well as difficulties arising from disadvantages, for example, orphans, poor home and children not living with biological parents (ISCED, 97; Hayford, 2008). The finding also confirms the assumption that there were Students with special needs (visually impaired) in the study area; since the school is one of the SHS practicing inclusive education in the country. There were resource teachers to support such Students to learn.

The findings revealed that the teachers had no idea about inclusive education although they were aware of the existence of special school, and special needs children. This shows that

all teachers were not familiar with inclusive education before its introduction in the school, suggesting that the implementation of inclusive education in the district would likely encounter obstacles. This is because teachers' knowledge are key to quality education and central to the success of inclusion. According to Ocloo (2002), teachers' knowledge of inclusive education increases their ability to provide modifications for pupils of diverse needs in the same classroom. However, as indicated by the findings from the study, teachers in inclusive schools in the study area lacked adequate knowledge, skills, and techniques to practice inclusion due largely to inadequately preparation for inclusion. Without adequate training and preparation, teachers would be less sensitive and responsive to the needs of children with special needs, which would in turn affect the participation and performance of the children. The importance of teacher preparation before the introduction of new educational policies was stressed by Hardman, Drew and Egan (2002), who argued that preparing teachers who will deal with children with special needs demands skills, expertise, and knowledge that cannot simply be taken for granted.

Rather, there is a need for such skills, expertise, and knowledge to be carefully examined, articulated and communicated so that the significance of the role of the teacher might be more appropriately highlighted and understood within the inclusive education institution. Additionally, the findings of the study revealed that all the teachers were not briefed on what inclusive education is all about. The resource teachers as well as special education coordinator met teachers and learners as well as parents of children with special needs once and briefed them about admission of special needs children in regular school. It was established that most of these teachers could not explain what the inclusive education concept is, even at the time of study. This means, there is no collaboration between the implementers of the policy and teachers.

Embracing the Concept: Findings on the above subject revealed that most of the teachers liked the idea of having special needs children in their classrooms, although a few of them felt uncomfortable with the disabled pupils around them. This was evident in the way some of the teachers interacted with the special needs pupils when they felt no one was watching and the derogatory remarks they make about them. The apparent consensus among the respondents suggests that the inclusive educational policy appears to have been accepted by the classroom teachers, the head and the resource teachers although classroom teachers seemed to be unfamiliar with the policy.

In-Service Training: Findings from the study revealed that in-service training was not organized for all the classroom teachers who are directly involved in the teaching of these special need pupils. It was further revealed that instead of the classroom teachers, the head master of the school was rather selected to attend a 2 days course at Wenchi Municipal in the Brong-Ahafo region by the Special Education Division. The head master returned to the school without providing any effective training to their members of staff. This has limited teachers' effort to understand the concept of inclusive education in their educational settings.

5.2 The physical environment and how it affects the inclusion of the non-sighted. The findings reveal that about 95% indicated their unique challenges when interacting with the environment. According to the Disability right movement (2001) advocates equal access to public places, social, school environment, political and economic life which includes

not only physical access but also access to the same tools, services, organizations and facilities that we all pay for.

In relation to the first challenge (the girls' dormitory) a number of students explained that they found it difficult to use the cane when accessing the physical environment. This is because the environment is not tiled, erosion has taken the whole place and the ground floor is very deep about 6 mitres tall. This has compelled students in the school to rely on their sighted counterparts. It is true that consistent practice and use of the cane helps a user to develop familiarity with his physical environment, it was realized this familiarity has not been fully developed among majority of the students. Even though the school gives them orientation and mobility training. The students perceived the amount of time spent in teaching orientation and mobility in the school as being limited. For most of them, they argued that as a result of their impairment, their ability to identify obstacles within the classroom environment is hampered and this is because the environment is not accessible at all. The students therefore complained that it takes extended practice time to be able to develop familiarity with the various classroom blocks. Even though, they understood that there was an assigned time to teach them mobility skills their general impression was that the classroom environment is not accessible to visually impaired.

Their general impression was that, in front of the seniors block there is no guide rays to assist these individuals tray to their destination. In order to develop their skills in mobility and to move without bumping into any obstacles within their classroom environment there should be proper guide rays in any part of the class room environment to support trailing to their destination. Another challenge that was raised on the physical environment is the boys. It is well known that gaining familiarity in one's environment bust the person's ability to move about freely to their destination. However, most of the students indicated

that they find it difficult to move around the boys' dormitory. This is because there is a big gutter between the ground and the steers. However there is no guide ray to assist these individuals to their destination. This actually impedes movement using the white cane. While it is undeniable that navigating along ones environment among the visually impaired does not come handy but with a great deal of practice and application of the use of the white cane, the aforementioned challenges have impede students' efforts to develop mobility skill effectively since the barriers exit in this regard.

Lastly, one student express that he has difficulty in accessing the resource room. This because tables and chairs are not provided for a number of the students who also had difficulty in accessing the resource room for the visually impaired. This is because, tables and chairs in the resource room are not catered for and are spread in haphazard manner and this actually limits students desire to assess their own resource room. From the above discussion it should be noted that Wenchi Senior High School has a serious problem concerning physical accessibility and how it relates to students ability to participate even in social activities in the school.

5.3 Assistive technological devices available and how it affects the inclusive education at Wenchi Senior High School.

It was found that the school has a computer laboratory with 30 installed desktop computers which is supported with JAW software, 3 perkins braillers, 36 hand frame and stylus and 10 white canes. The resource teacher reported that these assistive technological devices were provided by some benevolent societies and other philanthropist. It was further established that all the students were introduced to these devices in primary One. And currently used them in learning, reading, typing, assessing information and also assessing their learning environment. It was also realized that about

95% of the students at Wenchi Senior High School express their views on the types of assistive devices available in the school. Their concerns were much particular with the state of these devices, training of student's in the use of these devices and inadequate material resources. As it has been stated in the literature, Assistive technology devices have become an essential tool for students with visual impairment. Studies showed that assistive technology devices have a positive impact on students with visual impairments' lives, such as motivating students (Cooper and Nichols 2007;Strobelet al., 2006) and developing positive relationships in their academic achievement (Trucano, 2005).

Assistive technology devices are essential for students with visual impairments to enhance learning, cognition, and social development (Size et al., 2004; Wong and Cohen, 2011). Researchers and practitioners acknowledge the use of assistive technology devices could change the lives of students with visual impairments. These devices have a positive impact on educational performance, including helping students access and understand their environment when it is in a good state (Cahi let al., 1996). Whereas the assistive technology when in good state enables the visually impaired to interact with his or her environment and assess information in the same way a sighted individual would, it was realized that students at Wenchi Senior High School have difficulty in using the devices in the school. This is because the devices there are too old and hence reduce efficiency when using it and perceived by the students to encounter many problems when using the computer at time the pronunciation of certain terms and words was perceived by the students to be different from their conventional understanding and this posits a challenge. It was as well noted that, there is always malfunctioning and sometimes sudden failure of the use of Perkins and JAWS application as is being used and the students believed it retards progress in their studies. In expressing this frustration, one of the students indicated,

"At times, the JAWS could stop working while being used and misplacement of keys in the use of perkins hence reducing efficiency". Upon further interaction, they explained that the type of the Perkins used in the school is old and times malfunctions when using it and JAWS that is being used in the school is unlicensed and is thus limited in some of its applications or functions. The students are therefore limited to access other uses of JAWS because they use the "cracked version" coupled with it inefficient functioning.

Another category of the students express the white cane available in the school are not enough as 38 visually impaired used 34 white canes and the computers in the school too are not enough. This is typified in one student's expressing ' *' we pair a times at the ICT lab whenever we have computer classes and also the canes are very few hence reduce our confidence in interacting with the environment' these categories of students were much concern with the adequacy of these assistive technological devices*. Another student who is a partially sighted said that assistive device like close circuit television could enhance his reading skill but these devices are not available in the school to facilitate inclusion. Also it was evidenced through the researcher's personal interactions with some of the students that the school does not have any orientation and mobility specialist to train the individuals hence students are left at the mercy of their sighted counterparts in the school. They opined that, had it not been the help they derive and proper used of their remaining senses, they would not have survived in the school. It should be noted that gaining familiarity with one's environment does not come handy but with great deal of exercise.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This study, with the broad objective to assess Wenchi Senior High School as an inclusive institution, specifically investigated: whether teachers in inclusive schools at Wenchi Senior High School were knowledgeable on inclusive education, if teachers in the inclusive schools were prepared to implement inclusive education, the use of assistive devices and the physical environment. This chapter deals with the conclusions and recommendations of the study.

6.1 Conclusion

The major findings were that there were children with special needs in Wenchi Senior High School. The needs include disability like visual impairment. Secondly, the study revealed that general education teachers in the area of the study do not have enough knowledge on the concept of inclusive education, though they embrace the concept. In embracing the concept the findings revealed that most of the teachers were in favour of having special needs children in their classrooms, although a few of them felt uncomfortable having pupils with disabilities around them.

Additionally, it was revealed that teachers were inadequately prepared for the programme. For example, they were not taught how to teach individuals with special needs. As a result, some teachers used teaching strategies that were unsuitable for the children.

Thirdly, the physical environment is also not accessible to the visually impaired considering the fact that there are no guide rays to assist these individuals to their destination and to interact with their physical environment, to call for smooth running of inclusive education at Wenchi senior high school. Again it was found out that assistive technological devices such as perkins brailler, hand frame and stylus, white cane, computer assistive technology available in the school are not enough and are also not in good

condition to facilitate inclusion. Considering the fact that the school have only three perkins brailler to be used by 53 students.

6.2 Recommendations

Based on the conclusions of the study, it is recommended that:

- The teacher should have a day or two observations training to enable them handle students with visual impairment in the school. Consistent in-service training should be organized for teachers to enable them manage the pupils with special needs in and outside the classroom.
- The resource teachers in the school should monitor the teachers to enhance effectiveness and prevent negative attitude by some of the teachers.
- The school physical environment should be designed to meet the unique needs of these individuals in the school and this will help students to interact with school environment without any fear and maximise their social relationship.
- The school should improve on the number of assistive technological device available in the school to facilitate inclusion and the ICT lab should be installed with new computers.

Suggestions for future research

- The role of teachers in the implementation of inclusive education by 2019 in Ghana.

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CONSENT FORM

Statement of person obtaining informed consent:

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

DATE: _____ NAME: _____

Statement of person giving consent

I have read the information on this study/research or have had it translated into a language I understand. I have also talked it over with the interviewer to my satisfaction.

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

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

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

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

Name_____

DATE: _____ SIGNATURE/THUMB PRINT: _____

APPENDIX

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF MEDICAL SCIENCES

DEPARTMENT OF COMMUNITY HEALTH

SEMI STRUCTURED INTERVIEW GUIDE FOR HEAD TEACHERS, RESOURCE TEACHERS AND TEACHERS IN INCLUSIVE SCHOOL AT WENCHI SENIOR HIGH SCHOOL IN THE BRONG-AHAFO REGION OF GHANA.

Explain the goal of the research and introduce myself

A. Discussions

Please tell us your name, Rank, your job description, and how long you have been working in your present position.

The purpose of the research is to assess the performance of Wenchi Senior School as an inclusive education institution. Participants are assured of anonymity and every information would be kept confidential.

School:

Region:

Interview date:

Duration:

Qualification:

Rank:

Number of years teaching:

Number of years in inclusive system: MAIN QUESTIONS

Teachers' knowledge on the concept of inclusion 1.

What does inclusive education mean to you?

2. 2. What was your perception about inclusive education before it was introduced in your school?
3. What is your view about inclusive education policy now?
4. To what extent do you support the policy?
5. What do you think inclusive education can offer society?
6. How does the knowledge on the concept of inclusion impact your attitude towards students with special needs?
7. How does this knowledge impact on your work as a teacher?
8. What are your challenges in the implementation of inclusive education?

The physical environment

1. What is your thought about inclusive environment?
2. Which type of environment do you think can help individuals with disabilities for social inclusion?
3. How do you view the physical environment of your college?
4. Do students with disabilities find it difficult to assess the physical environment of this school? If yes why and if no why?
5. What is your suggestion about the school environment for social inclusion?

Availability of resources

1. What type of material resources exist in your institution for social inclusion?
2. How do you assess materials available and other support services?
3. Do you access existing resources if any?
4. What type of support services are available?
5. How accessible are these support services?
6. Are they able to meet your needs? If yes how. If no how?