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**ACADEMIC EXPERIENCES OF LEARNERS WITH VISUAL IMPAIRMENTS IN
MAWULI SCHOOL, HO**

AHIABLEY SIMON

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(Special Education) in the University of Education, Winneba

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DECLARATION

Student's Declaration:

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

SIGNATURE.....

DATE.....



Supervisor's Declaration:

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of thesis as laid down by the University of Education, Winneba.

SUPERVISOR'S NAME: DR. AWINI ADAM

SIGNATURE:

DATE.....

DEDICATION

I dedicate this work to Mr. Arnold and Mrs. Barbara Quainoo of Assin Fosu in the Central Region for their godly act of love displayed in financing my M. Phil education.



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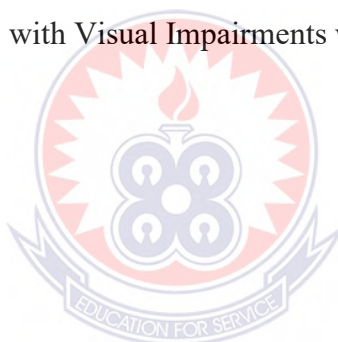
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ABSTRACT

The aim of the study was to investigate the academic experiences of students with visual impairments in Mawuli School, Ho. A phenomenological research design was used for the study. Nine students with visual impairments were engaged using purposive sampling technique. Focused group semi-structured interview guides were used to collect data. Data were coded and analyzed using themes. Results of the study showed that most staff of the school was able to modify lessons appropriately and adapt their teaching pedagogies to suit the learning needs of students with visual impairments except some few who needed reorientation. Also, there were in excess of Brailled materials but the low vision lacked almost every resource that could help their learning. There was lack of qualified ICT resource teacher to help in the effective use of assistive technology yet their 2 Resource Teachers were commended. They also had accessible Resource Centre which contained their library. They also enjoyed extra time for all their works. Students were satisfied with the varied modes of assessment of academic performances yet believed data on their academic performances were poorly handled. Therefore, it was recommended that the Special Education Unit of the school should periodically organize sensitization workshops for regular teachers and to facilitate effective data management for their students with visual impairments. The Resource Centre/Library should be fully stocked with materials for students with different degrees of visual impairment. Finally, a well-trained resource teacher with ICT background should be employed to support their training in ICT.

CHAPTER ONE

INTRODUCTION

1.0 Background of the study

The academic experiences of students with special educational needs are very essential in their educational pursuit. What students are exposed to in the educational environment influences their acquisition of competences, skills and knowledge they will acquire (Bhan, 2012). This means that positive academic experiences of learners will lead to the production of knowledgeable and skillful individuals with wonderful competences for life.

Academic experiences are all the things that occur to a learner; both positive and negative in an academic pursuit or environment. Academic experience could also be thought of as attitude, behaviour, skills, knowledge, and emotions that one develops as a result of his or her personal encounters made with people, systems, structures and procedures in an academic environment. According to the Collins English Dictionary, (2019) academic experience could be explained as all the things that relate to the work done in schools, colleges, and universities especially work which involves studying and reasoning rather than practical or technical skills.

Furthermore, Chartered Institute of Management (CIMA) defines academic experience as any work experience obtained in an academic environment. CIMA has identified four areas of consideration that contributes to the acquisition of experiences in an academic environment. These areas include consultancy and assignment, research and publication, management and administrative activities among other experiences.

Academic experiences to a larger extent serve as the driving forces which enhance or militate against effective academic life of the individual. Positive academic experiences such as access to academic information, availability and adequacy of resources as well as appropriate pedagogy and content modification which are varied intermittent in order to meet the academic needs of learners with visual impairments resulting in the development of excellent

understanding, conception, retention, and application of knowledge, skills and competences gained.

For learners with visual impairment to be brought up holistically, they need an inclusive experience. When students with visual impairments, are raised in inclusive educational environment they develop different competences which will help them in their later lives. Avoke and Avoke (2004) stressed on the benefits of inclusive education as having the potential to reduce fear and build friendship, respect and understanding. Students need an education that will help them to develop relationships and to prepare them for life in the mainstream society.

Academically, students with visual impairments face tougher situations in their struggle to understand concepts and access the curriculum. Acheampong (2017), citing Heward (2012) opined that, persons with visual impairments experience more strenuous day concerning normal pupil activities than those without impairments. These practical problems pose a continuous hindrance in their academic work. Heward further stated that, access to the content of the curriculum through appropriate methodology, learning materials, permanent seats in the classrooms, computer laboratories and modifications in quizzes and examinations materials remains challenging for learners with visual impairments.

Making an inference from Matshdisho, (2010) as stated below, students with disabilities, especially those with visual impairments, require extra support to cope with their lives in mainstream environments. The Resource Centre for Students with Special Needs (Disability Unit) is recognized as an important wheel for including learners with disabilities. This is because many students with disabilities attribute their adjustments in educational environments to the support of disability Units Matshedisho, (2010). In view of above, resource Centre must have qualified support personnel that will train students with visual impairments to move about freely and independently in the environment, to use new

technology in learning and to provide learning materials in accessible formats such as Braille and electronic.

Historically, the national policy with respect to education of students with disabilities in Ghana segregated persons with disabilities and gave them separate education in Special Schools. A typical example is School for the Blind at Akropong Akuapem. 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; Ministry of Education, (2004). Inclusion of individuals with disabilities seeks 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 organized 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).

Barriers to positive experiences regarding academic interaction with lecturers in terms of content modification and pedagogical adaptations, access to various kinds of learning resources in their right quantities, and appropriate assessment approaches must be removed to promote the holistic development of students with special needs. Students should be provided with opportunities and options at different levels to access educational and academic

experiences within the school, Soreci, (2005). This will reduce the marginalization students with visual impairments go through in the course of their stay on college campuses. The Republic of Ghana's Persons with Disability Act; Act 715, (2006) gives persons with disabilities rights to quality education, respect and human dignity, and provides that the state shall be responsible for ensuring that they realize their full mental and physical potentials. It is therefore, society's obligations to provide education to all people, according to the nature of their individual's needs and capacity. Some learners with visual impairments I have encountered from different schools often times complain that they have only been dumped in the regular mainstream school environment without being served the needed support in order to achieve the needed academic prowess. They lament about being given but a little attention or on the worst day, being totally ignored throughout the precious instructional period and other aspects of academic experience. This was evident through my long period of contact with them as colleague students at the Presbyterian College of Education, Akropong Akuapem and University of Education, Winneba. Haven had a further touch with some of these students with visual impairments in other educational institutions such as Ghana National College in Cape Coast whiles doing my internship and also in Mawuli School, Ho as a Resource Teacher paints a similar picture of their thoughts and feelings which they verbally express.

At the international level, learners with visual impairments have received a lot of support. For example, in Brazil, learners with visual impairment receive legal support towards their education as stated by Leandro et. al, (2018) that education is a right of individuals with visual impairment that must be secured at all educational levels in the country. Research has shown that similar support services have been offered to learners with visual impairment across the African Continent. For example, learners with visual impairments have received learning support in Botswana and in Zambia they have been supported with governmental educational policy framework of 1996; Annie et al, (2019). In spite of the above, the studies

did not indicate the very academic experiences these learners go through even with the support they offer them. The academic experiences of learners with special educational needs are important in their total educational pursuit. What students are exposed to in the educational environment can influence the kind of skills and knowledge they will acquire (Bhan, 2012).

The academic experiences of learners with visual impairments in regular institutions cannot be documented without hearing from them the meaning they make out of what they go through.

For the purpose of this study, these academic experiences have been categorised into four main strands with their respective sub-strands as follows:

The experiences of learners with visual impairments in Mawuli School, referring to their contact with teachers' teaching pedagogy and curricular content.

The experience of students with visual impairments with regards to availability and adequacy of resources.

The responses of students with visual impairments to the modes of assessment of academic performance.

The reactions of students with visual impairments with regards to access to library service; access to library building, furniture, and information in large prints, electronic and braille formats.

Mawuli School, for over a decade now has been practicing inclusive education but no much attention has been offered to research into the academic experiences of learners with visual impairment in the school. This situation consequently started to have a negative effect on the enrolment of students with visual impairments in the school and further led to the drop out of some of the students

This menace as mentioned above has drawn the researcher's attention and interest to investigate the situation, find out the very facts of academic experiences of learners with

visual impairments in Mawuli School, Ho to be specific that can help in the revamp of the implementation of the inclusive education policy and its practice in general.

1.1 Statement of the Problem

Successive governments of Ghana from the early 2000s to date have made conscious and pragmatic efforts through policy formulation and implementation in order to create a welcoming and safe, educational environment for the disabled. The attempts they made were also geared towards providing the best opportunity for persons with visual impairments to be able to effectively learn with their sighted counterparts in regular mainstream schools. The purpose was to help them to develop positive academic experiences among other things. Mawuli School, Ho commenced the implementation of Inclusive Education policy by admitting her first batch of students with visual impairments in the 2012/2013 academic year with five students who had visual impairments from mild to profound. This number has increased over the years to a total of 18 students with visual impairments as at the 2019/2020 academic year with a present total of 16 students in the 2020/2021 academic year; yet, not much is known about their academic experiences. The academic experiences of learners with visual impairments in regular mainstream institutions cannot be narrated without hearing from them, the meaning they make out of what they go through. In addition, their daily experiences cannot accurately be seen from afar without giving ears to how they perceive it. Though, some studies were conducted on the experiences of learners with disabilities in inclusive education settings in some basic and senior high schools (Awini, 2015; Mantey, 2011; Rockson, 2014), yet the academic experiences of learners with visual impairments of Mawuli School has never been explored. The phenomenon led to persistent complains by students with visual impairments against the inclusive education programme being practiced in the school. The situation above got to be known at School for the Blind in Akropong Akuapem which is the main feed school for Mawuli School in terms of enrolment of students with visual impairments. The situation was so alarming that the inclusive education programme in

Mawuli School seriously suffered the consequences. This indicated, that the academic pursuance of learners with visual impairments and the effects it was having on them was still gloomy; thus not known. It was against this background that the researcher decided to investigate the actual academic experiences of students with visual impairments in the school. Studies have established the positive impact of use of learner-friendly pedagogies, appropriated content or curriculum, availability and adequate supply of resources, effective assessment of students' academic work, as well as availability of information (educational materials) in accessible formats on the performances of learners. Some research has further highlighted the difficulty that faces students when the above is absent or not effectively handled (Anderson et al., 2006). However, it is not clear the nature of academic interactions that exists between learners with visual impairments and their teachers in Mawuli School. Also, the extent of resource availability and in the right quantities cannot be ascertained. Again, the level of assessment of learners' work is unknown. Furthermore, the ability of learners to access information in the appropriate formats for their consumption is undetermined.

1.2 Purpose of the Research

The study examined academic experiences of students with visual impairments in Mawuli School, Ho in order to shed light on the state of the inclusive education programme which is happening in the school

1.3 Specific Objectives

The objective of the study was to explore the academic experiences of students with visual impairments at Mawuli School, Ho in the Volta Region of Ghana. The study specifically sought to:

- Examine the nature of academic interactions between learners with visual impairments and their teachers.
- Explore availability and adequacy of resources for learners with visual impairments.

- Examine effective assessment of academic work of learners with visual impairment by teachers.
- Find out how students with visual impairments access information in the school in terms of;

access to library buildings and its furniture as well as access to information in large prints, electronic, and braille formats.

1.4 Research Questions:

1. How excellent is the academic interaction between students with visual impairments and their teachers in Mawuli School?
2. What is the quality and quantity of academic resources at the disposal of students with visual impairments in Mawuli School?
3. How efficient are academic assessment strategies for students with visual impairments in the School?
4. How do students with visual impairments access academic information in the School?

1.5 Significance of the Study

The results of the study would help in illuminating the state of academic interaction that exists between students with visual impairments and their teachers. This would inform teachers on what may be going wrong or otherwise in making the curriculum accessible to students with visual impairments through the right application of pedagogies. Also, the results of the study would further help in revealing the level of academic resource and support students with visual impairments receive from the Resource Centre for Students with Special Needs in Mawuli School. This would enable personnel at the Resource Centre to improve on the level of support for the students.

Additionally, the results of the study would help in revealing how students with visual impairments access to academic information in the right formats. This would also enable the library and resource staffs to make necessary provisions available to students with visual

impairments to promote accessibility of library materials in their school's libraries. Furthermore, the results of the study would help to identify and analyze the various modes of assessing the academic work of students with visual impairment in Mawuli School. Finally, the result of the study would end up in adding up to existing literature for any researcher interested in similar studies.

1.6 Delimitation of the Study

In spite of the fact that, there were students with visual impairments in various Senior High Schools in Ghana, this study focused on only students with visual impairments at Mawuli School. The study only explored the academic experiences of students with visual impairments with special reference to their academic interaction with their teachers, the kind of support they receive from the Resource Centre/Library, access to information in the right formats, and how they are being assessed in their academic endeavors.

1.7 Limitations of the Study

The study was confronted with difficulty scheduling appointments with students with visual impairments for the focus group discussions on week days because they were in different classes and had different free times when the researcher could meet them. Additionally, they also complained of being very exhausted after the close of the day's work and so could not grant audience to the researcher. The researcher overcame this challenge by consulting participants to schedule the focus group discussion on Saturdays where they had some leisure time. This delayed the data collection period. In spite of these limitations, the result of the study was not significantly affected.

1.8 Operational Definition of Terms

1.6.1 Inclusion

Inclusion is defined as the state or a process of addressing and responding positively to the diversities that exists among the students, through modifying and changing the education

systems, to accommodate all children regardless of their physical, socio-emotional, and intellectual and other types of conditions.

1.6.2 Visual Impairments

In this study, visual impairments referred to both blindness and low vision. Educationally, a student with low vision is the one who has some vision, and therefore can read enlarged prints. On the other side, an educationally blind child is the one with very limited or no vision and thus relies on reading and writing by using the braille system or by using audio tapes.

1.6.3 Adaptation

The context of adaptation in this study is the modification of the entire teaching and learning environment; curricular content, pedagogy, learning aids, among others to suit individual needs of all students in inclusive classrooms.

1.6.4 Regular Teacher and Special Needs Teacher

In this study a regular teacher is referred to as one trained to handle students' classroom needs in general while a special needs teacher is the one trained to deal with specific educational needs of learners in inclusive classrooms.

1.6.5 Academic interaction: this is the various engagements that students undergo in any academic environment even as they come into contact with teachers, colleague students, and other educational workers who impart various skills, knowledge and competences to them.

1.6.7 Experience: Experience, which synonymously means occurrence, event, encounter, an adventure, acquaintance with, or exposure to, can be explained as the practical contact with an observation of facts or events. It's also, an event or occurrence which leaves an impression on someone.

1.6.8 Resource Centre for Students with Special Needs/Resource Centre: Any unit, department, office or directorate in (regular institutions) basic or higher institutions that provide support to students with special needs.

1.6.9 Students with visual Impairments: Students with visual impairments is an umbrella concept encompassing students with various degrees of visual loss. It is used to mean both students with low vision (partially sighted) and those who are blind.

1.7 Organization of the Study

In line with the in-house style of the University of Education, Winneba (UEW), this thesis was presented in five chapters. Chapter one comprised of the background to the study, statement of the problem, aim and objectives of the study, research questions, significance of the study, delimitations of the study, limitations, and operational definition of terms and general layout of the study. Chapter two focused on the literature review taking into account the research objectives and the theoretical framework of the study. It also considered issues on the empirical and conceptual review of literature. Chapter three dealt with the methodology including sample and sampling techniques, research design, population, instruments used in data collection and analysis, description and distribution of instruments. Chapter four covered the presentation and analysis of data collected. It further illuminated on interpretation and discussion of results. Finally, chapter five concluded the whole work with summary of findings, conclusion, recommendations and suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

This chapter presents the literature reviewed for the study. The literature was reviewed from research articles, refereed journals, and books. The literature reviewed covered the theoretical framework and also reviewed on the key themes raised in the research questions. The areas covered were: Theoretical Framework, Conceptual Review and, Empirical Review.

2.1 Theoretical Framework

The study adopted Kolb's (1984) Experiential Learning Theory. In simple term, experiential learning theory (ELT) is about learning by doing. As the name suggests, ELT involves the transformation of experience into effective learning. Kolb's experiential learning theory stresses how our experiences, including our thoughts, emotions and environment, impact the learning process.

The model was published in 1984 by David Kolb, an American psychologist, professor and education theorist. Kolb's theory describes the learning process whereby knowledge is created through experience. The theory explains that concrete experience, reflective observation, abstract conceptualization and active experimentation form a four-stage process (or cycle) transformed into effective learning. Concrete learning occurs when a learner has a new experience or interprets a previous experience in a new way. For example, a nursing student has to learn a new procedure as part of their clinical education.

Reflective observation – the learner reflects on the new experience to understand what it means. In our example, the nursing student might think about how they could have done the procedure better.

Abstract conceptualization – the learner adapts their thinking or constructs new ideas based on experience and reflection. For example, the nursing student realizes they need to have all their materials ready before starting the procedure.

Active experimentation – the learner applies their new ideas to real-world situations to test whether they work and see if any changes need to be made. This process can happen quickly or over an extended time.

Before starting an experiential learning programme, it is wise to figure out how much work is involved and the appropriate entry point of the learner. Kolb explains that learners have natural preferences for how they enter the experiential learning cycle. According to him, “because of our hereditary equipment, our particular past life experiences, and the demands of our environment, we develop a preferred way of choosing,” Reasoning with Kolb, educational researchers such as; Lee et al. (2003) have created a criterion that makes a project to be truly experiential. These include a personally meaningful goal to the student, personal student engagement, and involvement of the whole person in the learning experience (including their senses, emotions, and personality). Applying Kolb’s learning theory has incalculable benefits for students, educators and employers. In highlighting the benefits of Experiential Learning Theory (ELT), Alkan, (2016, p. 22) concluded that experiential learning can positively impact learners’ academic achievement and learning outcomes because it promotes going through a process of experiencing, reflecting, thinking, and acting upon their own experiences. Further, Alkan investigated experiential learning’s effects on student teachers’ achievement in chemistry and their scientific process skills. As Alkan (2016) stated, the experiential learning stages/process can “enable students to be aware of their professional identities, question their actions and note the importance of their suspicions” In addition, Arnold and Paulus (2010) used ELT as a theoretical framework for their study with pre-service teachers. In their study, the future teachers learned how their future students might use technology in their classroom by experiencing and using technology themselves first. By doing so, they learned how their future students might use that technology. The Experiential Learning Theory (ELT) process also allowed them to reflect and think about any potential challenges that their students might face. The model of ELT could be used for both teaching and research purposes.

2.1.1 THE IMPACT OF THE THEORY ON THIS STUDY

For purposes of this research, the researcher chose to follow the same four stages and sequence in the study to either gain more understanding or to reach concrete conclusions regarding the area of interest. For example, referring to research question 1 which talked about the nature of academic interactions which existed between students with visual impairments and their teachers, the researcher desired to know from participants the following:

1. The new concepts that are presented to them for learning,
2. How these concepts are being presented,
3. The involvement of participants in the development of the new concept,
4. How participants apply the new concept in their daily lives.

It was observed from the study that most teachers of students with visual impairments in Mawuli School, Ho were able to handle the application of the ELT appropriately. The study further deepened itself in ensuring that students try their best in practicing new concepts that teachers present to them daily for mastery. This was to strike a balance between theoretical concepts and practical application

Human beings, whether explicitly or implicitly, usually follow the same process of reflecting, thinking, and acting upon daily challenges that ELT suggests. It could be used, highlighted, and emphasized in teaching and learning contexts as a way of thinking and approaching new experiences. By following these four stages, students can transform their experiences and daily challenges into more meaningful sources of knowledge. Ultimately, ELT promotes the idea that learning comes through experiencing and could be supported by following the four-stage model of this theory.

3.2 CONCEPTUAL REVIEW

The conceptual framework of the study was built on the research objectives of the study. They are as follows:

The nature of academic interactions that existed between students with visual impairments and their teachers in Mawuli School, Ho.

The experiences of students with visual impairments with regards to provision of academic resources in the school.

The responses of students with visual impairments to the academic assessment strategies designed for students with visual impairments in the school.

The reactions of students with visual impairments in light of access to library service; access to library buildings, furniture, information in tactile, large prints, and electronic formats.

2.2.1 How Experiential Learning Benefits Students

According to Kolb, experiential learning has many benefits for students, which include the following:

- i. **Development of Practical Skills.** Kolb suggests that the active engagement in real-world experiences the individuals acquire tangible skills that are more readily applicable in professional settings. Through experimentation and repeated practice, learners can enhance their abilities to solve problem, communicate effectively, and make informed decisions. The student has the chance to immediately apply the experiences, which supports knowledge retention and improves motivation, as students are more excited about learning in real-world situations. It also promotes learning through reflection, which deepens and strengthens the learning experience, the chances to make good use of their preferred style of learning, enhancement of teamwork because experiential learning often involves working as part of a team. It offers the opportunity to prepare for future work

through genuine, meaningful real-world practice. It gives the chance to meet colleagues and potential employers, Kolb, (1984, P. 32)

- ii. **Enhancement of Critical Thinking and Problem Solving Skills:** On page 45, Kolb indicated that experiential learning encourages learners to face challenges and solve problems in real-time, which promotes the development of critical thinking skills. By actively engaging in problem-solving activities, students can apply theoretical knowledge to real-life scenarios, analyze situations, and formulate innovative solutions. Kolb argues that this process helps learners to think critically, adapt to changing circumstances, and view problems from multiple perspectives.
- iii. **Increasing Motivation and Engagement:** Kolb opined that experiential learning provides a more engaging and motivating learning experience compared to traditional passive methods. According to Kolb, learners who actively participate in experiences are more likely to be motivated and invested in the learning process. By being actively involved, learners can develop a sense of ownership and autonomy over their learning. This, in turn, leads to increased motivation, as they recognize the relevance and applicability of their learning to real-life situations; Kolb, (1984. P. 71).
- iv. **Enhancing Retention and Transfer of Knowledge:** Kolb posits that experiential learning facilitates better retention and transfer of knowledge compared to rote memorization. When students engage in hands-on experiences, they create meaningful connections between abstract concepts and real-world applications. This active learning process enhances knowledge retention and the ability to transfer knowledge to different contexts; Kolb, (1984, p. 99)

2.2.2 How Educators Apply Experiential Learning to Benefit Students

According to Kolb and Kolb, (2005. 4(2), 193-212), for educators, utilizing experiential learning can allow for developing highly engaging and appropriate learning opportunities for students, supporting your reputation as an educator of choice for preparing students for the real-world workforce. It also helps in designing learning and reflective activities that allows students to learn in ways that suit their preferred learning styles. It ensures your students develop skills that enhance employability and optimize their chances of future success. Educators employ the 4 leaning cyclical stages propounded by Kolb. These are concrete experience, reflective observation, abstract conceptualization, and active experimentation. Kolb emphasized the crucial role of educators in facilitating experiential learning. Educators act as guide, creating an environment that encourages students to actively engage in the learning process.

Educators should promote active participation through hands-on experiences, simulations, group discussions, and role-playing exercises. Additionally, educators should provide opportunities for learners to reflect on new concepts for better understanding, retention, and application. Furthermore, educators should help to bridge theory and practice; by trying to connect abstract conceptualization with practical application. Finally, educators should ensure regular feedback and evaluation.

2.3 EMPIRICAL REVIEW

2.3.1 Learners' Experiences through Curriculum Modification and Pedagogical Adaptations

2.3.2 The curriculum/ content

(Howie & Plomp, 2005) cited in (Acheampong, 2017), curriculum is the means and materials with which learners interact for the purpose of achieving identified educational outcomes (Edward, Ebert, & Bentley, 2013). The curriculum has some deficiencies which do not embrace learners with disabilities including learners with visual impairments. Teachers are

therefore, expected to make up for the deficiencies in the curriculum and in educational resources. The curriculum designed for “ordinary” children is generally appropriate for children with visual impairments. However, some adaptations have to be made to the learning materials and the teaching approaches so that the learning needs of due consideration is given to the children's intellectual, personal, emotional and social developments. To teach children with visual impairments, the teacher should adopt a consistent, realistic and flexible approach in curriculum planning and implementation. This chapter discusses possible adaptations to the curriculum, taking into account the learners’ visual impairment; their abilities and learning needs.

Curriculum is an important element of education. For learners with visual impairments, experiences and concepts casually and incidentally learned by sighted students may need to be systematically and sequentially taught. Indeed, students with visual impairments may need instruction in a variety of specific skills - identified as the expanded core curriculum. The curriculum should be balanced with due consideration given to the children's intellectual, personal, emotional and social developments. To teach children with visual impairments, the teacher should adopt a consistent, realistic and flexible approach in curriculum planning and implementation.

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 means that the content of instruction should be adapted by the teacher to make provision for both higher and lower achievers. Adaptation of curriculum deals with reorganization of the content of curriculum, curriculum materials and tools, instructional period as well as other

support services that are needed in lesson delivery. The task of adapting instructional materials to the needs of learners with low vision adds to the regular teacher's anxieties. In inclusive settings, instructional materials that are used by the teacher to facilitate performance by the individual learner need to be such that it suits the specific needs of the learners. 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 learners; match the structure of the academic subject and objectives of the lesson to be taught (Obi & Mensah, 2005).

Learners with visual impairments require positive in-class interactions that meet their needs to enhance their social and academic performance. However, how to differentiate instruction for increasingly heterogeneous groups of students is arguably the greatest dilemma faced by classroom teachers today (Cameron, 2014). Ford, Davern and Schnorr (2001) contended that teachers' interactions with persons with disabilities were poor because they were not well-inclined to disability issues and so they did not address the challenges in the inclusive classrooms. If learners with disabilities are to fully participate in the teaching and learning process, instructors need to have an understanding of the needs of students with different disabilities and gain the skills to facilitate the learning needs of those students (D'Andrea & Gosling, 2005; Wolanin & Steele, 2004).

On the other hand, teaching pedagogy can be simply described as a means to an end. It is therefore the process, approach, way, methodology or technique of imparting academic knowledge, skills and competences embodied in the curriculum to learners in order to make a permanent impression on their perception, understanding, and actions. Darling-Hammond (2017) was of the view that pedagogy refers to the theory and practice of teaching. It encompasses a wide range of instructional strategies, techniques, and approaches that educators adopt to engage and empower learners in the process of knowledge acquisition. He further indicated that, teaching pedagogy has different components such as curriculum design,

instructional methods, and assessment strategies. Darling-Hammond opined that among the significance of teaching pedagogy are: student engagement and motivation, individualized learning, development of critical thinking and creativity among others.

Any attempt to educate the child intellectually and emotionally and for action must take account of those characteristics. The components in the child's overall educational growth are physical and mental maturation, experience, formal teaching through language, and an urge in the learner to resolve discrepancies, anomalies, and dissonances in experience. What is required of teachers is that they enjoy and be capable of sharing with children work programmes designed to modify their experience and understanding. That means making relevant experience available to the student at the right time. Baraka (2013) argued that, for a very long time, learning has been considered as a product of teaching. Teachers have been mostly using non-participatory strategies which are not effective in inducing learning. An effective teaching is more than merely transmission of information from teachers to students, but rather a complex interaction between the two parts (Webster & Roe, 1998). Therefore, a paradigm shift is required from non-participatory, traditional teaching to modern teaching that involves an interaction between a teacher and a learner, where different needs of learners are considered Bowring- Carr & West-Burnham, (1997). However, teaching in inclusive classrooms is not easy, since teaching needs to be more individualized as compared to normal classrooms, where there are little diversities among learners (Peters, 2003). Furthermore, it has been pointed out that, the degree of visual abilities varies among the learners leading to variation in learning needs and learning strategies for learners Salisbury, (2008). It is this degree of severity that will determine the extent of understanding how the world is organized, and how it can be acted upon Webster & Roe, (1998). As a result, learners with visual impairments require unique ways of addressing their academic problems. Therefore, it is important that teachers understand this desire to be able to predetermine teaching approaches to be used for effective teaching Salisbury, (2008). The support these teachers should provide

to students with visual impairments should base on the use of different sensory stimulations, such as sounds, smells, textures and shapes, to help them build a picture of the world Webster & Roe, (1998). Research shows that, quality teachers are the ones, who are the best at including students with diverse learning needs Mastropieri & Scruggs, (2010). Since inclusive education insists on adaptive teaching, a quality teacher should be the one who considers these adaptations for students' learning. Although we talk of these modifications and adaptations of teaching and learning environment, in some instances adaptation is not necessary, meaning that, teaching strategies and other practices applied to sighted students can also be applied to students with visual impairment Raymond, (1995); Spungin, (2002).

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 undoubtedly 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, (2006). 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. 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. 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).

Although, evidence abounds in the literature on the need for sufficient in-service training for teachers or faculty on accommodations and adaptations of methodology for teaching students with disabilities in inclusive classrooms Cameron & Cook, (2007)); Longtin, (2014); Murray & Flannery, (2008); Mushome & Monobe, (2013), teachers in developing countries such as Ghana have generally not received sufficient training on accommodations and adaptations to effectively teach students with disabilities in regular classrooms. This has caused general education teachers the difficulty in making adaptations to meet the needs of individual students Bulgren, et al, (2006). Studies conducted on teacher–student interactions have consistently found that students with special needs receive a greater proportion of one-to-one teacher attention than do students without disabilities in inclusive classrooms Kemp & Carter, (2002); Lee et al, (2010).

Cameron (2014) cited in Acheampong (2017) used the mixed-method approach to examine teacher-student interactions in inclusive classrooms in Ohio-USA. Semi-structured interviews and observation (Inclusive Classroom Observation System) were the methods used to gather data from students with and without disabilities and educational professionals (i.e., general educators, special educators and paraprofessionals). Seventeen teachers were observed during interaction with the students in the classroom. This was followed by interviews of six out of the seventeen teachers. It was found that a large portion of class time was devoted to whole group instruction provided by general educators, followed by brief periods of one-one interactions directed towards individual students, most frequently students with disabilities. Teachers were aware of the greater individual attention devoted to students with disabilities and described a number of ways that they adapted their instruction for effective teaching. It was also found that participants struggled with the dilemma of balancing their attention

between students who need it most and ensuring that the class as a whole made adequate progress. The current study is different from that of Cameron because the current study did not include para professionals. The current study did not also include observation as a data collection instrument. The current study only employed semi-structured interviews in gathering the needed data.

Acheampong (2017) citing Kuyini and Desai (2008) also examined the provision of instructions to students with special needs in inclusive classrooms in Ghana. Thirty-seven teachers from twenty primary schools in two districts were participants for the study. A multi-stage cluster sampling procedure was used to select the two districts and the twenty schools from the two districts. The participants completed a Background Information Questionnaire (BIQ) and were also observed during instruction in their classrooms using The Effective Teaching Practices Checklist (ETPC). Descriptive statistics, t-tests and regression analysis were used to analyze data. The results indicated that teachers' experiences on working with students with disabilities were the background variables most predictive of adaptive teaching. The teachers were also found using more generic teaching practices with limited or no adaptations tailored to the needs of included students. Again, it was found that increased teacher exposure to students with disabilities and further professional development would lead to increased teacher capacity to provide more adaptive instructional practices and ensuring that individual needs of students with disabilities are adequately addressed in inclusive classrooms. The current study gathered data from students with visual impairments and also employed only interviews in collecting data.

2.2.2 Learners' Experiences through the Pedagogy of Teachers

For many years, teaching in higher institutions has been dominated by the teacher-centered instruction where lecturers make all the decisions concerning the choice and organization of the content, interpretation and application of concepts, and the means of evaluating student learning while the students' efforts are focused on recording the information Weimer, (2002);

Ahmed, (2013). In the teacher-centered teaching style, the teacher controls what is to be taught and how students are presented with the information that they learn. In recent years, however, there has been a shift from the traditional teacher-centered style of instruction to new pedagogical approaches to improve student motivation, autonomy and achievement Fernandes et al., (2012). Weimer noted that the student-centered or learner-centered teaching style has now replaced the teacher-centered teaching style in higher institutions. Student-centered teaching is rooted in John Dewey's constructivist teaching philosophy, which advocates that student learn by doing and experiencing rather than depending on the teacher's wisdom and expertise to transmit knowledge Brown, (2008).

Wohlfarth et al. (2008) contended that, in the learner-centered classroom, the teacher abandons lecture notes and multi-bullet point slides for a more active, engaging and collaborative style of teaching. They further stated that the focus of this teaching style is on how students learn instead of how teachers teach. In the student-centered teaching style, there is a shift in the responsibility of the learner as a passive receiver on information to active creator knowledge. Slunt and Giancario (2004) espoused on this view commenting that the learner-centered teaching style provides the opportunity for students to take control and responsibility of their learning by being actively involved in the learning process rather than simply passively receiving information from a lecturer. In learner-centered instruction, knowledge is constructed by the students and the lecturer only acts as a facilitator of learning rather than a presenter of information O'Neill, & McMahon, (2005).

Teachers, who believe in student-centered instruction, rely heavily on hands-on activities, small group work, projects, and discussion to engage students and encourage active participation in class Garrett, (2008). The student-centered instructional style, which involves group work, projects and discussion, have been found to be most advantageous to students including students with disabilities. Students who experience student-centered instruction involving group work and discussions get the opportunity to learn to co-operate with one

another, take up leadership roles such as writing or presenting their assignment and facilitating the group, learning communicative skills from their group members, and also, learning problem solving skills as they try out their own ideas on other students and the instructor Aaronsohn, (1996); Al-Zu'be, (2013); Walters, (2011); Zhang, (2003). Wohlfarth et al. (2008) further found that students felt respected as learners, developed their critical thinking skills, and encouraged their self-directedness when they experienced the student-centered form of instruction. Weimer (2013) believed that the student-centered style of instruction supports the inclusion of all kinds of students including students with disabilities. Al-Zube concluded that teachers also benefit from the student-centered style of instruction as they also learn from the students and the activities they carry out. Majoka, Khan, and Shah (2011) compared the achievement scores of 7th-grade students in social studies in public schools in Pakistan. The quantitative experimental study sampled 100 students for the study. 50 students each were placed in the control group and the experimental group based on the mean scores of a pre-test. Two teachers having the same academic qualification and teaching experience were selected for the study. Students in the control group were taught using a lecture method for each of the three parts of the lesson while the experimental group experienced one day of direct teaching followed by a worksheet and team time. The pre-test and post-test scores served as the data of the study. Statistical tools used in the study were standard deviation, effect size, and percentile point gain. Majoka, et al. found that learning in a cooperative classroom enhanced the students' ability to learn in the subject of social studies. They further found that cooperative learning proved to be more effective than the traditional method for students labeled as high and average achievers. Unlike the Majoka, et al. study, the present study adopted the phenomenological design and also focused on only 16 students with visual impairments. In a case study conducted in South Africa by Mushome and Monobe (2013) which employed the mixed approach, 20 students with visual impairments were interviewed using semi-structured interview items and twenty lecturers were given

questionnaires. Among the findings of the research was that, there were no specialist lecturers who could teach students with visual impairment, and due to the lack of experience, most lecturers did not consider where the students with visual impairments sat during lectures. In effect, a few of the instructors considered the circumstances of students with visual impairments. The authors further identified lack of communication amongst important role-player such as specialist teacher and resource staff as a factor that denies students with visual impairment of accommodations. Instructors can modify how they deliver lectures to improve student outcomes. The more often students actively respond to instructional material, the more they are likely to learn. The difference between the Mushomme and Monobe study and the present study is that the present study adopted the qualitative approach and did not include instructors as participants.

Acheampong (2017) stated that a study conducted by Haihambo (2010), students with disabilities in Namibian higher education institutions expressed their dissatisfaction in most of their encounters with their instructors. One student with visual impairment remarked this way:

... I soon got a [tape] recorder, but it was not always efficient, and lecturers would not give you a chance to set it up. That's when I realized that unlike at school, lecturers do not spend time on greetings. They get straight to business. So, I was always battling between leaving the tape and just listen, or try to record from wherever I could. Even when you are recording, many lecturers move around in the room, sometimes going too far away from the tape. When they leave, they don't even say — I am gone. You just have to rely on the movement in class to know the lecture is over. (p. 302)

The above statements describe a few examples of classroom experiences of students with visual impairments in some educational institutions. The classroom experience of students with visual impairments at Mawuli School is yet to be unveiled and documented for improved practice.

2.3 Experiences of Students with Visual Impairments with Regards to Provision of Academic Resources

Academic resources are the human, material, tools/ equipment, time among other vitals that are available at the disposal of the learner which when efficiently utilised will result in the acquisition of skills, knowledge and competences needed for daily living. Academic resources serve as catalyst in the learning process by making abstract concepts real to induce and enhance learning.

Yale University (2021) defines academic resources as any out-of-class supports for your academic work. These can include: Office hours, Study halls, Study groups, Writing Center and Residential College Writing Tutors, Peer Tutoring, Academic workshops, Academic mentors (faculty, TFs, deans, administrators, peers), Student wellness and mental health services. In the 2017-2018 academic year, 51% of Yale undergraduates engaged with one of the Poorvu Center's academic support resources. Research conducted by the Poorvu Centre for Teaching and Learning; University of Yale (2021) indicated that many students come into Yale thinking of academic resources as something to seek out only when they are experiencing significant struggle in their academic work, they soon realize that academic resources at Yale are an essential complement to the learning they do in the classroom. This clarifies the fact that academic resources are both supplementary and complementary in nature depending on how they are used at each particular time in the learning process. The Culinary Institute of America (2021) identified and explained 3 main sources or types of resources as follows:

2.3.1 Primary Resources:

Primary sources are the raw materials of research. Types of materials can include items such as manuscripts, documents, diaries, letters; audio and visual media such as photographs, sketches, recordings of interviews; and physical objects (artifacts of material culture) such as tools, utensils, pots, clothes, quilts as well as human resource.

2.3.2 Secondary Resources:

Secondary Sources are the original published writings that analyze and interpret primary sources, typically, books and articles in magazines, newspapers, scholarly journals, and professional and trade journals.

2.3.3 Tertiary Resources:

Tertiary Sources are publications that summarize or, in other ways, present the information found in secondary sources. These include textbooks, encyclopedias and other reference resources. These are useful for selecting a topic and getting background information, definitions of terms and concepts, and brief descriptions of key aspects of topics.

2.3.4 Instructional materials, equipment and other resources for supporting learners with visual impairments to learn

Quite apart from the general academic resources which every learner needs in order to facilitate their learning, learners with disabilities especially those with visual impairment need specialized resources which when appropriately utilized imparts positive academic experiences to them. These resources may be human (Special Education Needs Teachers); materials such Brailled Text Books and large font-size print readers; infrastructure like Resource Centre; tools/equipment such as Perkins Brailers, Braille Ebossers, Frames and Stylus, Close Circuit Television, among others. Baah (2016) citing Nwachukwu (2006) was of the view that, “children with such an array of problems need a flexible curriculum that would provide an enabling environment for total development of their three domains- cognitive, affective and psychomotor” (p. 278). They use Audio, Optical and Non-Optical Devices since students with visual impairments rely mainly on verbal information for their learning, audio devices should be incorporated to aid the teaching process. These include things like audio cassettes and compact discs (Salisbury, 2008). In Ghana and Uganda, students with disabilities educated in mainstreamed institutions receive resource support in order to access the curriculum Good-Man & Mbithi, (2012); Spradbrow & Power, (2004); Wittenstein,

(2003); Students with disabilities received various types of support services that are geared towards making them more successful in terms of course completions (Moisey, 2004). Support services students with disabilities including students with visual impairments, receive in mainstreamed institutions include, note-taking, alternative test formats, extended time on tests, reading tests to students, adaptive technology, preferential classroom seating, alternate test locations, taped notes/text and providing tutorial support (Cowthon & Cole, 2010; DeLee, 2015; Kurth & Mellard, 2006). Furthermore, students with visual impairments require specialized instruction in the use of computers with appropriate software such as Job Access With Speech (JAWS) and Non Visual Display Access (NVDA), training in the use of different types of assistive technologies (such as closed circuit television systems and Braille displays, and electronic magnifies) and training in the acquisition of orientation and mobility skills Cooper & Nichols, (2007); Vik, & Lassen, (2010) to enhance their success in mainstreamed institutions. These support services are critical in the education of students with visual impairment because, lack of these necessary support services can render them socially and academically excluded and overly dependent Tugli et al. (2013) cited in Acheampong (2017).

Acheampong (2017) further citing Troiano et al. (2010), completed a study involving 262 students with disabilities from a private postsecondary institution to determine if a connection exists between learning support and student success. Five years of attendance data and graduation rates were examined and submitted to discriminate function analysis to evaluate the predictive influence of academic support Centre use on college student outcomes. The various types of learning support available included assistance with note taking, test preparation, test taking, writing strategies, research skills, time management, and building self-advocacy skills. The results indicated that over 64% of the students surveyed took advantage of learning support services available at their given institutions. Also, it was confirmed that students who consistently attended Academic Support Centre appointments

had higher rates of success than those who did not attend consistently. These students also had higher grade point averages and persisted to graduation. The current study is different from that of Troiano et al's. (2010) research, because the current study sought to explore the academic experiences of students with visual impairments at Mawuli School. Again, the current study employed a semi-structured interview to collect data on the experiences of nine students with visual impairments in an inclusive Senior High School in Ghana.

In another study, Mamiseishvili and Koch (2012) determined how different types of educational services could be related to overall success of students with disabilities in 2-year institutions in the United States. The study utilized both a survey and explanatory correlational research designs. Support services available to students with disabilities in these institutions included adaptive equipment, alternative examination format, readers, note takers, sign language and interpreters, and access to academic advisors. Although the findings from the study revealed examination provisions and tutors being the most used services, it was also discovered that over 50% of students with disabilities did not persist beyond their first year or left by the end of year three. There were students who did not utilize all services available to them and at least 44% reported never meeting with an academic advisor to help facilitate the planning and registration process, Acheampong (2017). 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 he or she talks less (Ocloo, 2011) cited in Vuuro (2016). 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 color 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 to function effectively in their environment. This involve standardized prescribed spectacles, optical low vision devices for distant and near vision. Ocloo (2010) cited by Vuuro, 2016 indicated that, it is necessary to attend to students with low vision and give them their required spectacles. Mawuli Senior High School has established a Resource Centre for Students with Special Needs (visually impaired) since 2012 to support the students with disabilities especially those with visual impairment most especially in their academic life. However, the kind of support the staff at the Centre provides to students with disabilities, especially those with visual impairments and the effectiveness of the support the students receive, is yet to be determined and documented.

Mamiseishvili and Koch (2012) also found that students who experienced mobility challenges or suffered from depression, psychiatric disorders, or dyslexia did not persist after three years. Again, findings of the study suggest that having high GPAs and degree aspirations during the first-year were positively associated with persistence as 77% of students desired to pursue higher education; however, 51% left before the end of three years. The researchers concluded that even though students with disabilities had high aspirations, without proper planning and assistance students could fail to succeed. The authors suggested that administration and disability support services work together to examine and address possible problems that might exist considering the high percentage of non-returning students discovered. The current study focused on students with visual impairments in Mawuli School, Ho. Reinschmiedt, et al, (2013) expressed that increases in enrollment of students with disabilities in postsecondary institutions should propel the need for administration to evaluate support services and accommodations offered. The authors also believe that students' satisfaction of support services indicates what is effective.

To assess students' satisfaction of services offered by Disability Support Services within postsecondary institutions, the researcher conducted a survey involving 116 students with

disabilities. Of the services and accommodations used, students were most satisfied with assistive reading and listening technologies, testing accommodations, text conversion software, and readers. Academic advisement and accommodation planning, assignment extension, and taped lectures were rarely used as were tutoring and on campus classroom accommodations. The authors suggested that Disability Support Services implement strategies to disburse information in a timely manner. Some earlier studies have reported on both sides of the coin where in one case students reported low level of satisfaction with support services received and in another case majority of students reporting high levels of satisfaction with disability support services (Dutta, Schiro-Geist, & Crandall, 2003; Sharpe, Johnson, Izzo, & Murray, 2005). The current study seeks to find out the types and effectiveness of support services students with visual impairment receive from the resource centre at Mawuli School, Ho.

2.3.5 The use of Audio, Optical and Non-Optical Devices

Since students with visual impairments rely mainly on verbal information for their learning, audio devices should be incorporated to aid the teaching process. These include things like audio cassettes and compact discs (Salisbury, 2008). In Ghana and Uganda, students with disabilities educated in mainstreamed institutions receive resource support in order to access the curriculum Good-Man & Mbithi, (2012); Spradbrow & Power, (2004), Wittenstein, (2003); Students with disabilities received various types of support services that are geared towards making them more successful in terms of course completions (Moisey, 2004). Support services students with students with visual impairments, receive in mainstreamed institutions include, note-taking, alternative test formats, extended time on tests, reading tests to students, adaptive technology, preferential classroom seating, alternate test locations, taped notes/text and providing tutorial support (Cowthon & Cole, (2010); DeLee, (2015); Kurth & Mellard, (2006).

Furthermore, students with visual impairments require specialized instruction in the use of computers with appropriate software such as Job Access With Speech (JAWS) and Non Visual Display Access (NVDA), training in the use of different types of assistive technologies (such as closed circuit television systems and Braille displays, and electronic magnifies) and training in the acquisition of orientation and mobility skills (Cooper & Nichols, 2007; Vik, & Lassen, 2010) to enhance their success in mainstreamed institutions. These support services are critical in the education of students with disabilities including students with visual impairment because, lack of these necessary support services can render them socially and academically excluded and overly dependent (Tugli et al, 2013) cited in Acheampong (2017). In another study, Mamiseishvili and Koch (2012) determined how different types of educational services could be related to overall success of students with disabilities in 2-year institutions in the United States. The study utilized both a survey and explanatory correlational research designs. Support services available to students with disabilities in these institutions included adaptive equipment, alternative examination format, readers, note takers, sign language and interpreters, and access to academic advisors. Although the findings from the study revealed examination provisions and tutors being the most used services, it was also discovered that over 50% of students with disabilities did not persist beyond their first year or left by the end of year three. There were students who did not utilize all services available to them and at least 44% reported never meeting with an academic advisor to help facilitate the planning and registration process, (Acheampong 2017). 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 he or she talks less Ocloo, (2011) cited in Vuuro (2016). Optical aids help individual with low vision to function effectively in their environment. This involve standardized prescribed spectacles, optical low vision devices for distant and near vision. Ocloo (2010) indicated that, it is necessary to attend to students with low vision and give them

their required 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). Heward (2006) 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. 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 et al., (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.

2.3.6 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 become paramount, if they have to learn all the things other students without visual impairments learn in the class. To help achieve this, therefore, these students should be taught physically using concrete experiences Baah (2016) citing (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).

2.3.7 Print Adaptation for Pupils with Low Vision

Determining the appropriate method of adaptations to magnify text for learners with low vision is an important issue, to ensure that difficulties in reading do not impede progress in educational, vocational and recreational activities. 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). 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). Heward (2006) observes that no category of handicap requires greater coordination and provision of resources than in the area of persons who are blind or visually impaired. Randi (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.

2.3.8 Itinerant/Resource Teacher support service of inclusive education

This involves the assistance that is given to learners with disabilities which is based on human knowledge, skills, and competences among others by experienced or trained professionals in order to enhance learning. Baah (2016) citing (Avoke, Hayford, Ihenacho & Ocloo, 1998) was of the view that, they are services that are needed to assist a child with disability to benefit from regular or special education. 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) cited in Baah (2016) 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. Sand (2010), 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 (Sand 2010). 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 Sand (2010) cited in Baah (2016). 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 individuals with visual impairments 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). In the context of Ghana, resource teachers are specially trained teachers who are equipped with skills and competences to handle the educational needs of students with special education needs. Some are attached to education offices and are usually called Special Education Needs Coordinators (SENCO) while others are attached to circuits/ cluster and single schools. Their duty is to collaborate with the regular classroom teacher to identify learners with special education needs so that they can offer the needed support in order to maximize performance.

Vuuro (2016) citing 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 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).

Baraka (2013) opined that teacher collaboration (Co-teaching) is an important aspect of inclusive education, because inclusive classrooms contain students with diverse learning needs. No single teacher can have all the skills necessary to meet students' diverse needs in inclusive classroom (Lipsky & Gartner, 1997). Co-teaching involves two teachers teaching the same class at the same time, a regular teacher taking the responsibility of the main teaching, and a special needs teacher, dealing with disability specific needs of students (Dalen, 1982). A teacher, who has specialized in visual impairments, therefore, should be part of the teaching in an inclusive classroom having students with visual impairments. A special teacher will be helping a general teacher in preparation of teaching materials and learning environment that suits students with visual impairment. A co-teacher will also be responsible for teaching skills like reading and writing by using braille, using glasses and lenses etc. (Spungin, 2002). According to Scruggs et al., (2007), some reported benefits of co-teaching include improved instructions and communication between a teacher and a student and increased enthusiasm for teaching.

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. (2007) reported that there is a benefit in co-teaching which include communication among students and teachers to enhance teaching.

2.3.9 Learning Environment: Generally, adaptation of teaching and learning environment is at the core of successful inclusive education. If the environment in which learning occurs is not supportive to students with visual impairments, their learning will automatically be interrupted (Johnsen, 2001) cited in Baraka (2013). Research shows that the context in which the learning occurs; inflexible curriculum and inappropriate assessment procedures, are some of the factors leading to ineffective learning among students with visual impairments (Fraser & Maguvhe, 2008). Inclusive learning environment should be different from the ordinary learning environment, because an inclusive classroom contains students with different learning needs and abilities (Simon et al, 2010). For quality learning of students with visual impairments, some features and conditions should be adhered to. These include special services from specialized teachers, teaching and learning resources, as well as assistive devices like braille and magnifying glasses and the use of flexible teaching methods Simon et al, (2010); Webster & Roe, (1998). Inclusive learning environment, therefore, is an environment that allows and supports the potential learning of all students, regardless of the learning differences and diversities these students possess in the class (Simon et al, 2010). Therefore, there is a need for all educational stakeholders including teachers to consider

restructuring of the education system and practices, in order to help these students learn better in inclusive settings (Fraser & Maguvhe, 2008).

2.3.10 Assistive Technology

Assistive technology for individuals with visual impairments refers to various tools and devices that help them navigate their surroundings, access information, and engage in daily activities. Examples are screen reading software, braille players, and electronic magnifiers, (American Foundation for the Blind, 2021). Assistive technology for the visually impaired includes low tech” to “high tech” tools. The low-tech tools may include pencil grips, highlighters, paper stabilizers and high-tech examples include computers, voice synthesizers and braille readers. Furthermore, Rose (2006) stated that assistive technology devices are any piece of material item, or product system (software) used to improve the functional capabilities of persons with visual impairment. According to Weiter and Hastein (2003), instructional materials on ICT, material devices or printed paper all aim to fulfil a purpose. Firstly, there is a target to fulfil the function for which they are designed; secondly, they serve as a means for inclusive education. We know it is relevant to draw practical consequences deriving the function between them. The types of assistive technology in the classroom may be in place to aid in the following area: Computer Access, Compositing Writing Material, Communication, Mobility and Vision Baah, (2016) citing (Weiter & Hastein, 2003). The technological developments during the last decades have significantly increased access to information in all formats with visual impairments. As Kapperman and Stiken (2000) observed, the ability to access information is essential for success in education, employment and life. Therefore, much of the development of assistive technology has focused on providing access to information. In particular, devices to read and write Braille and print have significantly improved with the application of new technology. Such devices include audio technology (tapes and tape recorders, auditory text, recorded texts and synthetic speech) as well as 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. Baah (2016) noted that computer assistive and technology are often cited as the means to overcome limited access to print and other environmental barriers for non-print readers (Gerber, 2003). Gerber notes that a plethora of researchers and practitioners in the field of visual impairment have acknowledged that the use of computers and assistive technology can change the lives of pupils with visual impairments to a great extent by improving education and employment opportunities, enhancing social network and facilitating independence. In essence, assistive technology has the potential to be the “great equalizer” for persons with visual impairments (Michaels & McDermott, 2003). It is broadly recognised that assistive technology has good impact on the lives of individuals with vision loss. (Kapperman et al, 2006). However, the advancement in technology on the other hand has been cited as a factor for declining Braille use and Braille literacy (Spungin, 2005). In addition, assistive technology omits grammatical structure, spelling and traditional text formats. Therefore, as assistive technology market continues flourishing with devices and software that make the visual world significant more accessible to person with impairment, educators need to evaluate their applicability and effectiveness to literacy related needs. Baah (2016) noted that 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.

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

2.4 Academic assessment strategies designed for learners with visual impairment by teachers in the school.

Assessment of learners refers to the systematic procedures of gathering and identifying relevant educational information about a student. The main aim is to understand the specific needs of the student (McLoughlin & Lewis, 2005). Assessment is the most controversial issue in today's higher education (Norton 2009) as it is reportedly the area where educators have the most divided opinions and the area with which students are least satisfied (Gebrehiwot, 2015). Norton (2007) claimed that assessment informs students about what they should emphasize on in order to be successful in their studies and also serve as a basis for feedback. This suggests that assessment has a great influence on how and what students learn. Students adopt varying approaches to studying based on personal factors and contextual factors such as assessment procedures (Zeeger, 2001). Redpath, Kearney, Nicholl, Mulvenna, Wallace and Martin (2012) reported in their study that many students, especially those with disabilities, used to select courses based on the means of assessment to be utilized. Baraka (2013) stated that quality

teaching and learning can only be achieved when student's background and prior knowledge, is assessed and known. Assessment of the learning needs of a student, with visual impairment, prior to the beginning of the course of study is important for both the student and the teacher. This is because it allows for an understanding of the student's academic ability, learning styles and learning needs (Spungin, 2002).

Acheampong (2017) citing Shepherd (2006) reiterated on the negative experiences of students with disabilities in assessment arguing that students with disabilities may have been disadvantaged in some of the activities during the teaching and learning process and if the assessment instruments also are biased towards activities that favor sighted students, such as by making considerable use of graphics, they would be doubly disadvantaged. Challenges that student with disabilities face in assessment practices relating to the environment where the assessment takes place, the modes of assessment used, and the terminal once-off summative examinations Hanafin, (2006). These negative experiences create uneasiness among students with disabilities. To minimize the uneasiness of students with visual impairments in situations where summative assessment is inevitable, Salisbury, (2008) describes the following strategies:

Modifying assessments: - This should enable students with visual impairments to have full access to the assessment without giving them any unfair advantage. Others' support: - students with visual may need the support of others in certain assessment activities which they cannot do independently. For instance, they may require readers and scribes in written examinations; they may also need others' assistance in practical activities such as using equipment, locating materials, drawing and measuring.

Time allowances: - students with visual impairments should be given additional time to complete their assessments to be decided by the individual instructor based on the purpose and nature of the assessment. Alternative methods of assessment: - In certain situations where

formal methods of assessment may not be appropriate for students with visual impairments, the instructor should assess them using non-formal methods such as class work, portfolios, or oral presentations. (p. 40-41) Tennant, McMullen and Kaczynski (2010) suggested that different assessment mechanisms including self-assessment, peer assessment, portfolio assessment, authentic assessment and workplace-based assessment could be employed to give students greater responsibility for their own learning. A study by Waterfield, West and Parker (2006) revealed that using alternative methods of assessment benefit both students including students without disabilities since all students included in the research gained an overall improvement of five percent in marks.

In a descriptive survey, Madriaga, Hanson, Heaton, Kay, Newitt and Walker, (2010) cited in Acheampong (2017) administered questionnaires to 484 students including 172 students with disabilities. Based on a t-tests analysis and transcription of interview responses of participants, it was found out that students with disabilities indicated having greater difficulties than non-disabled students with the amount of time required to complete coursework and difficulties with literacy. There was however no significant statistical difference between students with disabilities and non-disabled students regarding difficulties with assessed group work. The current study sought to find out the experiences of students with regards to assessment of learning in Mawuli School using only interviews. Some staff members perceive accommodations such as alternative mode of examination and devotion of a little more time to students with disabilities as unfair to students without disabilities Vasek, (2005) while others hold a contrary view to providing such accommodations to students with disabilities Vogel, (1999).

Baraka (2013) suggested that parents and peers are therefore important partners in provision of information about the learning of students with visual impairments. This is because parents know the needs and interests of their children better than other people. On top of that they know much about their children's learning problems and therefore can suggest better

educational intervention Johnsen, 2001; Spungin, (2002). Assessment can also be through reading students' academic records Spungin, (2002). Assessment is important for knowing whether a student will need low vision devices, large prints, magnifiers and lenses, braille etc. It is also important to know the learning style, ability and learning pace of the student Spungin, (2002). Assessment of learners with special educational needs, should aid teachers to plan teaching and meeting individual needs of the student. All this information about students learning should be stipulated and stated in the Individualized Education Plan (IEP); McLoughlin & Lewis, (2005); Mitchell, (2008); Spungin, (2002). However, in many schools this information, which is important for student's learning, is not gathered in most cases Johnsen, (2001); Smidt, (2009).

2.5 Access to Academic Information; Library Services by learners with visual impairments.

The library is an important Resource Centre where students are expected to access a wide range of academic information and enrich their learning experiences Gebrehiwot, (2015) cited in Acheampong (2017). The libraries in the educational institutions provide relevant information resources for teaching, learning and research Agyen-Gyasi, (2008) yet not all students are able to access library resources. Gebrehiwot has indicated that in many of the studies that investigated the experiences of students with disabilities, there was evidence that libraries were not organized in such a way that they would satisfy the needs of those students. Acheampong (2017) citing Baro and Fyneman (2009) found in their study of information literacy among undergraduate students that most students in Nigerian universities lacked the sophisticated skills that were needed to exploit the university libraries information resources, both print and electronic. Nonetheless, according to Agyen-Gyasi, as well as Baro and Zoukemefa, the ability to use libraries and information sources, both print and electronic, are becoming an integral part of undergraduate study in most African countries.

Some authors believe that the inability of students to use library resources is due to insufficient education of students on how to access library resources. Hooks, et al (2007) remark that, "teaching students how to use the university library resources had been a challenge for academic librarians for most of the twentieth century and has emerged as a high priority for academic librarians in the twenty-first century as well." (p. 1).

Fidzani (1995) expressed the need for library orientation and user education indicating that it:

- introduces students to facilities and resources in the library;
- develops library skills;
- makes students independent users and learners in the library;
- develops capabilities as self-sufficient users;
- establishes the library as the centre of academic activity;
- provides basic understanding of the library so that users can make efficient use of library material and services;
- educates users about information sources and resources and how to exploit such resources effectively and efficiently.

In the Agyen-Gyasi (2008) study, user- education programmes for newly-admitted students at the Kwame Nkrumah University of Science and Technology (KNUST) Library in Ghana was examined. The author identified some problems the library faces in user-education programmes as students' lack of interest to participate in the programme, lack of personnel in the libraries, training needs of librarians, irregular internet connectivity and financial constraints.

In another study which sought to establish the extent to which library and information services were available for students with visual impairments at University of Ghana, Legon, Ayiah (2007) found out that students with visual impairments were dissatisfied with library and information services provided. The case study which involved students with visual impairments, braille transcribers, librarians and policy makers in the institution as participants

revealed that the premises housing library and information services for students with visual impairments was not fully accessible to the participants. Ayiah further found out that brailled materials on the shelves were outdated and not relevant in meeting the information needs of students with visual impairments. The author further found the need for special training for all staff who serve students with visual impairments. Generally, students with visual impairments appear to have difficulties accessing library facilities ranging from physical infrastructure, print materials and electronic information. Therefore, the literature has further been reviewed under two sub-topics namely: (1) access to library building and furniture, and (2) access to learning materials in print, electronic and braille.

2.5.1 Access to library building and furniture

Clearly, students with visual impairments encounter great difficulties in accessing the physical infrastructure in their environments. Gustafson-Pearce, Billett and Cecelja (2005) contended that, to a student with visual impairment, the physical world presents many challenges. The authors further pointed out that, for a student with impaired sight, finding the way through a complex environment is fraught with dangers, both actual and imaginary. Most educational institutions handicap their students with disabilities due to lack of modifications in the environment to aid accessibility. Students with disabilities must gain complete access to school facilities such as the library for improved participation in learning and, consequently, enhance their academic and social learning outcomes (Mastropieri & Scruggs, 2000; O'Brien, 1998). This emphasizes the relationship between access to physical facilities and academic and social advancement. Shevlin, Kenny and McNeela (2002) conducted a qualitative study in Irish post-primary schools with 16 participants who were taken through a semi-structured interview. The findings revealed that access to physical facilities such as the library, lecture halls, and access to curricular did not appear to be addressed in formal school policy. Participants had to continually inform others of their needs and ask for help, which put pressure on their social lives, their sense of others and of self. This indicates that access to

physical infrastructure in educational institutions remains a nightmare to students with visual impairments.

Samson (2011) conducted a study on the best practices for serving students with disabilities in eight academic libraries in four Rocky Mountain States in the USA. Samson interviewed the librarians directly responsible for library services to students with disabilities to establish how their practices reflected the 1990 Americans with Disabilities Act (ADA) and complied with the 2010 Department of Justice regulations. Findings revealed that the needs of students with disabilities were being met as students were able to physically access facilities with little or no difficulties. All libraries had either been retrofitted to accommodate students with disabilities and new structures were being constructed according to universal design standards. In the effort of the libraries to meet the physical accessibility needs of students with disabilities, Samson found that the libraries had multiple entryways with ramps, elevators, adjustable computer tables, universal adjustable keyboards, accessible study desks, stand-up study or computer tables, adjustable seating and aisles for easy movement. The author also noted that 87.5% of the libraries collaborated with their Office of Disability Services in providing assistive technology to promote access. The current study, however, focused on students with visual impairments in one public inclusive Senior High School Ghana.

In another study, Ekwelem (2013) organized a focus group interview for 194 library users with disabilities (visually impaired and mobility challenged) in 9 universities in Enugu State, Nigeria. The responses to interview items regarding accessibility to the library building and furniture revealed that there was lack of facilities such as adjustable table and keyboard tray, ramps, lift with disabled friendly features and automatic-opening doors. This made the respondents perceive among others that libraries were established to serve only non-disabled users and that there was inadequate knowledge of the needs of those who did not or could not use the library. The current study differs from Ekwelem's study because the current study did not include students with physical challenges.

2.5.2 Access to electronic and print learning materials

According to Majinge and Stilwell (2013), information is essential to all human beings and every library's aim is to provide the right information at the right time and in the right format to its patrons regardless of race, religion, age, nationality and language. Academic libraries should be designed to be universally accessible, and should have equipment in place to enable all users including students with disabilities to get maximum benefit from the library's materials and services (Deines-Jones, 2007). It is therefore obligatory on library management in schools to provide the same level of service to students with disabilities as is provided to users without disabilities (Ekwelem, 2013). In order to meet the needs of visually impaired library users in educational institutions, some authors assert that libraries must provide appropriate selection of books in formats that are usable by students with visual impairments such as large print, audio-books, talking books, and Braille materials Gunde, (1991); Majinge & Stilwell, (2013).

Higgins (2013) noted that the advent of internet and World Wide Web in the late 1980s and early 1990s created new avenues for the dissemination of information and that access to information has evolved from being restricted to physical space to being available through remote access. This has provided the opportunity for students including students with disabilities to access information anywhere at any time (Dadzie, 2005; Ekwelem, 2013).

In a study conducted by Dadzie (2007) cited in Acheampong (2017), an acting librarian at the University of Cape Coast stressed the importance of Information Retrieval Course (IRC) library staff offer to students. The participant said the IRC was to equip students with skills to enable them to access and retrieve information in traditional, hybrid and digital libraries. Interestingly, the librarian at the University of Ghana Balme Library disclosed in the study that information skills training which included training on the available electronic resources (e-resources) in the library and how to effectively search the databases were only offered to graduate students at the beginning of the academic year as part of library literacy. Meanwhile

an earlier study which focused on the training needs of users of three public university libraries in Malaysia with regard to electronic resources concluded that there is the need to design a training programme that would enhance the ability of all students to use electronic resources (Basri, 2003). Academic libraries need to have effective internet connectivity (Baro & Asaba, 2010) in this era of electronic databases where the web is the first-place information users look for information (Stuart, 2009). For students with visual impairment to benefit from electronic library resources computers connected to the internet and equipped with screen readers such as Window-Eyes are necessary.

Sunrich and Green (2006) conducted a survey on the programmes for students with visual impairments on the available assistive technologies for library patrons with visual impairment and the training programme in using available assistive technologies in 25 educational institutions in United States. Out of the 6 institutions profiled, it was revealed that only one library provided 7 assistive technologies while the other institutions provided a maximum of two; namely, Kurzweil 1000 and JAWS, out of the 15 assistive technologies listed. The authors also found that students were not trained to use the available assistive technology and staff was also not trained to support students with visual impairment to use the assistive technology mainly due to budgetary constraints. In a similar study Agyen-Gyasi (2008) identified training needs of librarians, irregular internet connectivity and financial constraints as some problems facing the user education programme at the KNUST Library Ghana which culminates into students' inability to use electronic resources.

2.5.3 Access to Tactile/Braille learning materials

Eagan (2017) expounded that, tactile books are a great way to foster the development of literacy skills with any child who is visually impaired, including children with other significant disabilities. These can be used at home for enjoyment, to support understanding and anticipation of activities or as an independent leisure skill. Eagan (2017) further explained

that, at school tactile books are a must for supporting literacy instruction, for use in developing concepts and honing sensory efficiency skills.

Book Making Tips

Eagan (2017) identified some important tips for making tactile materials. According to her, whenever possible, it is always a good idea to make the book with the child. Create the book based on the child's level related to the type of tactile material the child will understand (i.e. if still using real objects, book should be made with real objects that have meaning to the child). If including text, compose the text with the child and/or get help from the speech-language therapist. If using pictures or tactile drawings, keep the graphic as simple as possible without losing meaning. Glue one object per page to begin with, and then increase the number of objects as skill level increases. Glue envelopes or Ziploc bags to pages or the back of book to hold items inside.

Use textures the child tolerates. Use a progression in moving from the concrete to the abstract: start with solid objects, then go to raised line figures, then to embossed figures, and then braille figures. When using symbols, remain consistent in the way you make the symbol (so not to confuse the reader) – collaborate with speech therapist, classroom teacher, teacher of the deaf and hard of hearing, and/or the parent. When finishing the book...bind it with rings or in binder if you are planning on adding additional pages at a later date or reordering the pages once child is familiar with the order.

Change the location of where book is bound (i.e. instead of left side, use top) to prepare child for other books bound differently. Tag the cover of the book with an object, large print, picture, or braille that is specific to the book to aid child in identifying the book. The cover should be either a different kind of paper or larger than the "text" pages. Card stock, poster board, braille paper, plastic are some examples of possible items to use for pages...depends on the need of the student and items being used. Keep page numbering system consistent, for example, print page number top right, braille page number bottom right. For a child with CVI,

color should drive the selection of objects, outline of pictures, or background page. For example, if you are using Boardmaker, outline the picture in the child's preferred color: use the option of color or black and white. Books should be tactilely functional, and may not be visually appealing.

Types of Tactile Books: there are different types of tactile materials that learners can explore in a library in order to acquire new skills, knowledge, and competence which aids their learning efficiency. Eagan (2017) suggested the following as some of the different types of tactile books that can be created for the library of learners with visual impairments:

Experience Books:

An experience book is a book based on an experience the child had (i.e. trip to zoo, grocery store) among others. The book is then used to retrieve memories of that experience and assists the child in the language development around the experience; can also become an experience book if the experience will be repeated.

Object Books:

“An object book is a book containing real objects. These objects should be taken from the student's activities and experiences, so they will be meaningful. This is the first type of book that should be used to introduce a tactual learner into the wonderful world of reading.” Smith et al. (2008)

Routine Books:

A routine book is a book that organizes a student's day or activity set; a book version of the calendar box. When the activity or step is done, the student will turn the page.

Story Boxes (book bags):

“A story box is a way for young children with visual impairments to experience a story. When selecting a story for the child, choose one that is simple and tells about familiar objects and concepts. Collect corresponding items in a box or bag. As you read the story to the child,

allow him/her to hold the item. The number of items and complexity of the story should be suited to the child. Often, simple is better. Drissel, (1997).

2.6 Summary of Literature Review

This chapter reviewed related literature on the research topic; empirical literature and the theoretical framework. The chapter was discussed under the following strands: the ability of teachers to modify the curriculum appropriately and adapt methodology suitably for students with visual impairments, provision of academic resources for students with visual impairments, academic assessment strategies and their suitability to students with visual impairments, and the accessibility of students with visual impairments to information in the most appropriate formats (library services and facilities). The theoretical framework was also discussed.

The researcher identified in course of his review of literature, that only a limited empirical studies that highlighted the academic experiences of students with visual impairments in inclusive second cycle institution was available. Even with that, the available literature dealt generally with experiences of students with visual impairments in inclusive Senior High Schools without paying specific or peculiar attention to deepening the research into the academic experiences of these students. This research sought to delve deeper and find out the academic experiences of students with visual impairments especially in inclusive senior high schools with a particular reference to Mawuli Senior High School, Ho

CHAPTER THREE

3.0 METHODOLOGY

This chapter describes in detail the procedures and methods that were used in collecting and analyzing data from the field. Several aspects are discussed here. These include: research approach, research philosophy/paradigm, research design, population, sample size, sampling techniques, instrumentation, trustworthiness, procedure for data collection, method of data analysis, and ethical considerations.

3.1 Research Approach

The study employed the qualitative research approach to explore the academic experiences of students with visual impairments at Mawuli School, Ho. Qualitative research involves an interaction between the researcher and the researched in the socio-cultural context of participants of a study (Kusi, 2012). Qualitative research approach considers collecting information from the participants in order to understand the phenomenon under the study from the perspectives of those involved in the research.

Qualitative approach was appropriate for the study because the study explored participants' academic experiences with regards to participants' academic interaction with their regular classroom teachers, the availability and adequacy of academic resources for their study, their responses to the modes of assessment, and student's reactions of access to academic information (library service); large prints, electronic, and braille formats. Findings of the study were arrived at through the exploration of participants' experiences using interviews but not by statistical procedures and quantification. The current study therefore, sought to use the qualitative approach, in order to have a detailed record of the academic experiences of students with visual impairments from the students' own perspective.

3.2 Research Philosophy:

The researcher underpinned this study with the interpretive paradigm as his research philosophy. The basis of the interpretive paradigm is the constructivist epistemology. This

school of thought argues that social reality has no external existence such that it can be objectively and dispassionately accessed. Smith (2008) stated that researchers adopting this perspective seek to understand the meanings and interpretations individuals assign to their experiences rather than focusing solely on objective facts or statistical trends. Central to interpretivism is the notion that individuals actively construct their social reality through interactions and interpretations of the world. Kusi (2012) citing (Sikes, 2004:20) qualitative studies are underpinned by this ontological standpoint about social reality and it informs methodological decisions in an attempt to gather 'valid data to make valid interpretation for the creation of valid knowledge' Interpretive research acknowledge the feelings, experiences, and viewpoint of the researched as data and is collected verbally (Kusi, 2012).

3.2 Research Design

This research employed phenomenology as the research design to explore the academic experiences of students with visual impairments at Mawuli School, Ho. Phenomenology assumes that there exists in every experience a true essence or structure. A phenomenological study describes the meaning of individuals lived experiences of a phenomenon. This description consists of what they experienced and how they experienced it. Phenomenological studies are meant to explore participants' perspective and experiences of a phenomenon. The basic purpose of phenomenology is to reduce individual experiences with a phenomenon to a description of the universal essence, that is, a grasp of the very nature of the things.

In relation with the above, the researcher's aim in this study was to find out the academic experiences of students with visual impairments at Mawuli School, Ho. The researcher's desire was to pragmatically delve into the actual academic experiences of the individuals being researched in order to establish the facts and truths of what these students are going through in terms of their academic life in Mawuli School, Ho. It was therefore imperative to determine the students' academic experiences through a phenomenological study. The purpose of the phenomenological approach is to illuminate the specific, to identify

phenomena through how they are perceived by the actors in a situation. The researcher conducted focus-group interviews on participants to give the participants the opportunity to express their academic experiences in the school.

3.3 Population

The population of the study has been presented in the table below:

Table 1 Population Distribution of Respondents

Department	Population	Male SWVI	Female SWVI
FORM 1	05	03	02
FORM 2	03	02	01
FORM 3	06	03	03
Total	14	08	06

Source: Researcher's Computations from field Data, March, 2022

Key: SWVI = Students with Visual Impairments

The population for the study was 14 students with visual impairments at Mawuli School, Ho. They comprised 08 males and 06 females aged between 15 and 26 years with an average age of 18 years. They were Forms 1, 2 and 3 students who all belong to the General Arts Department of Mawuli School. The detail of the population is presented in Table 1 above.

3.4 Sample

The sample size for the study was 14 students with visual impairments, which comprised 13 students with blindness and 01 student with low vision at Mawuli School, Ho. Also, the sample consisted of 08 males and 06 female students between the ages of 15 and 26 years.

All the 14 students with visual impairments in forms 1 to 3 were involved in the study because the researcher considered them to have had some amount of academic interactions in the school. Based on that, the researcher believed that they have a considerable level of academic experience which will aid this research.

The table below indicates details of the sample size of the study:

Table 2: The Sample Size involved in the study

Department/Class	Sample Size	Students with Blindness	Students with Low Vision
Form 1 G. Arts 1	01	01	00
Form 1 G. Arts 2	04	04	00
Form 2 G. Arts 1	00	00	00
Form 2 G. Arts 2	03	03	00
Form 3 G. Arts 1	04	04	00
Form 3 G. Arts 2	02	01	01
Total	14	13	01

Source: Researcher's Computations from field Data, March, 2022

The participants who formed the sample size of the study were all General Arts (G.A) students who were further categorized into G. Arts 1 and G. Arts 2. Their Elective Subjects were allocated as follows:

General Arts 1, (Ewe, Literature in English, French, and Christian Religious Studies/Music).

General Arts 2, (Government, Literature in English, Christian Religious Studies, and French).

3.5 Sampling Technique:

The researcher used census sampling technique to select the participants for the study. Census sampling technique is a method used to collect data from every member of a population. It involves gathering information from all individuals or elements within a specific group Smith, (2020). A population refers to the set of all observations under consideration. For example, if you want to carry out a survey to find out student's feedback about the facilities of your school, all the students of your school would form a part of the 'population' for your study. Census sampling technique is an attempt to list all elements in a group and to measure one or more characteristics of those elements. The group is often an actual national population, but it can also be all houses, businesses, farms, books in a library, cars from an assembly line, and so on.

The researcher chose the census sampling technique because all the population of the study have been diagnostically confirmed through medical examination at different health posts by

qualified doctors of having visual impairment within the past 10 years and have been in the institution of research for at least one academic semester, hence, were in the best position to provide relevant information relating to their academic experiences. The evidences of their condition have been revealed in their medical reports presented to the school.

The researcher also chose the technique because the entire population of students with visual impairments in forms 1, 2 and 3 classes being studied were 14 and any attempt to use a different sampling technique would render the sample size of the study too small (insignificant).

Census sampling in interviews is very important for the following reasons:

- It is a statistical method that studies all the units or members of a population.
- It is total/Complete in terms of its calculation. Though its process is time-consuming and capital intensive, the results obtained are accurate as each member is surveyed. So, there is a negligible error.
- Furthermore, its results are highly valid, credible and reliable with little or no errors since information was gathered on the entire population. In terms of relevance, this method is suited for heterogeneous data.

3.6 Instrumentation

3.6.1 SEMI-STRUCTURED INTERVIEW:

In order to have detailed information about teaching students with visual impairments in inclusive classrooms and the challenges teachers face, semi structured interview was used on the focus groups. Semi structures interview can be defined as the type of interview having both closed ended and probing open ended types of questions, in order to get rich information from research participants (Gall, Gall & Borg, 2007). Through semi-structured interview, students had wide chance of expressing themselves and giving a lot of information about teaching strategies of their teachers in their inclusive classrooms. The interview guide was used. The questions in the interview guide were developed from the four research questions

presented in chapter one. Before the interview session, students were asked to choose their language of preference, and English Language was their preferred choice. The duration of interview session for every group ranged from 45 minutes to 1 hour. Interview method was used in this study as a main method of data collection. A tape recorder was used in this study to maintain the original data. Tape recording was also used because it ensured the continuity of the interview, and speeded up the interview session and thereby saving time (Cohen, Manion & Morrison, (2007); Gall, Gall & Borg, (2007); Gay, Mills & Airasian, (2009). One of the disadvantages of the interview method is that it is time consuming Ary, Jacobs & Sorensen, (2010). It is especially so when interviewing students one after the other and again when students were digressing from the questions. It was the role of the researcher to keep the track of the research.

A semi-structured interview guide was used to elicit data from the participants for the study. The interview guide was composed of four main themes with 2 or 3 sub themes under each. See appendix one for details.

3.6.2 FOCUS GROUP INTERVIEW

The researcher chose focus group interviews because it encourages participants to speak out so that the researcher can learn what the range of views of participants are, in order to generate a collective rather than an individual view of a phenomena (Bogdan & Biklen, 2007; Cohen, et al., 2007). O'Donoghue (2007) described a focus group interview as a face-to-face encounter between the researcher and a group of participants with the focus on finding out participants' perspectives on their lives, experiences or situations as expressed in their own words on the main variables raised in each of the research questions. Fraenkel and Wallen (2009) noted that interview is one of the main techniques used to collect data in qualitative research. In the interviews, the researcher included probes and prompts to aid further exploration of his own line of questioning. The probes and prompts helped to explore and

develop views of participants and to prevent them from going off the main line of questioning Rodgers, (1999). The interview questions were guided by the themes in the research questions raised. Interview method was deemed convenient because it allows collection of detailed information from the students about how they were being taught by teachers in inclusive classrooms and the challenges facing them. Interview is defined as the form of data collection that involves direct interaction between a researcher and the participant. The interviewer uses oral questions to gain responses from the participants (Gall et al. (2007). It allows participants to speak out their opinions, feelings, beliefs, insights, attitudes and experiences about a phenomenon under investigation through the use of probing questions. By the use of interview method, it is possible to make follow up answers, participants are available to clarify immediate concerns and ambiguous statements Ary et al. (2010); Gall et al. (2007); Gay et al. (2009). Furthermore, through the establishment of trust and rapport, with the participants, a researcher is likely to gather information that he/she would not be able to get by any other method of data collection. Several interactions therefore, were made possible before the interview session, to build trust and rapport with the research participants Gall et al. (2007). Furthermore, to have detailed information about teaching students with visual impairments in inclusive classrooms and the challenges involved, semi structured interview was used. Semi structures interview can be defined as the type of interview having both closed ended and probing open ended types of questions, in order to get rich information from research participants Gall et al. (2007).

PILOT/PRE-TEST

The research instrument of the study was pretested at the Adidome Senior High School in the North Tongu District of the Volta Region. This was done in order to ascertain the reliability of the research instrument and procedures. The school was chosen for the pilot because it is inclusive in nature and has students with visual impairments just like the school for the study. The participants for the pilot study were five nine students with visual impairments across all

the grades of the school. The piloting provided a good opportunity for the researcher to identify any weaknesses in the instrument, and to find out if the anticipated data analysis techniques were appropriate. The findings from the pilot study allowed the researcher to rework on the research instruments for the improvement in case of any inconsistencies: language use, ambiguity, and typographical errors were removed.

3.7 TRUSTWORTHINESS

Kusi (2012) indicated that the most popular criteria for judging the quality of a study located within the interpretive-qualitative framework is the trustworthiness criteria. The elements of the criteria include credibility, transferability, dependability, and confirmability.

3.7.1 Credibility

Credibility is a substitute to internal validity that is used in quantitative studies. Credibility in qualitative studies refers to the truthfulness of the findings. It is how the researcher represented the realities of the research participants as accurate as possible. Several techniques have been used to ensure credibility of the qualitative research study; some of which includes data methods and theory triangulation, control of biases through reflexivity, peer review, member checking etc. Ary et al. (2010); Bryman, (2004). In this study member checking and reflexivity were used to ensure the credibility of the study. Member checking involves whether what was recorded by a researcher match with what the participants said or did, during interview and observation sessions respectively (Ary et al. (2010); Bryman, (2004). Furthermore, reflexivity is a self-reflection of one's own biases, recognize them and eliminate them from the study. The current study used semi structured interview methods for data collection. The study also used member checking strategy for the same purpose. I asked the research participants to review interview data to check whether what was recorded represented what they said during interview sessions. Reflection on my own biases was done several times as an attempt to maximize neutrality and avoiding biases to interfere the data collection process, and data analysis was also ensured. Finally, Gall et al. (2007) pointed out

that truthfulness can also be established through reporting the findings honestly and straightforward by using direct quotes from the research participants. In this study, reporting the findings honestly was observed. Moreover, verbatim statements from the research participants were used in order to maintain the original content. It is anticipated that, the use of English Language in collecting data for this study ensured truthfulness of the data and findings, because this is the language well understood by the research participants and most Ghanaian students. Because the language of communication was well understood by the research participants, it is likely that the questions were well understood and the responses provided were relevant to the questions. This is in accordance with Kirk and Miller (1986) who point out that qualitative research requires the use of the native language (a language that is understood by research participants) for data collection.

A study is considered credible when it presents an interpretation of an experience in such a way that people sharing that experience immediately they recognize it. Credibility allows others to recognize the experiences contained within the study through the interpretation of participants' experiences. In order to establish credibility, a researcher must review the individual transcripts, looking for similarities within and across all participants. According to Cohen et al, (2000) cited in Kusi (2012), credibility involves the use of two or more methods of data collection in a study of some aspects of human behaviour. Employing this strategy helps you to offset the limitations associated with using one method to collect data and to determine the veracity of information gathered.

It is seen as the most important aspect or criterion in establishing trustworthiness. This is because credibility essentially asks the researcher to clearly link the research study's findings with reality in order to demonstrate the truth of the research study's findings. Credibility also has the most techniques available to establish it, compared to the other three aspects of trustworthiness.

3.7.2 Dependability

In qualitative studies, concept dependability or trustworthiness is widely used rather than reliability (Bryman, 2004). Unlike in quantitative studies, where reliability refers to the consistency of the findings if the study is replicated, in qualitative studies there is a possibility of variability in findings, because the change in context and time matters Cohen et al. (2007). For example, two studies conducted at the same place may have two different findings and still remain to be reliable or dependable, provided that both represent what is really happening in the society concerned at that particular time. Therefore, consistency is counted by the extent to which the variations can be tracked and explained Ary, et al. (2010). Several methods are used to establish dependability. These include audit trial, replication logic, data and method triangulation among others. In this study, to ensure dependability I used reflexivity to ignore all forms of personal biases from the data. In qualitative studies, reliability is just a match between data collected from the field and what is really happening in a natural setting (Bogdan and Biklen, (1992). Therefore, two studies conducted at the same place may have two different findings and still remain reliable, provided that both represent what is actually happening in the society at a particular time Cohen et al. (2007).

3.7.3 Transferability

Transferability refers to the degree to which the results of qualitative research can be generalized or transferred to other contexts or settings. From a qualitative perspective transferability is primarily the responsibility of the one doing the generalizing. The qualitative researcher can enhance transferability by doing a thorough job of describing the research context and the assumptions that were central to the research. The person who wishes to “transfer” the results to a different context is then responsible for making the judgment of how sensible the transfer is. In this study, transferability was ensured by generalizing the findings to all other inclusive schools in the country.

3.7.4 Confirmability

Confirmability is the last criterion of Trustworthiness that a qualitative researcher must establish. It is an alternative term to the concept objectivity used in quantitative research studies. This represents the extent to which the research is free of bias in the procedures, and in the interpretation of the results Ary et al. (2010). It is difficult to ensure complete objectivity in social research but acting in a good faith is a goal Bryman, (2004). Several methods can be used to address this issue and ensure confirmability of the study. These involve audit trial, peer review, triangulation, reflexivity etc. (Ary et al. 2010); Johnson and Christensen, 2012). Attempting to adhere to this criterion, reflexivity was used. Reflexivity or self-reflection of one's own biases was also considered important in this study. The intention was to remain as objective as possible in collection and interpretation of the data. This criterion has to do with the level of confidence that the research study's findings are based on the participants' narratives and words rather than potential researcher biases. Confirmability is there to verify that the findings are shaped by participants more so than they are shaped by a qualitative researcher. Confirmability occurs once credibility, transferability and dependability have been established. Qualitative research must be reflective, maintaining a sense of awareness and openness to the study and results. The researcher needs a self-critical attitude, taking into account how his or her preconceptions affect the research.

There are a couple of techniques that you can use to establish the confirmability of the research study's findings, Madriga et. al, (2011). These are:

Audit Trail. This is the most popular technique used to establish confirmability because it is incredibly useful when writing up the results chapter. An audit trail is when a qualitative researcher details the process of data collection, data analysis, and interpretation of the data. You record what topics were unique and interesting during the data collection, write down your thoughts about coding, provide a rationale for why you merged codes together, and explain what the themes mean.

Reflexivity. This is a technique that is useful in qualitative research, especially in phenomenological research. Reflexivity is an attitude that a qualitative researcher adopts when collecting and analyzing the data. A qualitative researcher must look at his or her own background and position to see how these influence the research process (i.e. selecting the topic, choosing the methodology, analyzing the data, interpreting the results, and presenting the conclusions). In order to achieve reflexivity, a qualitative researcher can keep and maintain a reflexive journal. Think of this as a diary where you reflect on what is happening in the research process, with regard to your values and interests.

Triangulation: This is something that every qualitative researcher should be familiar with. Triangulation involves using multiple methods, data sources, observers, or theories in order to gain a more complete understanding of the phenomenon being studied. It is used to make sure that the research findings are robust, rich, comprehensive, and well-developed. There are four types of triangulation that researchers can employ. They are methods triangulation, triangulation of sources, analyst triangulation, theoretical triangulation, and member-checking.

The confirmability criterion of trustworthiness may be the easiest one to establish, as it is just a matter of explaining the decisions that are being made in the research process. These details can help provide valuable insight for readers to understand how the themes emerged from the data. Other techniques researchers use to achieve confirmability may include: Taking notes regarding personal feelings, biases and insights immediately after an interview, following, rather than leading the direction of interviews by asking for clarifications when needed.

In order to ensure credibility of the data, I employed member checking. This is one of the most important techniques that qualitative researchers use to establish credibility. The data, interpretations, and conclusions were shared with the participants. This allowed the participants to clarify whether their intentions were correct or in error, and provided the opportunity to add any other information necessary. In addition, the researcher sought to

ensure credibility of data by engaging in what is termed analyst triangulation. By this he involved utility of another analyst (thesis supervisor) to review the findings or using multiple observers and analysts. This was helpful since it could illuminate blind spots in the research analysis process.

3.8 Procedure for Data Collection

The researcher sought permission from the Head of Department; HOD (Social Science Department) of participants involved in the study who subsequently informed the Unit Head of the Resource Centre for Students with Special Needs, other resource persons, as well as the researched in order to elicit their cooperation and assistance. Creswell (2012) maintained that it is important to respect the site where research takes place. This respect, according to Creswell, is shown by gaining permission before entering the site. The details of the permission letter could be found at appendix one of this document.

A pre-interview session was held between the researcher and the researched in order to explain the purpose of the study to participants. Participants were assured of the necessary confidentiality of information to be gathered and to book appointments with them. Due to the different schedules of participants' academic and social activities, appointments to meet focus group members were scheduled on Saturdays and Sundays where participants had time to meet. Focus group semi-structured interview involving the 14 students with visual impairments was conducted on the sample with interview items based on the research questions that were raised. The participants were put in 2 groups having forms 1 and 2 in one and form 3 in the other. Form 3 students were put in their separate group because they were considered to have experienced academics in the school the more and are better exposed to an optimum level of academic experiences. They were 6 members in the focus group. Forms 1 and 2 which were made up of 5 and 3 participants respectively. In order to ascertain the credibility of the data, the researcher earlier pre-tested his instrument in another school on

different participants. This helped the researcher to juxtapose the responses from the focused group interview with the results from the pre-testing responses.

The interview was conducted by the researcher in the presence of the Head of the Special Education Unit at the Resource Centre for Students with Special Needs. The interview session lasted between 45 to 60 minutes. The participants were given the opportunity to express their feelings and experiences without undue pressure on them. The interview was tape recorded on mobile phone and later saved on a laptop as a backup with the permission of participants and transcribed for analysis. Before analysis of the data, the researcher scheduled another meeting with the participants individually and the transcripts were read to the participants to confirm that the transcripts represented the views they shared.

3. 9 Data Analysis

In its original form, raw data collected from the field do not give much meaning. Data analysis is important as it is the way of describing and interpreting these raw data, in order to obtain the meaning and pattern from it (Bell, 2005) cited in Baraka (2013). The data was analyzed qualitatively using narrative themes from the interview data recorded and transcribed. Transcripts of focus groups were coded as group one for form three participants and group two for forms one and two participants respectively for the purposes of identification of responses from the various groups. The first step I took in my coding of the data was to assign identity names to the participating groups from whom data has been collected. Coding allows for the categories and patterns emerging from data to be decided in advance, and facilitates the interpretation of smaller units since the analysis begins with the researcher reading all of the data to gain the sense of the whole. Verbatim expressions of the participants were used in reporting the data where necessary.

Table 3: The table below indicates the main and sub themes that emerged out of the study for discussion.

MAIN THEMES	SUB THEMES
The academic interactions between students with visual impairments and their teachers	<ol style="list-style-type: none"> 1. Verbalization of instruction 2. Individualization of approach 3. Modification of diagrammatic content
Provision of academic resources	<ol style="list-style-type: none"> 1. Provision of optical and non-optical devices 2. Availability and efficiency of resource teachers 3. Provision of high-tech equipment
Efficiency of academic assessment strategies	<ol style="list-style-type: none"> 1. Teachers' response to additional working time 2. Diversification of academic assessment tools 3. Reduction and modification of test items 4. Provision of clues of test items
Access to academic information	<ol style="list-style-type: none"> 1. Access to library buildings and furniture 2. Access to academic information in accessible formats: <ol style="list-style-type: none"> i. Braille ii. Electronic iii. Large font

	3. Installation of application software.
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SOURCE: Researcher's deductions from data collected for analysis

The table below shows the main themes and their corresponding sub-themes that emerged from the data gathered. On the whole, four main themes were raised and under them varying sub-themes emerged. These sub-themes were the reference points for analysis, interpretation, and discussion in chapter four of the study.

3.13 Ethical Considerations

Ethical consideration is part of the research works, and cannot be avoided (Bryman, 2004). Observation of research ethics helps to protect the rights of the research participants, develop a sense of trust with them, and promote the integrity of the research Baraka (2013) citing Israel & Hay, (2006). Ethical considerations are very necessary in conducting any type of research with human subjects to protect the welfare and rights of research participants (Kimmel, 1996). To ensure that participants' health, safety, respect, and fidelity is sustained, the researcher sort for the consent of participants, that is, students' with visual impairments in the school who offered themselves to voluntarily participate in the study. The researcher explained to participants that their names will not be needed in the course of data collection to ensure confidentiality. Before the researcher began the interviews, he ensured that the purpose of the study was understood by the participants and also treated the rights of the participants with utmost care. Again, the researcher sought the permission of participants to use the tape recorder during the interview session in order to capture detailed data while concentrating on listening and prompting participants. The participants were promised that they could have access to the findings of the study and that they could contact the researcher if they had problems concerning this study.

In order to determine the appropriate duration for data retention, there is the need to carefully consider the legal requirements, the purpose and utility of the data, privacy concerns,

industrial best practices, and the outcomes of risk assessment and impact analysis (Smith, 2020; 15(2). P 45-59)

To effectively manage the data gathered in this study by way of ensuring privacy, security, utility, and legal compliance, the researcher deems it fit to keep this data for a minimum of five years.



CHAPTER FOUR

4.0 ANALYSIS, INTERPRETATION AND DISCUSSION OF RESULTS

This chapter presents the results and discussions of findings from the study. The analysis reflected on the themes that emerged from the interview data collected on the themes of the research questions.

The chapter is divided into four major subheadings which include:

- The experiences of learners with visual impairments in Mawuli School, Ho with reference to; adaptation of teaching pedagogy and modification of curricula content.
- The experiences of students with visual impairments with regards to provision of academic resources in the school.
- The responses of students with visual impairments to the various assessment strategies designed for students with visual impairment in the school.
- And finally, the reactions of students with visual impairments in light of access to academic information (library service); Access to library building and furniture as well as access to information in tactile, large prints, and electronic formats.

4.1 Analysis of Results

4.1.1 Research Question 1: How is the academic interaction between students with visual impairments and their teachers in Mawuli School?

To answer this research question, the data collected in the interviews were used.

Three sub themes that emerged from the data- verbalization of instruction, individualization of approach, and modification of curricular content were used for the analysis.

Verbalization of instruction

With reference to verbalization of instruction, the interview revealed that teachers of Mawuli School have been able to appreciably verbalize or vocalize their instruction in the teaching and learning process to suit the learning needs of students with visual impairments even though there was still more room for their improvement. Few others needed In-Service-

Training in order to become abreast with appropriate inclusive classroom teaching. Students affirmed this assertion with the following comments:

The method the teachers used was okay with some of us. The majority of my teachers will first explain whatever they want to write on the board before doing so. This made us the visually impaired in the class to have idea or knowledge about what is going to be written on the board even though we cannot read it ourselves. (Verbatim expression by a participant in the focus group one)

Another student further deepened the concern;

The teachers usually dictate what they have written on the board through my constant reminders I provide to announce the presence of persons with visual impairments in the class. Though sometimes they forget us in a way, but when I draw their attention, they quickly respond and even go to the extent of apologizing to us for the forgetfulness. (Verbatim expression by another participant in focus group one).

From the responses of the participants, it was evidently clear, that even though some teachers did very well in terms of verbalisation of instruction in the inclusive classroom, yet some others still lacked the understanding of handling an inclusive class. Their presentations were always veered to teaching in the general classroom in spite of the constant reminders provided them. More light was thrown on the subject by yet another student:

Some of our teachers write on the board throughout their lesson thinking we should also cope forgetting that they need to change their teaching method in the classroom to suit us all. (Verbatim expression by a participant in focus group two)

This student took the turn to also highlight the matter.

My French teacher always prefers to write on the board in spite of continuous reminders provided her about the presence of students with visual impairments in the class. (Verbatim expression by another participant in group one)

This student also had this to say:

Reading texts involving different characters were usually read by one and same person in the class. Reading lessons involving different characters must be acted out; that is, it must be read out by different learners to depict the very thing in the text book in order to enhance retention and recollection rather than one person reading out everything which ends in confusion. (Verbatim expression by another participant in group two)

It is obvious, that that some teachers have acquired the skill of effective verbalization of instruction needed in an inclusive classroom meanwhile some others also lack this principle of teaching. More In-Service-Training is required to enhance their capacity in the job.

Individualisation of approach

The focused group interview sought to give much insight on the ability of teachers to individualize their approach to teaching to foster a better understanding of students with visual impairments. It was revealed that in the lesson delivery processes most teachers involved students in their lessons by making their lessons student-centred and discussion-based.

This student had this to say:

The teachers are good in terms of student involvement in class. Their performances in their lesson presentation could be awarded a least of 50% on any scale. (Verbatim expression by a participant in group two).

Another student had this to say:

Our teachers always made sure that we the students with visual impairments also talk during instructional period. By this, they would ask questions and seek our views on the question too. Some of them rather preferred we ask questions in the class during teaching and learning. This trend made us confident to always express our views in class. (Verbatim expression by a group two member)

This student also shared her view on the topic:

Sometimes, my teacher held my hand and helped me to explore objects and materials that are being used to facilitate understanding of certain concepts. By so doing I was able to better understand the lesson because it cleared the abstractions off my views through practice.

(Verbatim expression by a participant; group one)

Modification of diagrammatic content

The focused group interview sought to illuminate the ability of teachers to modify the content of their lessons to the understanding of students with visual impairments. It was revealed that in the lesson delivery processes some teachers took their time to elaborate on or explain lessons that involved diagrams like pictures, charts, maps, and other drawings as well as real objects. This enhanced the conception for especially the visually impaired. In another disposition, some of the teachers rushed through lessons, forgot about detailing the students with visual impairments on diagrams, and handled the class like a mono-cultural class. This phenomenon deprived them from access to the indebt information and knowledge they need.

Some participants had the following evidences to give:

My government teacher was once teaching about the federal system of government and before drawing the governance structure on the board, he gave a detailed description and gave colleague students the opportunity to further explain the structure making it clearer for my understanding. (Verbatim explanation by a participant in group one).

Another respondent explicitly expressed his view below:

Our teachers are good in content modification especially in Integrated Science lessons which involved real materials and or diagrams. They explained the diagrams to us, made us to feel any material they used for instruction, and finally gave questions without diagrams for our assessments different from what they gave to our sighted colleagues. (Verbatim expression from a participant; group two)

A student said this:

My teachers will for instance bring toy cat to class for us to feel and to know what the real cat looked like. This helped me to better conceptualize and concretize any form of abstraction in their lessons they presented. (Verbatim expression from a participant, group one)

Another student said this:

Sometimes our teachers especially the Integrated Science teacher always rushed through lessons with the reason that we are far behind time and he needed to speed up so that we could complete the set curriculum for the semester. They sometimes drew diagrams on the board, labelled the parts, and gave their functions without explaining it for us to also get the import of what has been drawn on the board. Owing to that he did not make time to explain lessons that contained diagrams to us. (Verbatim expression by another participant in group one)

Another student expressed his view on the topic as below:

Our teachers are ignorant about we the students with visual impairments; they don't have much knowledge about us therefore they do not know how to tailor their content to suit us without unnecessarily dragging the lesson behind. They sometimes ask questions or make comments that are rude on their part, offensive and unpardonable on our part yet we just have to ignore and pardon their ignorance and answer those questions anyway. (Verbatim expression of a participant in group two)

4.1.2 Research Question 2:

What are the experiences of students with visual impairments on provision of academic resources used in the school?

To answer this research question, the interview data collected were used. Three themes were identified from interactions with the focused groups: provision of optical and non-optical devices, provision of High-tech equipment, and provision of Resource Teachers.

Provision of optical and non-optical devices:

On the provision of optical and non-optical learning resources, the expressions of the participants exposed a huge challenge that confronted them which served as impediment to effective academic achievement. They unanimously lamented on the inadequacy of learning resources in general. They indicated, that unlike Brailled materials which were in abundant supply on the shelves in the library, other learning materials such as Optical and non-optical resources among others were not available in the school at all.

A student had this to say and was being endorsed by all other participants:

We have tactile or Brailled learning materials in excessively abundant quantities which has always helped our learning but the greatest challenge we have had is with all other learning resources. We do not have them at all, not to talk of their adequacy. (Verbatim expression of a participant in group two)

Another student said this:

We do not have tools like magnifying lenses in the school to help us the students with low vision to be able to do effective reading of print materials. This has made Braille a compulsory mode of reading to both the low vision and the blind in the school even though we prefer to also use print more often. (Verbatim expression of a participant from group one).

Again, this respondent had this to say:

My reading lenses are not helping me because it is old. I prefer to have a magnifier in the school to help me read but the school does not have it so I am compelled to read Braille just like the blind students do even though I am partially sighted. . (Verbatim expression of a participant from group one).

Furthermore, another respondent lamented as below:

We the students with visual impairments are two separate categories; the low vision and the totally blind. In Mawuli School, special preference has been given to the blind over the low vision. This is because all the reading materials we have in our library are in Braille without a single book in large font print for the low vision. Somehow, I see that the low vision students

in the school have but less priority. Large print of all our academic materials should be made available on the library shelves as well. This will enhance our reading capabilities for better performance. (Verbatim expression of a participant from group two).

Availability and efficiency of Resource Teachers

The issue of resource teachers and their efficiency generated diverse opinions of expressions from the participants. Participants had different stories to share about the availability, adequacy, and efficiency of Resources Teachers in the school. They maintained, that even though material resources may not be enough, Resource Teachers have really done so well by brailleing textbooks in almost all textbooks and literature materials to enhance their learning. This, they said has put them on top of their colleagues in other inclusive schools since all other inclusive schools do not even have the brailled materials for study according to their friends. On the contrary, other students were of the view that the Resource Teachers should do more than they are doing now since sometimes transcription of their works delay with them. Additionally, when some of the respondents had the view that Resource Teachers in Mawuli School is not enough to face the available workload, others said the number (2) is enough to handle 16 students with visual impairments present in the school.

A participant declared this:

I want to commend our Resource Teachers for their unstinting efforts in the preparation of enough brailled textbooks for us. We are better off than our other colleagues in the other inclusive schools in the entire country since they always complain of not even haven textbooks in their schools. (Verbatim expression by a participant from group one)

Another student vocalized his opinion as below:

We also have all the textbooks and literature materials in soft copy made available by our Resource Teachers on our laptops for studies. This has made learning easy for us since the materials are always available to us at the stretch of our hands. This electronic mode of learning facilitates learning for us better.

(Verbatim expression of another participant in group two)

It is obvious, that there were mixed feelings and opinions from students with regards to the availability and adequacy of material resource resources for learning. Students who do not offer Elective French were so happy with the availability and adequacy of textbooks in both Brailled and electronic forms. On the other hand, the French students also lamented about the absence of their learning materials for French as a subject and that the situation is seriously ‘casting shadow’ on effective learning. They had textbooks in all other subjects in Brailled and electronic formats except French.

Students had these to say on the above topic:

The number of Resource Teachers we have is not enough, they are only two yet the demand of their works is so much. We need additional ones to beef-up the existing numbers in order to ease their pressure. (Verbatim expression by a participant; group two)

Another student said this:

The number of Resource Teachers is woefully inadequate. The workload they have is so high that they don't have any time of rest especially during time of examination. The two of them had to braille exam questions, conduct the exam, and do transcription of our scripts concomitantly. This oftentimes makes them suffer divided attention and also lose focus on one or two of the 3 activities that they always ran concurrently. Most often than not, they carried our brailled exam scripts to the house and transcribed all over the night in order to present them on time to the various subject teachers for marking and assessment. Additional Resource Teachers are needed. (Verbatim expression by a participant in group one)

This student also had this to say:

Our Resource Teachers are good and they always did their best in spite the difficulty they go through to make sure we are being served well. I suggest one more is added to them in order to relieve their stress levels a bit and to also enhance their work. (Verbatim expression by one of the respondents)

Another student with view contrary to those above said this:

In my opinion, the number of Resource Teachers in the school is okay. Comparing the number of students with visual impairments (16) with the staff strength of the Unit (2), I believe we do not need any additional ones now. Instead, they should step-up their working spirit in order to meet their job demands at the Centre. (Verbatim expression by a participant in group one)

There was yet a third view from one of the students about the number and efficiency of Resource Teachers as expressed below:

I think the number of our Resource Teachers Vis Avis the number of students they are presently handling is okay for them and because of that they are very up to date on their task delivery. They brailled any learning material we needed for enhancement of learning, and always transcribed our scripts on time. We have been speaking to some of our friends in other schools and they do tell us that sometimes they work and for a long time their scripts would not be transcribed and other times these scripts even got lost. Our Resource Teachers go the extra mile to submit some of our works to our various subject teachers on our behalf. In fact, they are really doing so well. (Verbatim expression by still another participant; group one)

This is another submission made by another respondent:

The effectiveness of our Resource Teachers is really good and when it comes to their number, though I see it to be okay because they deliver on time and we are always being served to our admiration, I think they themselves are in the best position to tell whether they need additional hand or not. This is because they know the level of pressure they had to bear in discharging their duties. (Verbatim expression by a participant; group two)

From the submissions above, it was evidently clear that almost all of the students really appreciated the efforts of their Resource Teachers. The students gave these commendations based on the facts that these teachers always demonstrated selfless devotion in rendering their services. They were always on time in all their activities regardless of the challenges thereof in their ways. They were always ready to do the extra in order to satisfy the work demands of

their students. Furthermore, their operations were student centered, leaving no stone unturned in the best interest of their clients; the students.

Secondly, concerning the number of Resource Teachers in the school, the students expressed mixed feelings about it. Even as some were of the view that it is okay as compared to the number of students with visual impairments present in the school at the moment, others had it differently that the number is inadequate and needed to be beefed-up. This they said making special reference to the volume of workload that the only two teachers available had to bear.

Provision of High-tech equipment

Furthermore, the responses of these participants unearthed the fact that students with visual impairments in Mawuli School, Ho lack learning materials such as Computers, Audio-Visual aids, Close Circuit Television among others. This menace is hampering on effective academic work.

A participant had this to say:

Learning of ICT is really difficult for us because we have only 2 desktop computers in our resource Centre for the 16 of us which is creating a lot of academic barriers for us. We will need additional computers so that the teaching and learning of ICT can be enhanced.

(Verbatim expression by a participant in group two)

Another student had this to say:

Because we have only two desktop computers, anytime there is ICT class, about four or more students used one computer at a time. This has resulted in poor practice of new concept and makes it difficult to grasp the information or new skill being learnt. (Verbatim expression of a participant; group one)

4.1.3 Research Question 3: How efficient are academic assessment strategies designed for students with visual impairments in the School?

To answer this research question, the interview data collected were used. Four themes emerged out of the interactions with the focus groups: Teachers' response to the issue of

additional working time for students with visual impairments, variation or diversification of academic assessment tools, reduction and modification of test items, and provision of clues/explanation of test items.

Teachers' response to the issue of additional working time for students with visual impairments

This sub-theme is to find out and deepen knowledge on the school's understanding and cooperation with the students with visual impairments in terms of adaptation of time management to suite their speed capabilities.

One student had this to say:

Mawuli School has always responded positively to our need of extra working time during class exercises, tests, and examinations. For example, if our sighted colleagues use 3 hours in an examination, we are given additional 1 hour 30 minutes making it 4 hours 30 minutes in all for that particular examination. That represent 50% extra time of the actual working time being awarded us to enable us comfortably finish with the work. (Verbatim expression by a participant in group two)

Another participant had this to say:

Our teachers always gave us extra time to finish with our class exercises. Sometimes the extra time allowed us is given as favor to even our sighted colleagues which they also occasionally enjoy because of us. (Verbatim expression by another participant in group one)

Another student also said this:

Sometimes, our teachers tested in order to both observe and to help improve our writing speed. These times, they gave the whole class work to finish at the same time. But the good thing about it was that if we the impaired students were unable to meet the time lines and we request for the additional time, the teachers obliged. (Verbatim expression by yet another group one member)

Participants' responses on this sub-theme was skewed to expose and establish the kind of treatment students with visual impairments received in times of their examinations by their invigilators; whether they are being allowed to enjoy the needed extra time or not.

This student had this to say;

Our invigilators give us stern invigilation, in the sense that when it is time, it is time; they do not allow us to continue once time is due. (Verbatim expression by a participant in group two)

Another student had a different view of the issue, and it goes this way:

Even though my friend may be true but I see leniency on the part of our invigilators. They are not too strict like the way they invigilate our sighted colleagues. My teacher once said, 'we all want you to pass and go to where people have been going, without them looking down upon you', he added. (Verbatim expression by another participant in group two)

This student also viewed the discussion in a different view. She was of the view that their invigilators have never been strict or liberal. The invigilators just followed the laid down practices of examination and ensured students did the right thing. In this case, students were punished when the law caught up with them.

(Verbatim expression by a respondent I group two)

There was a sharp objection to the immediate response above by another participant as below:

I disagree with you! When has it ever happened in this Resource Centre that students are sent out for misconduct in exams? Examination and invigilation have been so lenient and liberal without any tension on us. (Verbatim expression by a participant in group two)

Additionally, a student had something else to say:

We always enjoyed extra or additional working time unlike our sighted friends. This helped us to be able to work within our pace without rushing. (Verbatim expression by a participant in group one)

Furthermore, another student gave his view below:

Our invigilators had also been very patient with us anytime we wrote examination. This friendly atmosphere helped us to concentrate on our work until we finished writing within the allowable time frame. (Verbatim expression by a participant in group two)

Moreover, this student also said this:

Whenever there was a misunderstanding or confusion about any of our test items, the invigilators read out the particular question again for clarity and the time used is still factored in for our convenience. (Verbatim expression by one of the participants)

From the expressions of the participants above, it is very clear that both Management and teachers of Mawuli School, Ho have a good orientation which has aided them to understand that students with visual impairments need additional time to respond to test items. Therefore, during times for class exercise, tests, and examinations 50% of the original time is given as extra working time for these students with visual impairments.

Still on this point, considering the views of the participants, it was realized that few students were of the view that their examinations were met with strict and inconsiderate attention by invigilators with regards to use of time. Another person declared that, it was neither strict nor liberal; it was just a normal examination without any special consideration. Majority of the participants were affirmative in their viewpoint. They mentioned that, examinations had been met with lots of considerations which the sighted colleagues never enjoyed. These special treats included the enjoyment of additional working time, modification of test item when necessary, liberal invigilation among others. These they concluded, aided their academic achievement.

Variation or diversification of academic assessment tools:

This sub-heading sought to find out the various modes of assessment that students were exposed to during their course of study. It further focused on how favorable these different modes of assessment were to them.

This student who was a member of group one expounded on the theme below:

Some of the ways by which we were assessed were class exercise, assignments, and tests. I was comfortable with the way they were being conducted. They were always friendly; in that teachers always considered the plight of students with visual impairments anytime they worked on assessment tools.

Another student who was a member of group two had this to say:

Examination is one of the several modes of assessment but personally, I am not happy with it at all. This is because it was clear on my result slip that my Ewe teacher did not use the continuous assessment score but only used the exam score. I was not pleased about such a serious denial at all.

This student also said this:

It appears to me that some of our teachers assess us by cooked marks and these marks do not really reflect our true performances. It is as if they do not make use of our continuous assessment score at all. The reasons are that I do not offer Mathematics yet when I went and printed my results, I had A1 in Mathematics. Also, I do better in class exercises, assignments, tests and exams than some sighted students yet at the end of exams their grades were better than mine. That is really disheartening and need to be reexamined critically. (Verbatim expression by yet another participant in group one)

Still on the point, a respondent commented this way:

I think the problems we have with our examination scores originates from the Records Room. This may be because the students are so many yet teachers are expected to finish imputing their scores within a short period of time. Teachers can decide to put in just anything for the students once they are pressed of time. I suggest that our Resource Teachers should do an intensive supervision of the entries of our scores by the various subject teachers in order to make sure the right thing has been done for us students with visual impairments. (Verbatim expression by a group one member)

Again, this student

We are usually assessed by class exercises and tests and I do not have any problems with it because the teachers are doing well with them. (Verbatim expression by a participant; group two)

Furthermore, this student also gave his side of the matter:

As for me, I have problem with group assignments. When group assignments are given our sighted friends usually do it alone without involving us. Sometimes they think they do not want to bother us or they thought they could do it on our behalf. When it happened so, we found ourselves wanting during time of presentation in the classroom because the teachers were not aware of those who did the work so they called anyone at random which sometimes brought disgrace to us before the class because we were unable to present well. Another problem in joining the group work has mostly been with getting a uniform time to do the work.

(Verbatim expression by a student in group 1)

On same point, this student mentioned this:

Sometimes the reluctance of some group members to participate in group assignments also limited the scope and quality of work. When this happened the entire group's members had low marks which did not actually measure their individual performances.

(Verbatim Expression by a participant)

From the responses of the participants, some critical concerns were raised which needed attention in order to ensure smooth assessment of students' academic work. It came to light that a range of assessment tools were used by teachers of Mawuli School to ascertain the academic performances of these learners. They include class exercises, assignments, group works, tests, and examinations. Students were happy for the variety and wide range of tools being used to assess them. That notwithstanding, the students with visual impairments had serious concerns against the use of 'Group Assignments'. According to some of them, when

group assignments were given, they found it difficult to participate and contribute to it for the following reasons:

- Unnecessary sympathy: the sighted colleague group members thought it is a worry to disturb them the students with visual impairments at those times they met to solve the problems. They therefore decided to meet all alone to do the work neglecting them and also making waste the rich inputs they would have made if they were to be part of the work. Sometimes, their groups scored less because only a few people met to do the work which led to narrowing their responses to the problem. Other times too, teachers thought the students with visual impairments are lazy that is why they did not participate in the group work, especially when anyone of them is called to do presentation on behalf of their groups and they are unable to do it well.
- Underrating of competences: it did also happen, that the sighted students high-jacked group assignments and did it all alone because they thought the students with visual impairments did not have any good input to make to the success of the group work. By this, they both denied the neglected students and the entire group of knowledge, skills, attitudes and values as well as some competencies they would have benefited the whole group should they have met in totality.

Reduction and modification of test items:

This sub theme sought to unearth the strategic move of teachers of Mawuli School in trying to do a better assessment of work of students with visual impairments. The focused group interview revealed the following vitals facts:

A participant said this:

Our teachers have always done so well by ensuring that they change test items or exam questions that have diagrams and also those that have calculations in them to suit we the students with visual impairments. This phenomenon has always made it possible for us to be

able to attempt and respond to those questions without any much difficulty. (Verbatim expression by one of the participants in group two)

Another participant had this to say:

Mawuli School teachers are good; they sometimes replace any question that has a diagram with a similar question but without a diagram so that we the students with visual impairments can also respond to those questions. The strategy helps to make those questions clearer to us.

(Verbatim expression of one of the participants; group one).

Another participant continued to share his view on the issue:

Mostly, our teachers did not give us less work as compared to our sighted colleagues because of our disability. They considered that we both could handle equal tasks and that reducing the quantum of our tasks may mean discrimination or underrating of our ability. (Verbatim expression by another participant; group two)

Another participant disclosed; this:

My teacher once said in class that school-based exams were to prepare us for the West African Secondary School Certificate Examination (WASSCE). Therefore, every student irrespective of disability must be given tasks that commensurate with the WASSCE as a way of adequate preparation. So, she always gave the whole class equal amount of assignments, tests, even examinations. (Verbatim expression by a participant from group one).

The study consequently revealed that, teachers of Mawuli School did very well in modification of test items for students with visual impairments to suit their conditions. Diagrammatic questions either saw alteration or were completely replaced with similar order of question for the sake of the student with visual impairment. Furthermore, it was also obvious, that teachers never reduced the quantum of assessment tasks given to students with visual impairment due to their disability, instead they were equipped the hard way for the sake of preparation towards their final examinations.

Provision of clues/ explanation of test items.

This sub theme was to help in finding out which efforts teachers make in making sure that students with visual impairments well understood test items before attempting to answer them. The study revealed the following concerns from students.

A student explicated this which was unanimously endorsed by all other participants:

It has always been said that, 'understanding of the question is part of the examination', yet the case was different with students with visual impairments in Mawuli School. As a way of giving clue to us in order to be able to handle difficult questions, our teachers often explained those questions to us for better understanding. This strategy has always given us the opportunity over our sighted colleagues since questions are not being explained to them. It made us to approach exam questions appropriately without deviating most at times.

(Verbatim expression by a participant)

This theme revealed that the students enjoyed extra time in any assessment activity that took place in the school. Also, students with visual impairments in Mawuli School benefited from variation or diversification of academic assessment tools. Furthermore, it was revealed that these students never had access to reduced test items but modified test items. And finally, the students with visual impairments enjoyed provision of clues through explanation of test items as a way of assisting them to understand test items and to answer them very well.

4.1.4 Research Question 4: How do students with visual impairments access academic information in the School?

To answer this research question, the interview data collected were used. Three themes stood out from interactions with the focus groups: access to library building and furniture, conversion of print materials into accessible formats for students with visual impairments, and installation of electronic application software (JAWS) for electronic learning.

Access to library buildings and furniture:

Per this sub-theme, the research sought to identify how accessible the school's library building as well as its facilities like furniture was to the students with visual impairment. On this, all the participants unanimously said this:

We have a fine and a well- organized library specially and solely made for the students with visual impairments in Mawuli School. This library is created right inside our Resource Centre different from the school's main library which is situated far away in the school's administration block. The library's building and its furniture are very accessible, easy and comfortable to use by every student, whether with disability or not. The room is also arranged in such a way that created convenience and gave easy access for all students to access all the materials that were in thereof.

(Unanimous expression by the all participants).

Other participants also had this to say:

The library is sited inside the Resource Centre where we always stayed (over 16 hours every day), so the library is rather sitting in our home. The library is centrally located in our Resource Centre so it made it easy for everyone to locate it from every direction in the room.

(Unanimous view by all group members)

It was too obvious from the responses of the participants that the accessibility of the library and its facilities was almost if not 100% on a rating scale. There was not one challenge about getting access to the library building and its facilities.

Conversion of print materials into accessible formats for students with visual impairments

This sub theme was focused on identifying the usefulness of the modes of lettering for students with visual impairments with reference to access to information in their library. This sub theme seeks to find out the various ways in which print textbooks are converted into for the consumption of students with visual impairments. The study considered Braille, Large Prints, and Electronic mode.

Conversion into Braille format

A participant had this to elucidate:

Our Resource Teachers have done an extremely commendable job in converting the available curriculum materials in the form of text books and literature materials into Braille for us. This puts us above our companions in other inclusive schools in the entire country because anytime we spoke with anyone of them, they lamented about the difficulty of access to academic materials in Braille. Kudos, to our Resource Teachers. (Verbatim expression, participant, group one)

Affirmation from another participant:

Even our own predecessors here in Mawuli School made us aware that we are so privileged that in our time reading materials are available in their numbers for us in Braille; something that they did not experience in the life of the school during their days. They credited the good works to the effort of their resource teachers. (Verbatim expression by another participants, group two)

Another student added this:

The information received from the library has actually been helpful to us since it reflects the very things we learn in the classroom. We are really advantaged because we cannot have Brailled textbooks to buy in the market but we have them here on our library shelves. We really appreciate the impact it is having on us. (Verbatim expression by a participant, group one).

Conversion into Large print format

With reference to large fonts, there was a general lamentation especially by the student with low vision. The signals gathered by the study indicated that most attention has been placed on the use of braille at the expense of large fonts. This phenomena has imposed on even the low vision to also use braille though they can read print.

The participants unanimously had this to say:

Not all of us are totally blind to use braille. Some of us can see to some extent and would prefer to read print than to read braille but unfortunately all the materials in the library is in braille. We are therefore compelled to read the braille. We suggest that all effort should be made to prepare all the brailled materials in large font for we the low vision to enhance our studies. (Verbatim expression by the participants, group one)

Conversion into electronic format

This sub theme also focused on finding if learning materials were converted into electronic media for easy access by students with visual impairments. At this instance too, resource teachers were applauded for ensuring that all the academic materials being used by students were put in electronic mode.

Participants had this to say:

Our resource teachers have done so well in this regard too. All the academic materials we use in the school are put in soft copies on our personal laptop computers, the office desktop computers, Mp3 players, and even on our pen drives. This effort is worth commending, we pray God's blessings for them. (Verbatim expression by participants unanimously).

From the responses above, it was evidently clear that out of the three modes of information accessibility by the students, two were effectively utilized in Mawuli School (braille, and electronic) except large font for the low vision which was not available.

Installation of electronic application software (JAWS) for electronic learning.

This sub theme concerned itself with finding out if students with visual impairments have access to the use of application software for the blind such as JAWS which aids their electronic reading activities. The study revealed an affirmative response, indicating that students have access to facilities that help them to do screen reading.

A participant had this to say: our resource teachers helped us to install screen-reading software on our personal computers which we use to read the soft copy of textbooks we have

on our laptop computers. By using this application software, we are able to comfortably read at convenience. (Verbatim expression by a participant, group two)

Discussions of Findings

Academic Interaction between Students with Visual Impairments and their Teachers

4.2.1 Making reference to research question one which focused on finding out the experiences of students with visual impairment in relation to teachers' adaptation of pedagogy and curricular content modification, it was evident from the analysis that the nature of academic interactions between the students and their teachers was satisfactory. From the responses of the students, it became clear that the methodology of the teachers in Mawuli School was commendable in part. Most of them could handle their classes such that even the students with visual impairments could understand lessons very well. Their approaches were student-centred and activity oriented which included verbalization of instruction and individualization of approach. Students with visual impairments were deeply engaged in lessons using exploratory, discussion, and question and answer methods.

The students' vivid description of how they were involved in the teaching and learning process revealed that majority of teachers made conscious efforts at ensuring that they participated in class activities. The students were also pleased with the recognition given to them by the instructors in class and appreciated their efforts made to ensure their participation in class activities. It was evident from the analysis that students valued the efforts of teachers in ensuring that they had groups and participated in the oral presentations of the group works. Notwithstanding that, some few of them were very much lacking and found it difficult to adjust to the trends of inclusive class teaching. The study further revealed that teachers in Mawuli School have great knowledge of content in their respective subject areas. Majority of these teachers consequently have good knowledge about content modification in order to suit the students with visual impairments. It was revealed that in the lesson delivery processes most teachers took their time to elaborate on or explain lessons that involved diagrams like

pictures, charts, maps, and other drawings as well as real objects. This enhanced the conception for especially the visually impaired students. Armstrong (2000) noted that adapting the curriculum involves differentiating instruction to provide learners with a variety of ways to process information and demonstrate what they have learned, in order to "match" the way in which each learner learns most effectively. This, Armstrong asserts that, it could be cumbersome for teachers to handle. Teachers' knowledge is key to quality education and central to the success of inclusion. This reflects Ocloo (2002), that 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, some few teachers in Mawuli School lacked adequate knowledge, skills, and techniques of effectively content modification to suit the students with visual impairments in their classrooms. These teachers rushed through lessons, forgot about detailing the students with visual impairments on diagrams, and handled the class like a mono-cultural class. In spite of the constant reminder of the presence and needs of these students with visual impairments, they still found it difficult to adapt to spirit of an inclusive class. These teachers need on-the-job training (INSET) in order to update them on the appropriate ways of teaching in inclusive classroom. Without adequate training and preparation, teachers would be less sensitive and responsive to the needs of students with special needs, which would in turn affect the participation and performance of the students. The importance of teacher preparation before the introduction of new educational policies was stressed by Hardman, Drew and Egan (2005), 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 and communicated so that the significance of the role of the teacher might be more appropriately highlighted and understood within the inclusive education institution. This phenomenon deprived them from access to the indebt information and knowledge they need thereof.

Provision of Academic Resources

4.2.2 With regards to research question 2 which focused on finding out about the provision of academic resources to aid the learning of persons with visual impairments in the school. The analysis focused on provision of optical and non-optical devices, high-tech equipment, and resource teachers.

The findings revealed through the expressions of the participants a huge challenge that confronted them which served as impediment to effective academic achievement. They unanimously lamented on the inadequacy of learning resources in general. They indicated, that unlike Brailled materials which were available in excess supply on the shelves in the library through the hard work of their own Resource Teachers, other learning materials such as: Large Prints, Audio resources, Optical and Non-optical resources, Maps, Reading Stands and Slits, Charts among others were **not available** in the school at all. The result confirms the findings of (Ocloo, 2003) who noted that many learners 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. Optical devices play a key role in enhancing vision and reducing visual disability in pupils with low vision. They include standard prescribed spectacles for both distant and near vision, magnifiers, telescope, among others. The availability and utility of these learning resources highly enhance learning among the visually impaired. Aduwa-Ogiogbaen and Imogie (2005) asserted that materials and resources including, opaque projectors, still pictures, maps, charts, graphs and many more are available in schools and offer a variety of learning experiences individually or in combination to meet different teaching and learning experiences. Incorporating these tools and materials present, supports and reinforces teaching. Unfortunately, the case of Mawuli School was different, because none of these learning materials were available, especially to support the learning of the Low

Vision. The concentration seemed to be solely on the totally blind and Braille users who had lots of learning materials (Textbooks, Literature materials, Bibles, and Past Questions) at their disposal. There were no Large Prints, Reading Slits, Reading Stands, and Magnifiers among others which are materials that support the learning of the Low Vision. Even though there were some low vision students among them who needed the above materials support yet they were all compelled to read Braille as their main source of learning. The phenomenon place academic limitations on the learning of the student with Low Vision in the school.

Another important challenge that was exposed by the study was the difficulty with availability and practice of assistive technology (High Tech Equipment). It was found that the school had only 2 desktop computers at the Resource Centre for students with visual impairments which were woefully inadequate to support the learning of ICT skills. Additionally, the school had other gadgets such as 1 Braille Embossment Machine, 1 Scanning Machine, and 1 Printer.

Gadgets like Closed Circuit Television, Photocopiers, Sound Recorders among others were not available to learners. Because of this some of the students had to acquire their own laptops and sound recorders to help them practice. Studies showed that assistive technology devices have a positive impact on the lives of students with visual impairments, such as motivating students (Cooper and Nichols, 2007; Strobel et 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 (Cohen, 2007). Researchers and practitioners acknowledge that 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 to understand their environment when it is in a good state (Cahil et al., 1996). A deepened interrogation further revealed that assistive device like Close Circuit Television which could enhance the reading skill of the partially sighted was not available in the school

to facilitate inclusion. This lack really hampered on the academic achievements of this category of students in the school.

More to the point, the study focused also on adequacy of Resource Teachers in the school and their efficiency. The revelation made by the study with regards to the topic was so fascinating because it was met with mixed feelings. When some of the participants were strongly with the view that the number of resource teachers was not enough for the tasks around them, others were of the view that it was ok and that the two who are available need to work harder in order to meet their job demands. The study however, showed that resource teachers (Special Education Needs Teachers) who are trained experts or specialists were attached to Mawuli School where these students with visual impairments were being included to provide them daily support needed for the development of their academic prowess. Resource Teachers rendered direct services to both regular classroom teachers and students with visual impairments. They indirectly render services to regular classroom teachers in the form of orientation and workshops on how to handle pupils with special needs.

Nel et al. (2011) are of the opinion that this support includes a speech therapist, a psychologist, an occupational therapist as well as a remedial teacher who is prepared to provide the other teachers with in-service training. According to Nel et al. (2011) the best support experienced by a learner with barriers to learning is to be assisted by a specialist in the field of the barrier. However, this is not always possible, due to limited financial and human resources, as well as accessibility. The study revealed that Mawuli School resource teachers also found it difficult organizing workshops for the regular classroom teachers due to financial constraints. This made it difficult to re-orient the teachers who have challenges in handling inclusive class.

The analysis of the comments from the students revealed that, staff at Mawuli School Resource Centre provided variety of academic support including, scanning of print documents and books to be used on students' personal computers that had screen readers, Brailled

textbooks production, embossment of other learning materials. The analysis indicated that the supports provided were tailored towards the needs of individual students. The major supports that appeared in the comments of all the focus groups were the production of textbooks, transcription of brailled scripts and provision of soft copies of learning materials for the students. The respondents really praised resource teachers for massive efforts they put in their academic work with special mention of the production of Brailled textbooks, Literature materials also in Braille, and finally soft copies of all these books on their personal computers. In expressing their views, the students noted that the supports they received from the Resource Centre were not only related to academics but included supports that were related to their welfare and safety. It was evident that the students received supports they requested in good time with an uncompromised quality even though there were isolated cases where some works delayed and also had some minor errors. A study by Dutta, Schiro-Geist and Crandall (2003) cited in Acheampong (2017) confirmed the findings of the current study indicating that, participants in their study reported high levels of satisfaction with the supports they received from the disability support service. On the contrary, Sharpe, Johnson, Izzo and Murray (2005) reported participants' low level of satisfaction with supports received from the disability support units.

From the analysis of the comments, the students revealed that they scarcely received support in ICT instruction, note-taking and orientation and mobility training due to limited number of qualified staff at the Resource Centre. It was revealed that most students wanted the management of the school to recruit more staff, provide an equipped ICT laboratory with a specialist instructor and purchase more supportive equipment and devices such as Close Circuit Television, Perkins Brailers, Magnifiers, Computers, Recorders and new technological devices for the blind in view of the inadequacy and or absence of this equipment. Supporting these findings, Teye (2014), identified students with disabilities

difficulty with access to computers and the inadequacy of computer training as barriers to computer use among the participants.

Efficiency of Academic Assessment Strategies

4.2.3 Research question 3 sought to find out about the efficiency of academic assessment strategies designed for students with visual impairment in Mawuli School. Special consideration was given to sub themes such as teachers' response to the issue of additional working time for students with visual impairments, variation or diversification of academic assessment tools, reduction and modification of test items, and provision of clues/ explanation of test items.

The study sought to find out if students enjoyed the element of time as a resource; that is allowance of additional working time during assessment activities like tests and examinations.

The students indicated that they were given extra time to complete class exercises, tests, and examination and teachers sometimes extended such opportunity to their sighted colleagues which they welcomed very much. The students indicated that occasionally they were not given enough time to complete their class exercises. To this they explained that, the teachers did that as a way of knowing and enhancing their writing speed. Findings of this study were supported by Madriaga, et al. (2010) cited by Acheampong (2017) who found out that, students with disability had greater difficulties than students without disability with reference to the amount of time required to complete coursework. Furthermore, the interview further revealed issues about the kind of treatment meted to these students during examinations by their invigilators regarding time allowance. It was established that few students were of the view that their examinations were met with strict and inconsiderate attention by invigilators. Another person declared that, it was neither strict nor liberal; it was just a normal examination without any special consideration. Majority of the participants were affirmative in their viewpoint. They mentioned that, examinations had been met with lots of considerations which the sighted

colleagues never enjoyed. These special treats included the enjoyment of additional working time, modification of test item when necessary, liberal invigilation among others. These, they concluded, aided their academic achievement. The students indicated that occasionally they were not given extra time to complete their class exercises. This was a deliberate attempt made by our teachers to increase our working speed, they added.

Additionally, the study focused on various modes of assessment that students were exposed to during their course of study. It further focused on how favorable these different modes of assessment were to them. From the responses of the participants, some critical concerns were raised which needed attention in order to ensure smooth assessment of students' academic work. It came to light that a range of assessment tools were used by teachers of Mawuli School to ascertain the academic performances of these learners. They include class exercises, assignments, group works, tests, and examinations. Students were happy for the variety and wide range of tools being used to assess them. That notwithstanding, the students with visual impairments had serious concerns against the use of 'Group Assignments'. According to some of them, when group assignments are given, they find it difficult to participate and contribute to it for the following reasons:

- Unnecessary sympathy: the sighted colleague group members thought it is a worry to disturb the visually impaired students at those times they meet to solve the problems. They therefore decided to meet all alone to do the work neglecting them and also making waste the rich inputs they would have made if they were to be part of the work. Sometimes, their groups scored less because only a few people met to do the work which led to narrowing their responses to the problem. Other times too, teachers thought the students' visual impairments are lazy that is why they did not participate in the group works, especially when anyone of them is called to do presentation on behalf of their groups and they are unable to do it well.

- Underrating of competences: it did also happen, that the sighted students high-jacked group assignments and did it all alone because they thought the students with visual impairments did not have any good input to make to the success of the group work. By this, they both denied the neglected students and the entire group of knowledge, skills, attitudes and values as well as some competencies they would have benefited the whole group should they have met in totality. The analysis of participants' comments revealed that they were pleased with their experiences regarding assessment of learning. It could be noted from the analysis that the students were fairly satisfied with the nature of assessment items and opportunity for alternative medium of assessment. They indicated that question items presented to them during class tests, class exercises, assignments, and examinations were devoid of mathematical concepts, diagrams and tables which require vision to answer. The students noted that they were given extra time to complete examination and teachers sometimes gave them the opportunity for alternative medium of assessment. It could be deduced from the comments of the students that, different methods such as individual assignments, group works, class tests and end of semester examinations were employed in their assessment. These findings were consistent with that of Waterfield et al. (2006) cited in Acheampong (2017) found that using alternative methods of assessment benefit all students including students without disabilities.

Access to Information or Library Services

Research question 4 had as its central trust, "how students with visual impairments could access library services. It focused on two themes; access to the physical library structure, and access to academic information in the library in the various accessible formats; braille, large fonts and electronic. The study revealed some important facts worth noting about the library.

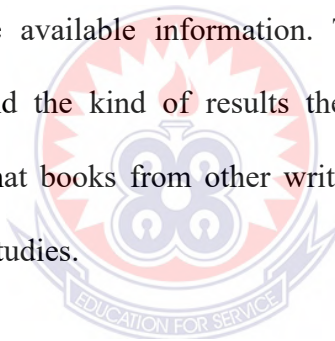
It is a right for students with disabilities to have equal access to public places, social life, school environment, political and economic life which includes not only physical access but also access to the same tools, services, organizations and facilities that we all pay for. It was too obvious from the responses of the students that the accessibility of the library and its facilities is almost 100% on a rating scale if not all. There was not one challenge about getting access to the library building and its facilities. These findings opposed that of Ekwelem (2013) who revealed in his study regarding accessibility to the library building and furniture that, there was lack of facilities such as adjustable table and keyboard tray, ramps, lift with disabled friendly features and automatic-opening doors for students with disabilities.

The findings of the current study are in consonance with Samson (2011) who found that the needs of students with disabilities were being met as students were able to physically access library facilities with little or no difficulties. Samson revealed in the study that all libraries had either been retrofitted to accommodate students with disabilities and new structures were being constructed according to universal design standards. In the effort of the libraries to meet the physical accessibility needs of students with disabilities, Samson found that the libraries had multiple entryways with ramps, elevators, adjustable computer tables, universal adjustable keyboards, accessible study desks, stand-up study or computer tables, adjustable seating and aisles for easy movement. According to the responses of the participants in the current study, the library and its facilities are very accessible. Students have no obstruction in the use of the library to enhance academic work. Their enthusiasm of the joy they have in the use of the library was unanimously endorsed by all of them.

Also, the study further considered students' access to converted information in braille, large font and electronic formats. The analysis of the students' views indicated that, the school had a well-established and very functional library for the visually impaired students. The library has a display of several books which are the text books prescribed for the use of all students.

The study proved that all course materials were put in braille format for students' consumption. Students with low vision did not benefit much from the library because there were no large print materials for them to lay hands on and read. They had to forcibly rely on the reading of braille materials. Furthermore, all students with visual impairments were privy to the use of electronic books which have been made available on all personal computers, desktop computers of the Resource Centre, students' pen drives, and also on their MP3 players respectively. Such a massive access to electronic contents makes reading and studying by students very easy. Even though students with low vision do not have the large fonts, yet with the availability of the electronic contents they have more than enough to read hence have no problem with access to academic information.

Analyzing the responses from the students, it was clear that they were positively being imparted so much by the available information. This reflected in their good semester academic performances and the kind of results they received. The respondents were so enthused and also asked that books from other writers be Brailled and kept on the library shelves to be accessed for studies.



CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary, conclusions and recommendations made on the findings from the study which explored the academic experiences of students with visual impairments at Mawuli School, Ho. In all, four research questions were raised from the objectives to guide the study. Interviews were conducted on 14 students with visual impairments. The data which was gathered from the interviews were analyzed using themes that arose from the responses of the respondents.

5.1 Summary of the Study:

The purpose of the study was to explore the academic experiences of students with visual impairments at Mawuli School, Ho in the Volta Region of Ghana.

Among the objectives of the study were academic experiences of learners with visual impairments in Mawuli School with reference to adaptation of teaching pedagogy and modification of the curricula content. The academic experience of students with visual impairments with regards to the provision of academic resources in the school. The responses of students with visual impairments to efficient academic assessment strategies designed for students with visual impairments in the school. And the reactions of students with visual impairments in light of access to academic information (library service).

The study employed census sampling technique with 14 participants as its sample size. Out of that, 13 were totally blind and 1 was low vision. Six (6) of them were in form three, three (3) in form two, and five (05) in form one. Also, 06 were girls while the rest of the 08 were boys.

The instrument used to gather data for the study was semi-structured interview.

5.2 Summary of Major Findings

Referring to research question one that focused on finding out the academic experiences of students with visual impairments in terms of teachers' adaptation of pedagogy and curricula content modification, it was evident from the analysis that the nature of academic interactions between the students and their teachers was satisfactorily commendable. Most of the teachers could handle their classes such that even the students with visual impairments could understand lessons very well. Student-centred and activity-oriented approaches such as exploratory, discussion, small group activities and question and answer methods were used. The teachers were strategic in their delivery and employed strategies like verbalization of instruction, and individualization of approach. These strategies made students with visual impairments feel at home and optimized performance.

The study further revealed that most teachers in Mawuli School have a great array of knowledge of content modification in their subject areas to suit students with visual impairment especially lessons that involved diagrams like pictures, charts, maps, and other drawings. They sometimes resorted to the use of real objects or realia which sharpened the exploratory skills of these students for understanding. Notwithstanding above, some few of the teachers were very much lacking and found it difficult to adjust to the trends of inclusive class teaching. Their methodology was inappropriate and they could also not modify their content well to suit the needs of these students.

With regards to research question two which focused on finding out about the provision of academic resources to aid the learning of the visually impaired students in Mawuli School, the findings revealed that the students were faced with massive challenge that served as a barrier to effective academic achievement. They unanimously lamented on the inadequacy of learning resources in general. They had Brailled material resources in excess of supply on their shelves in the library through the hard work of their own Resource Teachers. They also had enough electronic resources of all their course materials on their personal computers and

other external hard drives. Other learning materials such as Large Prints, Audio resources, Magnifiers, Optical and Non-optical resources, Maps, Reading Stands and Slits, Charts among others were not available in the school at all. The study revealed that there was no hardcopy material in the library for learners with low vision, they solely depended on information received from the classroom until recently when resource teachers did well to put all the available academic materials in soft copies (Electronic format) on their personal computers. Hitherto, all students with low vision were compelled to read Braille as their main source of learning. The phenomenon placed serious academic limitations on their learning.

The study further revealed the difficulty with availability and practice of assistive technology (High Tech equipment). It was found that the school had only two desktop computers at the Resource Centre for 14 students in forms one to three. The school also had devices such as braille embossment machine, and scanning machine. The printer is defunct, there was no photocopy machine, CCTV, Voice Recorders, and other needed devices needed to equip the Resource Centre well.

It was observed that only one out of the 14 population for the study had good computer skills. It was further established that though the school had two desktop computers and eight out of 14 students who formed the population of the study also had their personal laptops, yet the study of ICT and the use of ICTs was poor. On this matter, students blamed it on the lack of expert(s) /trained in the field of both ICT and Special Education who could teach them to better understand, acquire and to practice the needed skill.

Moreover, the analysis of the comments from the students revealed that, the two resource teachers were very efficient and supportive. They provided variety of academic support including, scanning of print documents and books to be used on students' personal computers that had screen readers, production of Brailled textbooks, embossment of other learning materials, transcription of students' braille works, and polishing of Braille skills of students among others. The analysis indicated that the supports provided were tailored towards the

needs of individual students. The participants really praised resource teachers for massive efforts they put in their academic work.

In addition, the study revealed that students were given extra time to complete class exercises, tests, and examination and teachers sometimes extended such opportunity to their sighted colleagues which they welcomed very much.

Research question three sought to find out the efficiency of academic assessment strategies designed for the students with visual impairment in Mawuli School. The study revealed that a range of assessment tools were used by teachers of Mawuli School to ascertain the academic performances of these learners. They include class exercises, assignments, group works, tests, and examinations. Specialized strategies like allowance of additional working time, diversification of academic assessment tools, provision of clues or explanation of test items as well as modification of test items.

Students were happy for the variety and wide range of tools being used to assess them but lamented over using group assignment to assess them because sighted students mostly did not involve them in group assignments for unnecessary sympathy and undue underrating of their competence.

Research question four had as its central trust, “how students with visual impairments could access academic information; library services. It focused on two themes; access to the physical library structure and its facilities, as well as access to academic information in the library. It was too obvious from the study that access to the library and its facilities was almost 100%. The analysis of the students’ views indicated that, the school had a well-established and very functional library for the visually impaired. Furthermore, a major challenge of the library is the absence of other related materials for referencing, story books, text books and other materials in large prints for the Low Vision. There is the need for computers installed in the Centre as part of the library which should also have all the academic materials for learning on them for electronic access of the books. The participants

were so enthused and also asked that books from other writers be Brailled and be made accessible on the library shelves for students' consumption.

5.2 Conclusion

This study focused on the academic experiences of students with visual impairments in Mawuli School, Ho. The researcher identified in the study that few of the teachers in the school will need support in the form of in-service-training in order to become abreast of time on inclusive class handling. This will help these teachers to conveniently modify contents of the curriculum and to adapt teaching pedagogies to suit the academic needs of students with visual impairments. The researcher found also that there was a massive problem with most forms of learning materials and gadgets except Brailled and electronic books. Low vision students over the years were somehow compelled to also use Braille due to the absence of large prints and other learning resource they needed. Making special reference to human resource, the study further revealed that the leaning of ICT by these students was a problem due to inadequate logistics as well as the unavailability of a competent/professional ICT teacher assigned the students with visual impairment. Meanwhile; the researcher was convinced with data gathered that, the resource teachers in the school were fantastic with their duty and have so far been very good in their job performance. In addition, the research revealed that, the assessment procedures in the school was good and supportive yet the handling of students' records has been a real challenge. The above phenomenon sometimes led to average performance of these students.

To finally conclude, it can be said that the academic experience of students with visual impairments in Mawuli School, Ho is at the level of the average achiever and needs intervention if an optimum benefit is to be derived.

5.3 Recommendations

In view of the findings, the researcher recommends the following:

- The Special Education Unit should collaborate with the Municipal Special Education Coordinator (SENCO) to provide a regular in-service-training for staff on how to modify content and adapt teaching strategies to suit students with visual impairments.
- The School Authority should support the Special Education Unit to produce hard-copy materials which will aid reading and the studies of the low vision who may be enrolling on the inclusive education program in Mawuli School from now on.
- The Special Education Unit in collaboration with School Management should write to the Special Education Headquarters for the supply of the needed computers, scanners, audio-recorders, and other materials that are lacking at the Centre.

5.4 Suggestions for Further Research

In relation to the study, the researcher suggested the following areas for further research:

- ❖ Need for a study that compares the academic experiences of students with visual impairments and their sighted colleagues in inclusive school in Ghana.
- ❖ The need to extend the population of the study to encompass sighted colleagues, teachers, assessment data handlers, and School Management.
- ❖ The need to compare the academic experiences of students with low vision and their total blind counterparts.

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APPENDIX 1

INTERVIEW GUIDE FOR STUDENTS WITH VISUAL IMPAIRMENTS

Academic experiences of students with visual impairments: adaptation of pedagogy and modification of content.

1. Describe your academic experiences of students with visual impairments in Mawuli School, Ho with reference to; adaptation of teaching pedagogy and modification of curricula content.

Probes:

- What comments do you have about the teaching process of your subject teachers?
 - When lessons involve use of objects and diagrams how do your teachers go about it for clarity and your understanding?
 - Which processes in the teaching facilitates understanding and learning better for you and how often do they use them?
2. What were your academic experiences with regards to provision of academic resources in the school?

Probes

- Learning materials such as tactile materials, large prints, optical and non-optical devices are used to enhance learning. How accessible are they in their appropriate quantities?
 - What comment do you have about the number of Resource Teachers in the school, and how do you value the efficiency of their support to your learning?
3. The responses of students with visual impairments to the modes of assessment of academic performance.

Probes:

- What is the response of your school regarding additional working time for students with visual impairments during tests and examinations?

- What kind of preferential treat do you receive during examinations?
 - Enumerate the various ways by which teachers assess your academic performances and indicate if you are satisfied with these approaches.
4. The reactions of students with visual impairments about access to academic information (library service); Access to library building and furniture as well as access to information in tactile, large prints, and electronic formats.

Probes:

- How accessible is the library building and furniture in your school?
- How accessible are information in the library accessible to you?
- How does the format of information at the school's library enhance your learning?



APPENDIX 2

TRANSCRIBED AND CODED FOCUS GROUP INTERVIEW

Research Question 1: How is the academic interaction between students with visual impairments and their teachers in Mawuli School?

- To answer this research question, the data collected in the interviews were used.
- Three sub themes that emerged from the data; verbalization of instruction, individualization of approach, and modification of curricular content were used for the analysis.

Verbalization of instruction

With reference to verbalization of instruction, the interview revealed that teachers of Mawuli School have been able to appreciably verbalize or vocalize their instruction in the teaching and learning process to suit the learning needs of students with visual impairments even though there was still more room for their improvement. Few others needed In-Service-Training in order to become abreast with appropriate inclusive classroom teaching. Students affirmed this assertion with the following comments:

The method the teachers used was okay with some of us. The majority of my teachers will first explain whatever they want to write on the board before doing so. This made us the visually impaired in the class to have idea or knowledge about what is going to be written on the board even though we cannot read it ourselves. (Verbatim expression by a participant in the focus group one)

Another student further deepened the concern;

The teachers usually dictate what they have written on the board through my constant reminders I provide to announce the presence of persons with visual impairments in the class. Though sometimes they forget us in a way, but when I draw their attention, they quickly respond and even go to the extent of apologizing

to us for the forgetfulness. (Verbatim expression by another participant in focus group one).

From the responses of the participants, it was evidently clear, that even though some teachers did very well in terms of verbalisation of instruction in the inclusive classroom, yet some others still lacked the understanding of handling an inclusive class. Their presentations were always veered to teaching in the general classroom in spite of the constant reminders provided them. More light was thrown on the subject by yet another student:

Some of our teachers write on the board throughout their lesson thinking we should also cope forgetting that they need to change their teaching method in the classroom to suit us all. (Verbatim expression by a participant in focus group two)

This student took the turn to also highlight the matter.

My French teacher always prefers to write on the board in spite of continuous reminders provided her about the presence of students with visual impairments in the class. (Verbatim expression by another participant in group one)

This student also had this to say:

Reading texts involving different characters were usually read by one and same person in the class. Reading lessons involving different characters must be acted out; that is, it must be read out by different learners to depict the very thing in the text book in order to enhance retention and recollection rather than one person reading out everything which ends in confusion. (Verbatim expression by another participant in group two)

It is obvious, that that some teachers have acquired the skill of effective verbalization of instruction needed in an inclusive classroom meanwhile some

others also lack this principle of teaching. More In-Service-Training is required to enhance their capacity in the job.

Individualisation of approach

The focused group interview sought to give much insight on the ability of teachers to individualize their approach to teaching to foster a better understanding of students with visual impairments. It was revealed that in the lesson delivery processes most teachers involved students in their lessons by making their lessons student-centred and discussion-based.

This student had this to say:

The teachers are good in terms of student involvement in class. Their performances in their lesson presentation could be awarded a least of 50% on any scale. (Verbatim expression by a participant in group two).

Another student had this to say:

Our teachers always made sure that we the students with visual impairments also talk during instructional period. By this, they would ask questions and seek our views on the question too. Some of them rather preferred we ask questions in the class during teaching and learning. This trend made us confident to always express our views in class. (Verbatim expression by a group two member)

This student also shared her view on the topic:

Sometimes, my teacher held my hand and helped me to explore objects and materials that are being used to facilitate understanding of certain concepts. By so doing I was able to better understand the lesson because it cleared the abstractions off my views through practice. (Verbatim expression by a participant; group one)

Modification of diagrammatic content

The focused group interview sought to illuminate the ability of teachers to modify the content of their lessons to the understanding of students with visual impairments. It was revealed that in the lesson delivery processes some teachers took their time to elaborate on or explain lessons that involved diagrams like pictures, charts, maps, and other drawings as well as real objects. This enhanced the conception for especially the visually impaired. In another disposition, some of the teachers rushed through lessons, forgot about detailing the students with visual impairments on diagrams, and handled the class like a mono-cultural class. This phenomenon deprived them from access to the indebt information and knowledge they need.

Some participants had the following evidences to give:

My government teacher was once teaching about the federal system of government and before drawing the governance structure on the board, he gave a detailed description and gave colleague students the opportunity to further explain the structure making it clearer for my understanding. (Verbatim explanation by a participant in group one).

Another respondent explicitly expressed his view below:

Our teachers are good in content modification especially in Integrated Science lessons which involved real materials and or diagrams. They explained the diagrams to us, made us to feel any material they used for instruction, and finally gave questions without diagrams for our assessments different from what they gave to our sighted colleagues. (Verbatim expression from a participant; group two)

A student said this:

My teachers will for instance bring toy cat to class for us to feel and to know what the real cat looked like. This helped me to better conceptualize and

concretize any form of abstraction in their lessons they presented. (Verbatim expression from a participant, group one)

Another student said this:

Sometimes our teachers especially the Integrated Science teacher always rushed through lessons with the reason that we are far behind time and he needed to speed up so that we could complete the set curriculum for the semester. They sometimes drew diagrams on the board, labelled the parts, and gave their functions without explaining it for us to also get the import of what has been drawn on the board. Owing to that he did not make time to explain lessons that contained diagrams to us. (Verbatim expression by another participant in group one)

Another student expressed his view on the topic as below:

Our teachers are ignorant about we the students with visual impairments; they don't have much knowledge about us therefore they do not know how to tailor their content to suit us without unnecessarily dragging the lesson behind. They sometimes ask questions or make comments that are rude on their part, offensive and unpardonable on our part yet we just have to ignore and pardon their ignorance and answer those questions anyway. (Verbatim expression of a participant in group two)

Research Question 2: What are the experiences of students with visual impairments on provision of academic resources used in the school?

To answer this research question, the interview data collected were used. Three themes were identified from interactions with the focused groups: provision of optical and non-optical devices, provision of High-tech equipment, and provision of Resource Teachers.

Provision of optical and non-optical devices:

On the provision of optical and non-optical learning resources, the expressions of the participants exposed a huge challenge that confronted them which served as impediment to effective academic achievement. They unanimously lamented on the inadequacy of learning resources in general. They indicated, that unlike Brailled materials which were in abundant supply on the shelves in the library, other learning materials such as Optical and non-optical resources among others were not available in the school at all.

A student had this to say and was being endorsed by all other participants:

We have tactile or Brailled learning materials in excessively abundant quantities which has always helped our learning but the greatest challenge we have had is with all other learning resources. We do not have them at all, not to talk of their adequacy. (Verbatim expression of a participant in group two)

Another student said this:

We do not have tools like magnifying lenses in the school to help us the students with low vision to be able to do effective reading of print materials. This has made Braille a compulsory mode of reading to both the low vision and the blind in the school even though we prefer to also use print more often. (Verbatim expression of a participant from group one).

Again, this respondent had this to say:

My reading lenses are not helping me because it is old. I prefer to have a magnifier in the school to help me read but the school does not have it so I am compelled to read Braille just like the blind students do even though I am partially sighted. . (Verbatim expression of a participant from group one).

Furthermore, another respondent lamented as below:

We the students with visual impairments are two separate categories; the low vision and the totally blind. In Mawuli School, special preference has been given

to the blind over the low vision. This is because all the reading materials we have in our library are in Braille without a single book in large font print for the low vision. Somehow, I see that the low vision students in the school have but less priority. Large print of all our academic materials should be made available on the library shelves as well. This will enhance our reading capabilities for better performance. (Verbatim expression of a participant from group two).

Availability and efficiency of Resource Teachers

The issue of resource teachers and their efficiency generated diverse opinions of expressions from the participants. Participants had different stories to share about the availability, adequacy, and efficiency of Resources Teachers in the school. They maintained, that even though material resources may not be enough, Resource Teachers have really done so well by brailleing textbooks in almost all textbooks and literature materials to enhance their learning. This, they said has put them on top of their colleagues in other inclusive schools since all other inclusive schools do not even have the brailled materials for study according to their friends. On the contrary, other students were of the view that the Resource Teachers should do more than they are doing now since sometimes transcription of their works delay with them. Additionally, when some of the respondents had the view that Resource Teachers in Mawuli School is not enough to face the available workload, others said the two resource teachers they have is enough to handle 16 students with visual impairments present in the school. A participant declared this:

I want to commend our Resource Teachers for their unstinting efforts in the preparation of enough brailled textbooks for us. We are better off than our other colleagues in the other inclusive schools in the entire country since they always complain of not even haven textbooks in their schools. (Verbatim expression by a participant from group one)

Another student vocalized his opinion as below:

We also have all the textbooks and literature materials in soft copy made available by our Resource Teachers on our laptops for studies. This has made learning easy for us since the materials are always available to us at the stretch of our hands. This electronic mode of learning facilitates learning for us better.

(Verbatim expression of another participant in group two)

It is obvious, that there were mixed feelings and opinions from students with regards to the availability and adequacy of material resource resources for learning. Students who do not offer Elective French were so happy with the availability and adequacy of textbooks in both Brailled and electronic forms. On the other hand, the French students also lamented about the absence of their learning materials for French as a subject and that the situation is seriously ‘casting shadow’ on effective learning. They had textbooks in all other subjects in Brailled and electronic formats except French.

Students had these to say on the above topic:

The number of Resource Teachers we have is not enough, they are only two yet the demand of their works is so much. We need additional ones to beef-up the existing numbers in order to ease their pressure. (Verbatim expression by a participant; group two)

Another student said this:

The number of Resource Teachers is woefully inadequate. The workload they have is so high that they don't have any time of rest especially during time of examination. The two of them had to braille exam questions, conduct the exam, and do transcription of our scripts concomitantly. This oftentimes makes them suffer divided attention and also lose focus on one or two of the 3 activities that they always ran concurrently. Most often than not, they carried our brailled exam scripts to the house and transcribed all over the night in order to present them on time to the various subject teachers for marking and assessment. Additional

Resource Teachers are needed. (Verbatim expression by a participant in group one)

This student also had this to say:

Our Resource Teachers are good and they always did their best in spite the difficulty they go through to make sure we are being served well. I suggest one more is added to them in order to relieve their stress levels a bit and to also enhance their work. (Verbatim expression by one of the respondents)

Another student with view contrary to those above said this:

In my opinion, the number of Resource Teachers in the school is okay. Comparing the number of students with visual impairments (16) with the staff strength of the Unit (2), I believe we do not need any additional ones now. Instead, they should step-up their working spirit in order to meet their job demands at the Centre.

(Verbatim expression by a participant in group one)

There was yet a third view from one of the students about the number and efficiency of Resource Teachers as expressed below:

I think the number of our Resource Teachers Vis Avis the number of students they are presently handling is okay for them and because of that they are very up to date on their task delivery. They brailled any learning material we needed for enhancement of learning, and always transcribed our scripts on time. We have been speaking to some of our friends in other schools and they do tell us that sometimes they work and for a long time their scripts would not be transcribed and other times these scripts even got lost. Our Resource Teachers go the extra mile to submit some of our works to our various subject teachers on our behalf. In fact, they are really doing so well. (Verbatim expression by still another participant; group one)

This is another submission made by another respondent:

The effectiveness of our Resource Teachers is really good and when it comes to their number, though I see it to be okay because they deliver on time and we are always being served to our admiration, I think they themselves are in the best position to tell whether they need additional hand or not. This is because they know the level of pressure they had to bear in discharging their duties. (Verbatim expression by a participant; group two)

From the submissions above, it was evidently clear that almost all of the students really appreciated the efforts of their Resource Teachers. The students gave these commendations based on the facts that these teachers always demonstrated selfless devotion in rendering their services. They were always on time in all their activities regardless of the challenges thereof in their ways. They were always ready to do the extra in order to satisfy the work demands of their students. Furthermore, their operations were student centered, leaving no stone unturned in the best interest of their clients; the students.

Secondly, concerning the number of Resource Teachers in the school, the students expressed mixed feelings about it. Even as some were of the view that it is okay as compared to the number of students with visual impairments present in the school at the moment, others had it differently that the number is inadequate and needed to be beefed-up. This they said making special reference to the volume of workload that the only two teachers available had to bear.

Provision of High-tech equipment

Furthermore, the responses of these participants unearthed the fact that students with visual impairments in Mawuli School, Ho lack learning materials such as Computers, Audio-Visual aids, Close Circuit Television among others. This menace is hampering on effective academic work.

A participant had this to say:

Learning of ICT is really difficult for us because we have only 2 desktop computers in our resource Centre for the 16 of us which is creating a lot of

academic barriers for us. We will need additional computers so that the teaching and learning of ICT can be enhanced. (Verbatim expression by a participant in group two)

Another student had this to say:

Because we have only two desktop computers, anytime there is ICT class, about four or more students used one computer at a time. This has resulted in poor practice of new concept and makes it difficult to grasp the information or new skill being learnt. (Verbatim expression of a participant; group one)

Research Question 3: How efficient are academic assessment strategies designed for students with visual impairments in the School?

To answer this research question, the interview data collected were used. Four themes emerged out of the interactions with the focus groups: Teachers' response to the issue of additional working time for students with visual impairments, variation or diversification of academic assessment tools, reduction and modification of test items, and provision of clues/explanation of test items.

Teachers' response to the issue of additional working time for students with visual impairments

This sub-theme is to find out and deepen knowledge on the school's understanding and cooperation with the students with visual impairments in terms of adaptation of time management to suite their speed capabilities.

One student had this to say:

Mawuli School has always responded positively to our need of extra working time during class exercises, tests, and examinations. For example, if our sighted colleagues use 3 hours in an examination, we are given additional 1 hour 30 minutes making it 4 hours 30 minutes in all for that particular examination. That represent 50% extra time of the actual working time being awarded us to enable

us comfortably finish with the work. (Verbatim expression by a participant in group two)

Another participant had this to say:

Our teachers always gave us extra time to finish with our class exercises. Sometimes the extra time allowed us is given as favor to even our sighted colleagues which they also occasionally enjoy because of us. (Verbatim expression by another participant in group one)

Another student also said this:

Sometimes, our teachers tested in order to both observe and to help improve our writing speed. These times, they gave the whole class work to finish at the same time. But the good thing about it was that if we the impaired students were unable to meet the time lines and we request for the additional time, the teachers obliged. (Verbatim expression by yet another group one member)

Participants' responses on this sub-theme was skewed to expose and establish the kind of treatment students with visual impairments received in times of their examinations by their invigilators; whether they are being allowed to enjoy the needed extra time or not.

This student had this to say;

Our invigilators give us stern invigilation, in the sense that when it is time, it is time; they do not allow us to continue once time is due. (Verbatim expression by a participant in group two)

Another student had a different view of the issue, and it goes this way:

Even though my friend may be true but I see leniency on the part of our invigilators. They are not too strict like the way they invigilate our sighted colleagues. My teacher once said, 'we all want you to pass and go to where people have been going, without them looking down upon you', he added.

(Verbatim expression by another participant in group two)

This student also viewed the discussion in a different view. She was of the view that their invigilators have never been strict or liberal. The invigilators just followed the laid down practices of examination and ensured students did the right thing. In this case, students were punished when the law caught up with them.

(Verbatim expression by a respondent I group two)

There was a sharp objection to the immediate response above by another participant as below:

I disagree with you! When has it ever happened in this Resource Centre that students are sent out for misconduct in exams? Examination and invigilation have been so lenient and liberal without any tension on us. (Verbatim expression by a participant in group two)

Additionally, a student had something else to say:

We always enjoyed extra or additional working time unlike our sighted friends. This helped us to be able to work within our pace without rushing. (Verbatim expression by a participant in group one)

Furthermore, another student gave his view below:

Our invigilators had also been very patient with us anytime we wrote examination. This friendly atmosphere helped us to concentrate on our work until we finished writing within the allowable time frame. (Verbatim expression by a participant in group two)

Moreover, this student also said this:

Whenever there was a misunderstanding or confusion about any of our test items, the invigilators read out the particular question again for clarity and the time used is still factored in for our convenience. (Verbatim expression by one of the participants)

From the expressions of the participants above, it is very clear that both Management and teachers of Mawuli School, Ho have a good orientation which has aided them to understand that students with visual impairments need additional time to respond to test items. Therefore, during times for class exercise, tests, and examinations 50% of the original time is given as extra working time for these students with visual impairments.

Still on this point, considering the views of the participants, it was realized that few students were of the view that their examinations were met with strict and inconsiderate attention by invigilators with regards to use of time. Another person declared that, it was neither strict nor liberal; it was just a normal examination without any special consideration. Majority of the participants were affirmative in their viewpoint. They mentioned that, examinations had been met with lots of considerations which the sighted colleagues never enjoyed. These special treats included the enjoyment of additional working time, modification of test item when necessary, liberal invigilation among others. These they concluded, aided their academic achievement.

Variation or diversification of academic assessment tools:

This sub-heading sought to find out the various modes of assessment that students were exposed to during their course of study. It further focused on how favorable these different modes of assessment were to them.

This student who was a member of group one expounded on the theme below:

Some of the ways by which we were assessed were class exercise, assignments, and tests. I was comfortable with the way they were being conducted. They were always friendly; in that teachers always considered the plight of students with visual impairments anytime they worked on assessment tools.

Another student who was a member of group two had this to say:

Examination is one of the several modes of assessment but personally, I am not happy with it at all. This is because it was clear on my result slip that my Ewe

teacher did not use the continuous assessment score but only used the exam score.

I was not pleased about such a serious denial at all.

This student also said this:

It appears to me that some of our teachers assess us by cooked marks and these marks do not really reflect our true performances. It is as if they do not make use of our continuous assessment score at all. The reasons are that I do not offer Mathematics yet when I went and printed my results, I had A1 in Mathematics. Also, I do better in class exercises, assignments, tests and exams than some sighted students yet at the end of exams their grades were better than mine. That is really disheartening and need to be reexamined critically. (Verbatim expression by yet another participant in group one)

Still on the point, a respondent commented this way:

I think the problems we have with our examination scores originates from the Records Room. This may be because the students are so many yet teachers are expected to finish imputing their scores within a short period of time. Teachers can decide to put in just anything for the students once they are pressed of time. I suggest that our Resource Teachers should do an intensive supervision of the entries of our scores by the various subject teachers in order to make sure the right thing has been done for us students with visual impairments. (Verbatim expression by a group one member)

Again, this student

We are usually assed by class exercises and tests and I do not have any problems with it because the teachers are doing well with them. (Verbatim expression by a participant; group two)

Furthermore, this student also gave his side of the matter:

As for me, I have problem with group assignments. When group assignments are given our sighted friends usually do it alone without involving us. Sometimes they think they do not want to bother us or they thought they could do it on our behalf. When it happened so, we found ourselves wanting during time of presentation in the classroom because the teachers were not aware of those who did the work so they called anyone at random which sometimes brought disgrace to us before the class because we were unable to present well. Another problem in joining the group work has mostly been with getting a uniform time to do the work.

(Verbatim expression by a student in group 1)

On same point, this student mentioned this:

Sometimes the reluctance of some group members to participate in group assignments also limited the scope and quality of work. When this happened the entire group's members had low marks which did not actually measure their individual performances.

(Verbatim Expression by a participant)

From the responses of the participants, some critical concerns were raised which needed attention in order to ensure smooth assessment of students' academic work. It came to light that a range of assessment tools were used by teachers of Mawuli School to ascertain the academic performances of these learners. They include class exercises, assignments, group works, tests, and examinations. Students were happy for the variety and wide range of tools being used to assess them. That notwithstanding, the students with visual impairments had serious concerns against the use of 'Group Assignments'. According to some of them, when group assignments were given, they found it difficult to participate and contribute to it for the following reasons:

Unnecessary sympathy: the sighted colleague group members thought it is a worry to disturb them the students with visual impairments at those times they met to solve the problems. They

therefore decided to meet all alone to do the work neglecting them and also making waste the rich inputs they would have made if they were to be part of the work. Sometimes, their groups scored less because only a few people met to do the work which led to narrowing their responses to the problem. Other times too, teachers thought the students with visual impairments are lazy that is why they did not participate in the group work, especially when anyone of them is called to do presentation on behalf of their groups and they are unable to do it well.

Underrating of competences: it did also happen, that the sighted students high-jacked group assignments and did it all alone because they thought the students with visual impairments did not have any good input to make to the success of the group work. By this, they both denied the neglected students and the entire group of knowledge, skills, attitudes and values as well as some competencies they would have benefited the whole group should they have met in totality.

Reduction and modification of test items:

This sub theme sought to unearth the strategic move of teachers of Mawuli School in trying to do a better assessment of work of students with visual impairments. The focused group interview revealed the following vitals facts:

A participant said this:

Our teachers have always done so well by ensuring that they change test items or exam questions that have diagrams and also those that have calculations in them to suit we the students with visual impairments. This phenomenon has always made it possible for us to be able to attempt and respond to those questions without any much difficulty. (Verbatim expression by one of the participants in group two)

Another participant had this to say:

Mawuli School teachers are good; they sometimes replace any question that has a diagram with a similar question but without a diagram so that we the students with visual impairments can also respond to those questions. The strategy helps to make those questions clearer to us. (Verbatim expression of one of the participants; group one).

Another participant continued to share his view on the issue:

Mostly, our teachers did not give us less work as compared to our sighted colleagues because of our disability. They considered that we both could handle equal tasks and that reducing the quantum of our tasks may mean discrimination or underrating of our ability. (Verbatim expression by another participant; group two)

Another participant disclosed; this:

My teacher once said in class that school-based exams were to prepare us for the West African Secondary School Certificate Examination (WASSCE). Therefore, every student irrespective of disability must be given tasks that commensurate with the WASSCE as a way of adequate preparation. So, she always gave the whole class equal amount of assignments, tests, even examinations. (Verbatim expression by a participant from group one).

The study consequently revealed that, teachers of Mawuli School did very well in modification of test items for students with visual impairments to suit their conditions. Diagrammatic questions either saw alteration or were completely replaced with similar order of question for the sake of the student with visual impairment. Furthermore, it was also obvious, that teachers never reduced the quantum of assessment tasks given to students with visual impairment due to their disability, instead they were equipped the hard way for the sake of preparation towards their final examinations.

Provision of clues/ explanation of test items.

This sub theme was to help in finding out which efforts teachers make in making sure that students with visual impairments well understood test items before attempting to answer them. The study revealed the following concerns from students.

A student explicated this which was unanimously endorsed by all other participants:

It has always been said that, 'understanding of the question is part of the examination', yet the case was different with students with visual impairments in Mawuli School. As a way of giving clue to us in order to be able to handle difficult questions, our teachers often explained those questions to us for better understanding. This strategy has always given us the opportunity over our sighted colleagues since questions are not being explained to them. It made us to approach exam questions appropriately without deviating most at times.

(Verbatim expression by a participant)

This theme revealed that the students enjoyed extra time in any assessment activity that took place in the school. Also, students with visual impairments in Mawuli School benefited from variation or diversification of academic assessment tools. Furthermore, it was revealed that these students never had access to reduced test items but modified test items. And finally, the students with visual impairments enjoyed provision of clues through explanation of test items as a way of assisting them to understand test items and to answer them very well.

Question 4: How do students with visual impairments access academic information in the School?

To answer this research question, the interview data collected were used. Three themes stood out from interactions with the focus groups: access to library building and furniture, conversion of print materials into accessible formats for students with visual impairments, and installation of electronic application software (JAWS) for electronic learning.

Access to library buildings and furniture:

Per this sub-theme, the research sought to identify how accessible the school's library building as well as its facilities like furniture was to the students with visual impairment. On this, all the participants unanimously said this:

We have a fine and a well- organized library specially and solely made for the students with visual impairments in Mawuli School. This library is created right inside our Resource Centre different from the school's main library which is situated far away in the school's administration block. The library's building and its furniture are very accessible, easy and comfortable to use by every student, whether with disability or not. The room is also arranged in such a way that created convenience and gave easy access for all students to access all the materials that were in thereof.

(Unanimous expression by the all participants).

Other participants also had this to say:

The library is sited inside the Resource Centre where we always stayed (over 16 hours every day), so the library is rather sitting in our home. The library is centrally located in our Resource Centre so it made it easy for everyone to locate it from every direction in the room. (Unanimous view by all group members)

It was too obvious from the responses of the participants that the accessibility of the library and its facilities was almost if not 100% on a rating scale. There was not one challenge about getting access to the library building and its facilities.

Conversion of print materials into accessible formats for students with visual impairments

This sub theme was focused on identifying the usefulness of the modes of lettering for students with visual impairments with reference to access to information in their library. This sub theme seeks to find out the various ways in which print textbooks are converted into for

the consumption of students with visual impairments. The study considered Braille, Large Prints, and Electronic mode.

Conversion into Braille format

A participant had this to elucidate:

Our Resource Teachers have done an extremely commendable job in converting the available curriculum materials in the form of text books and literature materials into Braille for us. This puts us above our companions in other inclusive schools in the entire country because anytime we spoke with anyone of them, they lamented about the difficulty of access to academic materials in Braille. Kudos, to our Resource Teachers. (Verbatim expression, participant, group one)

Affirmation from another participant:

Even our own predecessors here in Mawuli School made us aware that we are so privileged that in our time reading materials are available in their numbers for us in Braille; something that they did not experience in the life of the school during their days. They credited the good works to the effort of their resource teachers. (Verbatim expression by another participants, group two)

Another student added this:

The information received from the library has actually been helpful to us since it reflects the very things we learn in the classroom. We are really advantaged because we cannot have Brailled textbooks to buy in the market but we have them here on our library shelves. We really appreciate the impact it is having on us. (Verbatim expression by a participant, group one).

Conversion into Large print format

With reference to large fonts, there was a general lamentation especially by the student with low vision. The signals gathered by the study indicated that most attention has been placed on

the use of braille at the expense of large fonts. This phenomena has imposed on even the low vision to also use braille though they can read print.

The participants unanimously had this to say:

Not all of us are totally blind to use braille. Some of us can see to some extent and would prefer to read print than to read braille but unfortunately all the materials in the library is in braille. We are therefore compelled to read the braille. We suggest that all effort should be made to prepare all the brailled materials in large font for we the low vision to enhance our studies. (Verbatim expression by the participants, group one)

Conversion into electronic format

This sub theme also focused on finding if learning materials were converted into electronic media for easy access by students with visual impairments. At this instance too, resource teachers were applauded for ensuring that all the academic materials being used by students were put in electronic mode.

Participants had this to say:

Our resource teachers have done so well in this regard too. All the academic materials we use in the school are put in soft copies on our personal laptop computers, the office desktop computers, Mp3 players, and even on our pen drives. This effort is worth commending, we pray God's blessings for them.

(Verbatim expression by participants unanimously).

From the responses above, it was evidently clear that out of the three modes of information accessibility by the students, two were effectively utilized in Mawuli School (braille, and electronic) except large font for the low vision which was not available.

Installation of electronic application software (JAWS) for electronic learning.

This sub theme concerned itself with finding out if students with visual impairments have access to the use of application software for the blind such as JAWS which aids their electronic reading activities. The study revealed an affirmative response, indicating that students have access to facilities that help them to do screen reading.

A participant had this to say: our resource teachers helped us to install screen-reading software on our personal computers which we use to read the soft copy of textbooks we have on our laptop computers. By using this application software, we are able to comfortably read at convenience. (Verbatim expression by a participant, group two)

