

**THE VALUE OF VISUAL ART IN DEAF EDUCATION-INVESTIGATING
VISUAL TEACHING IN SOME SCHOOLS FOR THE DEAF**

BY

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(BA PUBLISHING STUDIES)**

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DECLARATION

I hereby declare that this submission is my own work towards the MPhil degree and that to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the university, except where due acknowledgement has been made in the text.

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ABSTRACT

Students who are deaf typically lack the language of the hearing world. Their hearing handicap presents serious academic challenges that require visual teaching. It is not clear whether visual teaching is practised in the various Schools for the Deaf hence the need to ascertain through research, the present teaching and learning challenges facing the deaf, the practice of visual teaching in Schools for the Deaf and then to suggest how certain visual tools can be used effectively to facilitate visual teaching in Schools for the Deaf. The qualitative research method with a focus on the descriptive cum multiple case study approaches was used for the study. The selected schools for the study included State School for the Deaf at Adjei-Kojo near Ashaiman; Demonstration School for the Deaf at Akuapem Mampong; Senior High/Technical School for the Deaf at Akuapem Mampong; Sekondi School for the Deaf at Inchaban, and Ashanti School for the Deaf at Jamasi. Purposive sampling technique was used to get the accessible population and a three-tier research strategy involving observation, in-depth interview and focus group discussion was used to gather data for the study. The researcher was literate in Sign Language. The findings of the research were that: the teaching and learning techniques employed in the Schools for the Deaf are the same traditional methods used in regular schools and this poses a number of challenges. Although the teachers were aware of the visual teaching needs of the deaf, they did not adequately practise visual teaching in a way that meets the academic needs of the deaf. Presently, there is the need to adapt and modify traditional methods of teaching to promote quality, purposeful and appropriate education for the deaf. Visual teaching should, as a matter of expediency, be the focal point of every education formulated for the deaf.

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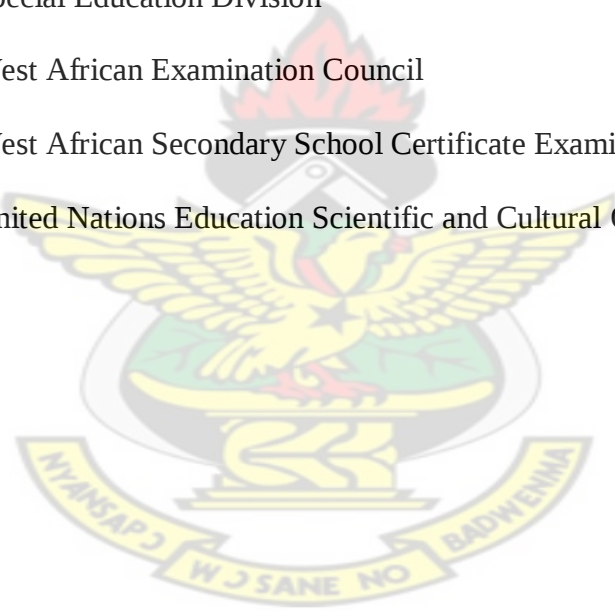
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LIST OF ABBREVIATIONS/ACRONYMS

dB	a unit of relative loudness of sound
JHS	Junior High School
SHS	Senior High School
BECE	Basic Education Certificate Examination
CRDD	Curriculum Research and Development Division
GES	Ghana Education Service
MOE	Ministry of Education
SPED	Special Education Division
WAEC	West African Examination Council
WASSCE	West African Secondary School Certificate Examination
UNESCO	United Nations Education Scientific and Cultural Organization



CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter discusses the background to the study, the statement of the problem, the objectives and the importance of the study and terms that were used in the report.

1.2 Background to the Study

Throughout the centuries, deaf people have been viewed as incomplete humans because of their inability to hear and to speak. Owing to their hearing impairment, it became accepted that since speech and language were closely linked together, those who could not hear were unteachable. This pronouncement on the deaf cursed their education for many decades until the sixteenth century, during the time of the Renaissance, that Girolamo Cardano, an Italian physician, proclaimed that the deaf could hear by reading and also speak by writing (Schein, 1984).

Around 1815, a group of men in Hartford, Connecticut in United States of America became interested in deaf education but lacked the needed information on the proper means of educating them. Dr. Thomas Hopkins Gallaudet, a graduate of Yale University was as a result sent to England to investigate methods then used to establish a school for the deaf. After several months of training, Dr. Gallaudet came back to America with a young deaf instructor from the French School. Together, they established a school for the deaf that made it possible for deaf people to have formal education in the United States of America.

In Ghana, it was not until the middle of the 20th Century, as Nelson and Loncke (1993) explain, that the education of the deaf was realized. Even at that time, only extremely limited opportunities existed for deaf individuals. In 1957, one African American, Dr. Andrew J. Foster, through his missionary activities, established foundation Schools for the Deaf in Ghana. The education of the deaf at that time was mainly for religious fortification though it was supplemented with vocational and trade skills. Today, about 20,000 deaf individuals in Ghana access a formal form of education (Asare, 2009).

Today, formal education for the deaf is fast becoming increasingly characterized with visual teaching strategies (Easterbrooks and Stoner, 2006) and available literatures have addressed several aspect of this collaboration. Arts education which provides the bases for visual teaching has become a vehicle to educating special children. For example, in 2005 the Australian Government commissioned the *National Review of Visual Education (NRVE)* which stressed the importance of visual art education for both regular and special students. In commissioning this review it was stated that

Arts education offers rich and complex learning opportunities and powerful developmental experiences for young people by fostering cognitive, social and personal competencies for lifelong learning and fulfilment. Arts education develops innovative and creative minds equipped for the knowledge of society and also provides meaningful connections and social experiences for disadvantaged or ‘at-risk’ students (Dinham, Wright, Pascoe, and Maccallum, 2007 p. 2).

Although some researchers have paid attention to general areas of education for the deaf (Yekple, Offei, and Acheampong, 2011; Avoke, 1997; Oppong, 2003), there is yet relatively little research on how visual teaching is practised in Schools for the Deaf even though its importance is well documented in deaf education (Easterbrooks and Stoner,

2006). There is every indication that visual teaching can be a vehicle to educating disabled children including the deaf. The use of visuals in classroom teaching fosters cognitive development, aids academic development (Eubanks, 2011) and strengthens memory (Smith, 1995). It is generally believed that any education which does not include art is incomplete (Schulz and Turnbull, 1984). Essentially, this study responds to the call for a new thinking about deaf education, as an interdisciplinary field which merges with art education to provide quality education for the deaf.

1.3 Statement of Problem

Existing literature prove that deaf students are visual learners. They often lack language of the hearing world and have limited vocabulary and limited mastery of sentence structure (Easterbrooks and Stoner, 2006). This linguistic limitation importantly requires strict reliance on visuals teaching strategies. However, there is no indication that visual teaching is practised in Schools for the Deaf hence the need to investigate the practice of visual teaching in some Schools for the Deaf. This study is preoccupied with the facilities instituted in the various Schools for the Deaf in Ghana to meet the visual educational needs of the deaf. The basis is that deaf people's hearing disability is not an inability to attain quality formal education; with the right educational strategies for the deaf which includes visual teaching, some of their learning challenges could be compensated for. It is therefore in place that the study investigates the practice of visual teaching as a strategy for educating the deaf.

1.4 Objectives

1. To ascertain the current teaching and learning challenges of the deaf.
2. To investigate the practice of visual teaching in Schools for the Deaf in Ghana.
3. To suggest how certain visual tools can be used effectively and efficiently to facilitate visual teaching of the deaf.

1.5 Research Questions

1. What are some of the teaching and learning challenges of the deaf?
2. To what extent do teachers of the deaf practise visual teaching; how do they do that?
3. How can certain visual tools be used effectively and efficiently to facilitate visual teaching?

1.6 Delimitation

The study focused on the use of visual tools and the practice of visual teaching in classroom education of the deaf. It concentrated on identifying the academic challenges of deaf students, investigating how visual teaching is practised in the various Schools for the Deaf and suggesting how some visual tools could be used effectively and efficiently to facilitate teaching and learning in the various Schools for the Deaf. The use of visual tools such as pictures and illustrations was probed into and inquired if these were used in the classrooms of the selected Schools for the Deaf. The research was carried out in five major Schools for the Deaf across the country- all from both the basic and secondary

levels. Thorough investigation was conducted in these selected schools from the Greater Accra, Eastern, Ashanti and Western Regions.

1.7 Limitations

The study was not without certain limitations. Getting the needed information for this research was quite frustrating; some of the respondents were not informative. Literature on deaf education was also very difficult to find. Few authors who have written on deaf education have focused attention on the concept of deafness in general. Even in such situations, documents on deaf education in Ghana were very hard to acquire and so the completion of the chapter two of this research was delayed. There is also a lot of apathy about deaf education and so many people are not aware of the problems deaf people face in their education. As a result of that there is very little interest generally about the deaf which limited the help and support the study needed.

1.8 Definition of Terms

- Deafness

A degree of hearing impairment sufficient to prevent the learning of language through the auditory channel.

- Visual teaching

A teaching pedagogy that fully incorporates visual tools in teaching. Everything taught in the classroom is through visual means.

- Visual learning

Acquiring and communicating information through illustrations, photos, diagrams, graphs, symbols, icons, and other illustrations.

- Visual literacy

The ability to discriminate and interpret visual actions, objects, symbols, and other images while gaining meaning from them.

- Visual aids

Visual instructional materials which are used as a complement to a lesson presentation. Examples include charts, pictures, diagrams, movies etc.

- Visuals

Illustrative materials such as a photograph, picture, chart, or graph that displays information in a way that appeals to the eye.

- Visual tools

Visual materials which serve as means to achieving visual teaching.

1.9 Importance of the Study

The foremost importance of this study is to create awareness and add to the growing body of literature on visual teaching of the deaf. In investigating the practice of visual teaching in Schools for the Deaf, the study establishes the uses and importance of visual art in deaf education. This gives art teachers opportunities to conduct further research into the value of visual art in the education of the deaf.

Currently, there are many challenges facing deaf education in Ghana which may not be known to educationists and stakeholders of deaf education in general. The research

provides an analytical perspective for understanding some of the challenges of deaf education and some of the solutions to such difficulties by way of incorporating visuals in their teaching.

This study can also help to diversify teaching and learning approaches used by teachers on students in Schools for the Deaf through exposure to the knowledge of the use of integrated material and techniques that can equip the average teacher of the deaf with visual teaching approaches to meet the academic needs of the deaf. The study will motivate teachers to use visual tools such as illustrations, pictures and diagrams effectively and efficiently.

The study also serves as a useful reference material for educational stakeholders, policy makers, government, and non-governmental agencies as well as world bodies such as UNESCO on the state of visual teaching in Schools for the Deaf in Ghana. The importance of this study lies in the ability to synthesize an aspect of art education into that of special education to create awareness that hitherto, did not exist.

1.10 Organisation of the Text

This first chapter gives a background to the study; it discusses the statement of the problem and objectives of the study, definition of terms and importance of the study. Chapter two deals with the review of literature related to the topic. The third chapter describes the methodology used in gathering the data. The analysis of the field work including major findings from the study are presented and discussed in chapter four. Chapter five concludes the research by summarizing, concluding, and making recommendations based on the findings.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Overview

This chapter covers review of theories and empirical studies on the use of visuals in the education of the deaf and other related works on their educational needs. The review underscores the importance of visual arts and visual teaching in meeting the learning needs of the deaf. It ascertains that even though the importance of the use of visuals in deaf education is well established, not much documentation has been done on the actual practice of visual teaching.

2.2 Concept of Hearing Impairment

Hearing impairment is a broad term that covers individuals with impairments ranging from mild to profound deafness, and includes those who are deaf and hard of hearing. By definition, Schulz and Turnbull (1984) define deafness as a “hearing impairment which is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification which adversely affects educational performance” (p.32). Citing the definition proposed by the White House Conference on Child Health and Protection (1931) in America, Telford and Sawrey (1977) define deaf as (1) those persons who are born with sufficient hearing loss to prevent the spontaneous acquisition of speech; (2) those who became deaf before language and speech are established; and (3) those who became deaf soon after speech and language were acquired that these skills have been practically lost.

Brill, MacNeil and Newman (1986, p. 67) as cited in Yekple, Offei, and Acheampong (2011) define deaf as “one whose hearing disability precludes successful processing of linguistic information through audition with or without a hearing aid”. For the purpose of this study, “deaf” is defined to include both deaf and the hard of hearing. In scientific or medical terms, deafness generally refers to a physical condition characterized by lack of sensitivity to sound. Deductions made from the various definitions establish that deafness is the audiological experience of someone partially or wholly lacking hearing

2.3 Causes of Deafness

Birch (1975) as cited in Schulz and Turnbull (1984) opines that deafness is an extremely complex phenomenon and therefore to explain its influence on a person’s development, the causes of deafness should be well understood. The two types of hearing loss are *conductive* and *sensorineural* hearing loss (Schulz and Turnbull, 1984; Turnbull, Turnbull III, Shank and Leal, 1995; Avoke, 1997; and Yekple et al., 2011).

Outlining how an individual hears to explain these types of hearing loss, Turnbull et al. (1995) teach that the ear consists of three parts: the outer, middle and inner ear as shown in Plate 2.1. Sound goes into the outer ear, is changed to electrical impulses in the middle ear and is transmitted to the hearing center of the brain. For proper hearing to occur and to be effective, the outer ear (working as a radio receiver), the middle ear (working as a transmitter) and the inner ear (working as the microphone) must all work efficiently. According to them, hearing loss occurs when some part of the outer, inner or the middle ear is not functioning properly.

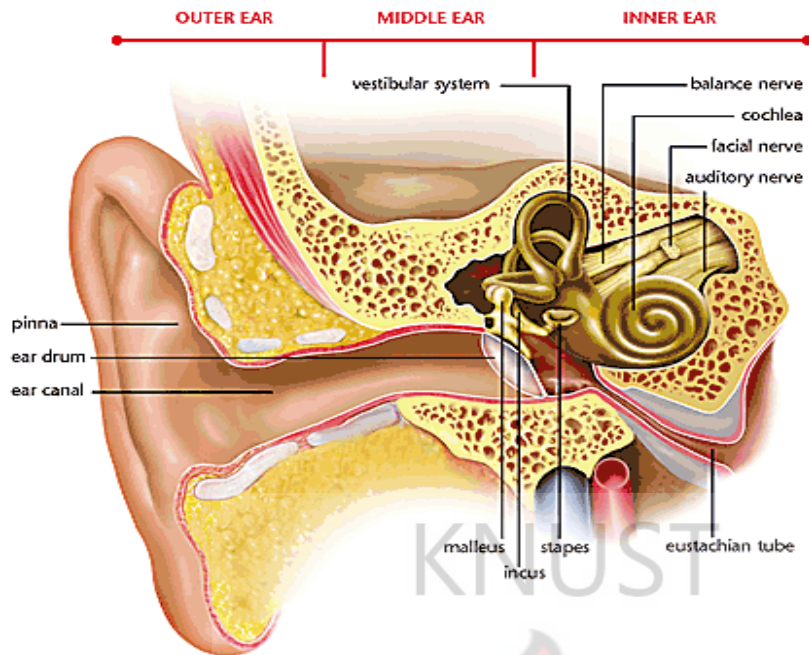


Plate 2.1 Anatomy of the Ear

Classifying this phenomenon into the causes of hearing loss, Turnbull et al. (1995) have identified that any problem of the outer or middle ear when the inner ear is unaffected is called a *conductive hearing loss*. They further explain that the conductive hearing loss is caused by sound conduction and that when fluid collects behind the eardrum in the middle ear and it becomes infected, the result is an ear infection ensuing in conductive hearing loss. Conductive hearing loss occurs when the outer ear and or the middle ear is broken. In this case, sound is prevented from reaching the inner ear where the brain interprets it. Avoke (1997) supports this argument and explains that the basis of conductive hearing loss is usually an obstruction of sound in the external ear (outer and middle ear) so that even though the inner ear is functional, sound does not reach it. In many cases, obstructions in the external canal and the middle ear could be wax, foreign bodies and inflammations such as otitis media or perforation of the eardrum. Avoke

explains that surgical corrections may be useful in alleviating some of these problems that relate to conductive hearing loss.

Sensorineural hearing loss is due to insensitivity of the inner ear, the cochlea or impairment of function in the auditory nervous system. Commenting on this, Zapien (1998) explains that sensorineural hearing loss affects both loudness and fidelity of sound and makes it distorted. Turnbull et al. (1995) also explain that sensorineural hearing loss, sometimes called nerve deafness, is caused by a problem in the inner ear or the nerve pathway of the inner ear to the brain stem such that although the outer ear picks up sound signal and the middle ear transmits it to the inner ear, no reception takes place because the inner ear is damaged therefore no sound is heard. Damage to the auditory nerve and infections such as German measles and meningitis are heavily implicated as some of the causes of sensorineural deafness. A combination of conductive and sensorineural hearing losses could also occur and that is termed as *mixed hearing loss* (Avoke, 1997). Avoke believes that when hearing impairment occurs earlier in life, the child will have difficulties in developing the language of the hearing society.

2.4 Effect of Deafness on Spoken Language Acquisition

Deaf persons are classified into two main categories: the *Prelingual* deaf and the *Postlingual* deaf based on the onset of hearing loss and its effect on language acquisition. To most contemporary educationists, the type and the effect of deafness is important to understanding why the deaf would meet challenges in general education and why they would need more visuals in their teaching and learning.

Turnbull et al. (1995) indicate that a hearing loss at birth, in early childhood, or before exposure to spoken language is called prelingual deafness. Avoke (1997) agrees that prelingual deafness results when hearing loss occurs before speech and language is acquired. Yekple et al (2011) cite Hallahan, Kauffman and Pullen (2009) who use the term “congenitally deaf” in their description of the prelingual deaf and explain that prelingual deafness is sustained prior to the acquisition of language. The onset of deafness occurs before birth or in early infancy, at the time when spoken language has not been acquired. This impairs an individual's ability to acquire a spoken language (Easterbrooks and Stoner, 2006). Marschark and Mayer (1998) believe that it makes sense that individuals with prelingual hearing losses would have more difficulty in phonological processing than hearing peers and would be less likely to employ phonological (“speech-based”) codes in memory. Since spoken language acquisition is absent in such persons, their education becomes challenging.

Both Turnbull et al. (1995) and Avoke (1997) assert that postlingual deafness results after the onset of speech acquisition. Hallahan, Kauffman and Pullen (2009) describe postlingual deafness as “adventitious deafness” and explain that their deafness results after development of speech and language. The time of onset of deafness affects how a deaf individual perceives and memorizes things. The authors explain that a child who becomes deaf at age 12 (postlingual) has presumably acquired a measure of their parents’ language and stands to understand the structure of such language even when reduced to writing. However, the child who becomes deaf at birth (prelingual) is put in an entirely different spot. This is because the acquisition of the structure of any particular language

is absent and therefore such an individual is bound to have difficulties in matching their understanding with spoken language even when reduced to writing. Consequently, students who are deaf have difficulties in acquiring receptive and expressive spoken language skills (Easterbrooks and Stoner, 2006).

It is clear that the terms prelingual and postlingual are used to distinguish the impact of hearing impairment on the ability of an individual to hear and understand speech and therefore the likelihood for such a person to receive classroom education. If a deaf person's hearing impairment affects his acquisition of spoken language, classroom teaching and learning will also be negatively affected. Even though Sign Language, which is visual, is used as a mode of communication, the various written texts (materials) used in deaf education are set in the structure and grammatical rules of such spoken language which the deaf are not so inclined to understand. This situation will have adverse effects on deaf education because as Easterbrooks and Stoner (2006) indicate, deaf individuals cannot match their understanding of concepts with spoken language even in written text. Easterbrooks (2008) advises that it is imperative for teachers and parents of the deaf to have knowledge, skills, and familiarity with research pertaining to etiologies of hearing loss in order for such teachers and parents to effectively facilitate and manage the education of the deaf.

2.5 Effect of Deafness on Education

Analysis of studies by Schulz and Turnbull (1984), Turnbull et al. (1995), Telford and Sawrey (1977), Avoke (1997) and Yekple et al. (2011) reveal that the degree of hearing

loss experienced by students who are deaf differs and has some impact on their communication and education. Yekple et al. (2011) outline that a hearing level of 10-15 decibels (dB) is normal and has minimal impact on communication. A hearing level of 16-25dB is slight deafness. In quiet environments, the individual has no difficulty recognizing speech but in noisy environments, faint speech is difficult to understand. A hearing level of 26-40dB is mild deafness and in quiet conversational environments in which the topic is known and vocabulary is limited, the individual has no difficulty in communication. In this case, faint or distant speech is difficult to hear even if the environment is quiet. Classroom discussions will therefore be challenging for the deaf person to follow.

On the other hand, hearing level of 41-55dB is described as moderate deafness; the individual can hear conversational speech only at close distance but group activities such as classroom discussions present communicative challenges. Furthermore, a hearing level of 56-70dB is moderate-severe; the individual can hear only loud clear sounds and has much difficulty in group situations. Often the individual's speech is noticeably impaired though intelligent. A hearing level of 71-90dB is severe deafness and the individual cannot hear conversational speech unless it is loud and many words cannot be recognized. Environmental sound can be detected though not always identified. The individual's speech is not altogether intelligible. A hearing level of 91dB+ is profound; the individual can hear loud sound such as gunshot but cannot hear conversational speech at all.

Commenting on the above analysis, Yekple et al. (2011) further explain that since hearing facilitates communication, students with hearing impairment have a disadvantage of effectively understanding and contributing well in a classroom teaching and learning process which involves oral communication and use of English Language and hence will adversely affect their classroom education. This is because language is invariably related to knowledge and teachers either in Schools for the Deaf or Inclusive classrooms have a crucial role to play in facilitating the teaching and learning of the deaf. Yekple et al. (2011) emphasize the need for teachers to understand the behavioural symptoms that suggest a hearing impairment of students in a classroom and how to address the learning needs of such students. Understandably, effective teaching and learning may be problematic in a class of students with such degrees of hearing losses but a learner-centered approach may help satisfy the educational needs of such individuals.

2.6 Academic Challenges of the Deaf

Rowh (2006) cited in Easterbrooks and Stoner (2006) notes that the ability to read and write is an important component of one's potential academic and vocational success which is dependent upon already knowing how to speak or how to use a Sign Language. Majority of deaf people do not use speech to communicate and this may be a challenge to a deaf person's academic and vocational success if such a person is not literate in Sign Language. Research indicates that majority of deaf individuals, especially the Prelingual, face enormous challenges developing speech or spoken language at home and in school (Easterbrooks and Stoner, 2006; Yekple et al., 2011) and therefore often rely on visual communication in classroom teaching and learning processes.

Turnbull et al. (1995) state that students who are deaf typically are academic underachievers in reading subjects and Mathematics. They further add that “students who are deaf have reading problems in three general areas: vocabulary, syntax and figurative language, including idioms” (p. 557). Supporting Turnbull et al., Easterbrooks and Stoner (2006) assert that students who are deaf do not have the same access to the rules of spoken language as do children with normal hearing. This is because spoken language usually has its own sets of grammatical rules that are followed to make communication meaningful even when reduced to written text. These rules are set in disparity to Sign Language which depends on contextual meaning and remains the major instructional language of the deaf.

According to Easterbrooks and Stoner, English Language has rules governing vocabulary, syntax and figurative language and uses parts of speech such as adverbs and adjectives which the deaf student cannot comprehend (Turnbull et al., 1995). Sign Language on the other hand is limited in vocabulary and does not cover many words in English Language. The challenge is that the deaf student will have to depend on regular textbooks to make meaning of the education provided in schools. The classroom presents an even more difficult situation to the deaf with regard to teaching and learning where the understanding of a subject matter depends mainly on the understanding of individual words of English Language. Thus strict reliance on formal English Language in teaching the deaf poses a major challenge to majority of deaf students in their educational advancement.

Besides, the limited language input that the student with hearing loss is able to access, as well as the limitations in technology developed for deaf education reflect in some learning difficulties. The average child who is deaf may complete secondary education functionally illiterate, with considerable delays and variances in written language and education in general as compared to the hearing child (Easterbrooks and Stoner, 2006). The fact is, easy acquisition of the skill of writing is predicated upon an already learned language base, which majority of deaf students do not necessarily have in either spoken or signed modes because they are born to hearing parents who do not use Sign Language. This stagnation in language development is reflected in research; students with hearing loss often use the same descriptors for item explanation (such as general number and size) at age 18 as they did at age 10 (Smith, 1995).

Empirical studies have shown that students who are deaf also have a limited short-term memory (Marschark and Mayer, 1998). They have challenges focusing on content and therefore fasten their short-term memory with noncritical functions such as spelling, grammar, and punctuation. As a result of this poor and delayed language base, written language output and general education of deaf persons are typically poor and frustrating (Easterbrooks and Stoner, 2006). Nevertheless, Turnbull et al. (1995) assert that people who are deaf are not academically stupid. They have the same distribution of intelligence as hearing people yet attempts to educate the deaf using regular education approach would be inappropriate.

2.7 The Need for Special Education

Oppong (2003) cites Adima, Abang, Awandor, Ladipo, and Ogubue (1988) to define special needs education as “an area within the framework of general education that provides appropriate facilities, specialized materials and teachers with adequate training for all types of children within the nation’s education system who have unusual needs” (p.3). Smith (1993) as cited in (Avoke, 1997) views special education as a set of instructions that is individually tailored to meet the unique needs of a child with exceptionality taking into account the child’s individual learning strength and weakness rather than following one set of curriculum as regular education does.

Oppong cites Adima et al’s (1988) definition of Special Needs Education of the Nigerian Federal Government National Policy which states that

Education of people who have learning difficulty because of different sort of handicaps; blindness, partial sightedness, deafness, hard of hearing, mental retardation, social maladjustment, physical handicap, etc, due to circumstances of birth, inheritance, social position, mental and physical health pattern or accident in later life (p. 2).

Oppong cautions that not anyone with little depression, vision or hearing loss or some amount of forgetfulness can be regarded as needing special education. Rather, it is those individuals who have disability or impairment or giftedness or talentedness that significantly interferes with their educational performance/programming, social integration, moral and cultural adjustment communication, mobility, cognitive, affective and psychomotor performance who need special education. Oppong (2003) therefore indicates that students who deviate from what is supposed to be average in physical, mental, emotional or social characteristics are the ones who require special educational services to help them to develop their capabilities. The literature provides evidence that

deaf students deviate significantly from what is considered “normal” as their impairment interferes significantly with ordinary communication, educational advancement, and social mobility.

Oppong (2003) paints a clear picture of what is involved in special needs education of the deaf in his claim that the successful education, socialization and effective enculturation of students with special needs demand the use of some special equipment, special materials and specially trained teachers. Whereas “regular students access formal education, social integration, and effective enculturation through incidental learning, chalk and voice language, audition for example, the deaf cannot” (p. 108). This shows why deaf students require a specially trained teacher, special methods of teaching and specially designed curriculum to enable them function well in society. There is the need therefore to investigate the existence of such facilities in the Schools for the Deaf in order to understand how these inputs can help improve education of the deaf.

2.8 The Concept of Teaching and Learning

Teaching has been subjected, over the years, to a variety of descriptions and definitions. It has generally been described as an art of inducing students to behave in ways that are assumed to lead to learning. According to Tamakloe, Amedahe, and Atta (2005), teaching is “an activity of imparting knowledge, skills, attitude and values to learners” (p.4) and involves creating situations to facilitate learning and motivating learners to have interest in what is being transmitted to them. Reddy (2004) also argues that “teaching is giving information and imparting knowledge” (p. 52) and the means whereby society trains the young in a selected environment as quickly as possible to adjust themselves to

the world in which they live. As Tamakloe et al. (2005) indicate, the term “teaching” can be used in an informal, non-formal and formal setting. In this report, the concept of teaching focuses on formal teaching where the teacher takes full control of the class and decides on what to teach and the methods to use. In this vein, teaching becomes a more systematic process.

Teaching thus does not occur without a supposed learner. In most existing literature, “teaching” has been defined closely to be the casual impartation of knowledge from the teacher to the learner. This study, however, does not support this idea. It believes that teaching is construction of knowledge rather than mere impartation of knowledge.

Gagne (1985) as cited in Tamakloe et al. (2005) states that “learning is a change in human disposition or capacity that persists over a period of time. . .” (p. 15). Slavin (1991) also cited in Tamakloe et al. also defines “learning as a change in an individual that results from experience” (p. 15). This explains that learning results in change which is brought about through perception, observation and experiences of the individual. The definitions suggest that learning is the individual’s ability to exhibit intelligent skills, acquire new information and attitudes. Schools of thought however, caution that the process of learning is not mere acquisition of facts and skills through drill and repetition. It involves organisation and evaluation of learning materials and learning styles.

According to Farrant (1995), teaching and learning are the opposite sides of the same coin and that when teaching is done, the receiver or the learner is expected to imbibe what is taught. According to Farrant, two complementary roles are played side by side

namely, the role of the teacher and that of the pupil/student. In this sense, Farrant adds that a lesson that is considered to have been taught is one that has been learned. Teaching is thus regarded as a process of bringing about learning. It is therefore logical to agree that teaching is not merely lesson-having, nor is it merely dispensing subject-matter. The teacher is expected to involve the student in the teaching-learning process. The idea that knowledge is constructed rather than given suggests that when students are engaged in their own learning process, they analyze, synthesize, and evaluate information to solve life problems. Learning therefore can be said to be an active construction of meaning rather than a passive acceptance and memorization.

Melby (1963) as cited in Tamakloe et al. (2005) signifies that the teacher does not consider himself as a storehouse of wisdom and knowledge where the students enter and assimilate wisdom. The teacher rather guides learners to explore their minds for solution to problems. He/she stimulates students to be able to use their mental faculties in problem-solving. Thus there is no pretention on the part of the teacher that there is only one sure way of solving a problem. For this reason, Feng (1988) believes that teaching should also involve thinking skills that are necessary for survival in society. She believes teaching can equip individuals with the tools needed to deal constructively with whatever kinds of information and conditions that may typify the future.

It could be said from the above discussion that pouring out knowledge or hearing lessons is neither teaching nor learning. Teaching involves getting at the heart and mind so that the learner begins to value learning. This study therefore defines teaching as a systematic

process of guiding learners to construct knowledge through their own mental and social activities. According to Bull and Solity (1987), teaching and learning is effective and teaching objectives are best served when teachers and learners cooperate towards a common purpose. This can also be true in the case where students do co-operative learning. As students interact and look at each others' work, they learn by mentally competing with other students rather than working quietly. They are able to impart knowledge easily among themselves to supplement classroom lessons. In classrooms of the deaf where the teachers may not be able to help students to construct knowledge via Sign Language properly, this learning process could serve as a useful tool.

2.9 The Curriculum and Teaching Methods

Students with special needs need an adapted form of the school's curriculum in order to go through the existing educational programme successfully (Oppong, 2003). The question that arises here is "what should constitute the curriculum for deaf education? In this regard, Luetke-Stahlman and Luckner (1991) as cited in Turnbull et al. (1995) outline the choices educators have with respect to designing the school curriculum as follows:

- Use curriculum that has been specifically developed for students who are deaf.
- Use the general education curriculum, try to meet the same standards and expectations that apply to students without exceptionalities but allow for special or related services and methods.
- Use the general education curriculum but reduce the level of complexity.

- Use a curriculum designed for a lower grade level or one that has been developed for students with other exceptionalities.

The choices presented by these authors however run short of specifying the actual curriculum required to educate students who are deaf. The Report of the President's Committee on Review of Education Reforms in Ghana (2005) for instance recommends that "the facilities and programmes in special education schools should be reviewed in view of the current development in special education... (p. 58), which also runs short of specifying what the new trends are and what should define the curriculum for special needs education in Ghana.

Oppong's (2003) view is that the aspect of special needs education that makes it unique and "special" is the method of teaching. He describes that in the traditional setting, the chalk and talk method of teaching could equip the regular students with the needed knowledge while question and discussions may straighten up any inconsistencies. However, Oppong believes that these methods will not be effective in the case of the deaf if they are not modified to meet their needs. Although he believes teaching methods adopted for students who are deaf should be based on the peculiar need of the students, he does not prescribe any particular teaching methods that would suit deaf students.

With regard to teaching methods, Broudy (1963) as cited in Tamakloe et al. (2005) explains teaching method as the "formal structure of the sequence of acts commonly denoted by instruction" (p. 322). He contends that teaching methods are the processes

which are adopted by both the teacher and the student to induce learning in a teaching and learning interaction. For the purpose of this study, some of the major teaching methods outlined by Tamakloe et al. (2005) are discussed in the following sections.

The Lecture Method

This is one of the oldest methods of teaching and the core of scholastic instruction. Today, it assumes the form where the teacher selects a topic which is based on a current problem or issue which the teacher thinks is of importance in any aspect of human endeavour. The teacher states his/her viewpoints and substantiates or criticizes them with other viewpoints from other authoritative sources.

The Discussion Method

In this method, the teacher raises a number of pertinent issues for the students to decipher. The students must be willing to co-operate and should have enough experience to make meaningful contributions. In a discussion, the students are asked series of questions which require some responses. The teacher provides cues as he/she guides the discussion through the questions he/she poses. It becomes an interaction between the teacher on the one hand and the students on the other hand. The teacher allows the students to do most of the thinking and talking and this offers opportunity for a high level of student activity and feedback. This method of teaching is effective in developing concepts and skills in problem-solving.

The Project Method

This is the result of the pragmatic education idea of American educationist and philosopher John Dewey. This method of teaching was developed to change the traditional classroom which was characterized by restlessness and lack of interest. It is one of the very good methods of generating activity for the development of the cognitive, the affective and psychomotor skills of students. The project method of teaching is where the teacher gives assignment to the students who freely work independently to reach the requirements. The teacher comes in to offer help as and when necessary.

The Discovery Method

This is where the teacher leads the students through a carefully planned sequence of activities to arrive at the learning object, using either statements or questions or both. In other ways, the students are given a topic or problems by the teacher to work on. The students are free to explore the topic with a minimum of guidelines or suggestions by the teacher. They do not only arrive at conclusions themselves but also plan strategies for acquiring information or solving the problems.

The literature is rather quiet on the type of teaching method that will be best for use in the classrooms of the deaf. However, one thing is certain that any teaching method that gives students hands-on experiences and makes them have active participation in their own learning will be suitable.

Giles, Pitre, and Womack (2003) suggest two approaches for implementing teaching methods in the classroom. One is a teacher-centered approach in which the instructor incorporates materials, resources, and activities into the lesson that teach to the different intelligences. The other is a student-centered approach in which students actually create a variety of different materials that demonstrate students' understanding of the subject matter. The student-centered approach allows students to actively use their varied forms of intelligence. In a student-centered lesson, the instructor may incorporate aspects of the project method, and the discovery method. Giles et al's explanation brings out the view that both the student-centered and the teacher-centered methods would apply in teaching and learning of the deaf. This is because, in special education classrooms, the role played by both the learner and the teacher is essential (Oppong, 2003).

It is important to note that many activities designed to allure the visual intelligence of the deaf may also utilize other intelligences as well. For example, the students may work together on creating a mural of the school surroundings. This is a student-centered activity that directly involves visual/spatial intelligence but also gives students a chance to exercise their interpersonal intelligence. Giles et al. maintain that timeline and map assignments are student-centered activities that are designed to enhance students' logical/mathematical intelligence but also delve into visual/spatial intelligence. When students collect and organize information for both timeline and map they use their logical/mathematical intelligence. In creating these items, students think visually as well.

By incorporating the making of an art work in classroom lessons, bodily-kinesthetic intelligence of the students is promoted. Class discussions also provide an opportunity for students to exercise both areas of their personal intelligences, as well as to reinforce the subject matter. It is clear that there are gaps in research focusing on the appropriate teaching methods that are relevant for the education of the deaf. Further research is therefore needed on teaching methods that can be suitable for the successful education of deaf students in Ghana.

2.10 Learning Styles of the Deaf

The term “learning styles” is commonly used in various educational fields and therefore, has many connotations. In general, it refers to the uniqueness of how each learner receives and processes new information through their senses. Giles et al. (2003) categorize learning styles into four major areas; the visual, aural, reading/writing and the kinesthetic/tactile learning styles. According to Giles et al.,

- Visual learners process information most effectively when the information is seen. Depictions can include charts, graphs, flow charts, and all the symbolic arrows, circles, hierarchies and other devices that instructors use to represent what could have been presented in words. These learners think in pictures and have vivid imaginations. Most people are classified as visual learners.
- Aural learners process information most effectively when spoken or heard. These learners respond well to lectures and discussions and are excellent listeners. They also like to talk and enjoy music and dramas. When trying to recall information, aural learners can often "hear" the way someone told them the information.

- Reading/Writing learners process information most effectively when presented in a written language format. This type of learner benefits from instructors that use the blackboard to accent important points or provide outlines of the lecture material. When trying to recall information, reading/writing learners remember the information from their "mind's eye."
- Kinesthetic/Tactile learners process information actively through physical means. Kinesthetic learning refers to whole body movement while tactile learning refers only to the sense of touch. These learners gesture when speaking, are poor listeners, and lose interest in long speeches. Most students that do not perform well in school are kinesthetic/tactile learners. The crux of this learning style is that the learner is connected to real situations through experience, example, practice, or simulation.

These learning styles are in line with Gardner's (1993) theory of multiple intelligences which defines intelligence as the ability to solve problems that one encounters in real life. These intelligences include linguistic, logical-mathematics, visual/spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal and naturalistic intelligences. Out of the eight multiple intelligences, the visual/spatial intelligence that refers to the ability to form and manipulate a mental model is likely to suit the deaf (Harding and Terrell, 2006). As visual learners, the deaf process information most effectively when the information is seen (Easterbrooks and Stoner, 2006) and are likely to use the visual learning style to meet their hearing impairment. In this case, depictions and visual presentations such as movies, videos, demonstrations using models and props, pictures, charts, graphs and flow charts are important instructional tools in the classrooms of the visual learner.

Giles et al. (2003) argue that each person is born with certain preferences toward particular styles, but culture, experience, and development influence these preferences. Though the explanation does not address one's disability as an aspect that could influence the choice of a learning style, it could be a factor for the choice of a particular learning style among the deaf; their hearing impairment may influence a learning style that relies on vision.

2.11 The Deaf as a Visual Learner

The views of Easterbrooks and Stoner (2006), Marschark and Mayer (1998) and Turnbull et al. (1995) indicate that a curriculum stressing the mastery of grammar and speech instruction, with little time for vocational practical learning may not be in line with deaf education. Because deaf students are visual learners, they can only enrich their vocabulary visually. In this regard, Henley (1992) believes an alternative means of communication should be practised in the classroom so that sensory stimulation and information can be provided, mostly visually. As the eye replaces the ear in classrooms of students who are deaf, everything instructional should be visual enough. Henley acknowledges that almost every child enjoys being read to, spoken to or sung to and being entertained while learning something new. In the case of the deaf, dramatic movements and gestures are all powerful generators of visual images that can be used as motivational strategies to challenge them. They can be useful if they are scaled to a mode of communication that accommodates the special needs of the child. Henley (1992) strongly believes that the deaf “may be relying upon visual cues, signed language and body movement” to learn new things from the classroom (p. 85).

2.12 The Visual Mode of Communication

Sign Language is a visual language that is most important to the deaf. It has successfully been used to teach both children and adults with severe language disabilities to communicate and deaf people have also learned to communicate via Sign Language. Many other factors may explain why Sign Language is effective but the fact remains that it has been used successfully as a tool in the remediation of communication problems of organic and psychological etiology (Vernon and Coley, 2011). By using this visual language, a deaf person gets strong kinesthetic feedback and reinforcement along with added visual input.

The use of Sign Language involves the kinesthetic, multimodal, motivating, classical conditioning, and sensory training principles basic to the learning theory involved in high quality reading and language instruction (Vernon and Coley, 2011). Signs are idiographic (representing a full idea), thus having certain possibilities for helping deaf people in learning that English and other languages using non-idiographic writing systems lack. Signs are so visual, vivid, dramatic, and fascinating and because of that they may serve as a powerful motivating force in education of the visual deaf learner.

2.13 Art as a Visual Language

Smith (1995) asserts that long before words were understood by any human, the art of gestures and movements had already been understood. Children gesticulate, make movements, leap, and draw and paint long before they form proper speech communication skills. Art is a visual language with receptive and expressive components

in which ideas are communicated without having to make a speech. This perspective can lead to an understanding that art can become a teaching tool in the education of people with verbal communication disabilities. Eubanks (2011) agrees that art can move from the fringes of the curriculum toward the core of learning for all young children, especially those for whom spoken language acquisition is difficult.

Sharing their stand on art being a language, Schulz and Turnbull (1984) contend that art is a method of expression and that through art, students can become more sensitive to their own ideas and feelings and communicate these with peers and adults. Schulz and Turnbull further acknowledge that because art is an important form of communication for all students, it may have especially important implications for students with language handicaps who are impaired in some channel of communication. Art can therefore not be ignored in teaching the deaf. It is particularly relevant in the education of the deaf because art provides them with a means to focus on what the eyes can see. To the deaf, art can be a hobby, a learning aid as well as a mode of communication.

Even in peer relationships, Schulz and Turnbull (1984) believe that art education itself provides many opportunities for students to work together and to share their expertise. They assert that when handicapped students have special talents in art, they should have the opportunity to receive peer recognition. In this way, art can enhance the cognitive, social and emotional development of deaf students. Art can provide unique ways for deaf students to acquire skills and knowledge that could otherwise be impossible to gain because of their hearing impairment. Schulz and Turnbull (1984) again document that

teaching words in reading has traditionally been a vehicle for incorporating art. They describe how learning can occur when students describe their experiences for the teacher to write these down in words which the students then illustrate through art projects and thereby learn to recognize and comprehend the words in written form.

In comparing art as a visual language to a verbal language, Eubanks (2011) identifies that verbal language consists of receptive and expressive components. According to the author, receptive language refers to the understanding of words used by others and the decoding of verbal symbols. On the other hand, expressive language refers to communicating ideas by speaking or writing, in effect, the creation of coded verbal symbols. Eubanks explains that in visual language, viewers read and interpret the visual symbols encoded in works of art and express visual language through the creation of visual symbol systems which enables them to make marks or objects that communicate ideas. This means that form in verbal language constitutes sounds, words, and the way the words are arranged. The equivalent of this in the visual language, Eubanks states, is the physical evidence of the artist's expression described in terms of the elements of art and principles of design. The implication is that content in language can be considered equivalent to meaning in the visual art as meaning is often embedded in the symbols artists use and arrange with the conscious intent of creating meaning.

Kepes (1944) as cited in Eubanks (2011) describes visual language as more holistic than spoken language and more efficient as a disseminator of knowledge than most other means of communication. In much the same way, Arnheim (1969) as cited in Eubanks

(2011) considers the visual language superior because it comes closer to the original stimulus as verbal language is linear, sequential, and one dimensional, by comparison. It is perhaps these factors that make Art educators describe art as the first language of children. According to Eubanks, we learn to read visual language, without formal instruction earlier and more spontaneously than verbal language. Consequently, Eubanks explains that children with modest verbal reading ability are able to read complex visual images. Citing Owens (1988), Eubanks agrees that children can understand words before they can say them. Similarly with visual language, young children learn to recognize and identify visual images by age one-and-a half or two years, though they generally do not begin to make meaningful marks before age 3 or 4 years.

All the similarities described as existing between art and language point toward the perspective that art is a language, a system of symbols used for communication. The relationship between art, the visual language, and verbal language development is a strong one. Young children's visual expressions can be an important part of their developing symbolic repertoire (Eubanks, 2011) and therefore in the teaching and learning process of the deaf, teachers and learners need to employ more visual language. Deaf students need visual expression to communicate and should be taught through visual language because their inability to perceive sounds and speech auditorily establishes the need for them to rely on what is seen and not what is heard. This implies that the deaf is a visual learner and therefore quality education for the deaf should be based on teaching through the visual arts.

2.14 Teaching through the Arts

As mentioned in section 2.13, the arts in general have served as a universal language for humans since the beginning of time. Gestures, body movement, dance, paintings, pictures, sculpture, ceramics and masks carry symbolic meanings that often have no verbal equivalents; they are understood without words. The Committee on Labour and Public Welfare of USA which passed the Education for All Handicapped Children Act in 1975 states that

The use of the arts as a teaching tool for the handicapped has long been recognized as a viable, effective way, not only of teaching special skills, but also of reaching youngsters who had otherwise been unteachable. The committee envisions that programs under this bill could well include an arts component and indeed, urges that local educational agencies include the arts in programmes for the handicapped under this Act. Such a program could cover both appreciation of the arts by the handicapped youngsters and the utilization of the arts as a teaching tool per se (Senate Report pp. 94-169 cited in Smith, 1995).

Invariably, the use of visual art helps strengthen memory in deaf students who have to rely so much on visual communication to be informed. Smith (1995) believes the arts help cognitive development as well and explains that all the arts offer opportunities for the child to talk about what he/she is doing or expects to do, and all the arts work on helping a child to visualize. To visualize helps a child to remember vocabulary, which helps his academic development. Smith further states that even straight academic content such as mathematics, grammar, syntax and spelling can be taught effectively to learning-disabled children through the arts (Smith, 1995).

Goodlad and Morrison (1980) as cited in Schulz and Turnbull (1984) claim that “education is incomplete when it fails to include art. Therefore, a school curriculum

including little or no time for art is inadequate, whatever the level of the students' achievement in reading, mathematics or science" (p.234). This is because art activities allow students to develop and participate at individual rates and ability levels and to study and adapt to their environments. The teaching of basic skills and subjects through art has proven to be valuable in remedial and instruction (Schulz and Turnbull, 1984).

Furthermore, Smith and Perks (1978) as cited in Schulz and Turnbull (1984) concur that art enables handicapped students to initiate their own ideas and materials rather than to assume passive roles. They add that students with learning problems have difficulty developing academic skills therefore teachers should help students compensate for their deficiencies by developing interests and talents in other artistic endeavour that they can perform successfully. The authors also believe that many students with learning problems have strong talents in art.

These statements confirm the assertion that art applies itself significantly in the education of handicapped students such as the deaf. Art teachers are thus seen as very important in the field of special education. By using artistic channels to teach, the academic skills and self-concepts of handicapped students are developed. This is because art provides student-centered experiences that are adaptable to every aspect of the school curriculum and to all skills areas (Schulz and Turnbull, 1984).

Another idea is that children's drawings offer a cognitive pathway into their understanding, allowing their teachers to check the students' understanding of new

vocabulary and correct syntax (Eubanks, 2011). Eubanks believes drawing and other visual means of thinking can foster the development of written language because it provides an opportunity to rehearse, develop, and organize ideas prior to writing. This suggests that students who are deaf could learn to rely on visual clues for information and understanding.

Smith (1995) also acknowledges that almost every child can be reached and taught innumerable skills through art which foster intellectual, physical, social and emotional growth that are essential to quality education. The idea is that the arts provide activity learning which immature students greatly need to gain total involvement to ensure their understanding of the material being taught. Smith elaborates further that the

Arts lend themselves to the imaginative use of concrete materials and experience to teach abstract ideas. Neural immaturity makes it very hard for disabled children to grasp abstractions. They have to be introduced to abstractions through their bodies, through objects and pictures and then through symbols. The arts offer opportunities to strengthen visual, auditory, tactile and motor areas. Through the arts, children can order their worlds, make sense of what they know, relate past experience to the present and turn muscular activity into thought and ideas into action (p. 170).

Though Smith's statements refer generally to all learning disabled students, these assertions are also true for the deaf learner who needs the arts because he/she cannot hear to understand what is taught. Furthermore, Smith (1995) agrees that art offers pleasure and tangible results to children and that if a child has not acquired the basic skills essential for approaching academic tasks even if he is taught several times in the classroom, he could be taught successfully through the arts. By working with sizes, shapes, colour; using and recognizing a symbol in varying context, they learn better

(Smith, 1995). This pre-supposes that the skills for academic readiness inherent in the arts can help deaf students to organize and remember sequence as well as gauge relationships through what they can see and do.

2.15 The Artist's Contribution to Deaf Education

The importance of art teachers is well documented in general education. Through art teachers, academic readiness and quality education can be ensured to unearth not only academic potentials of the deaf but the artistic talents as well (Smith, 1995). Smith believes any good teaching is diagnostic. Often in schools where art is much valued, the artist can make important diagnostic observation to alert a classroom teacher. The author presumes that although the arts at schools have been used to ensure quality education and to teach academic readiness, they have sometimes unearthed artistic talents that become vocations or important leisure-time activities for the deaf.

Art teachers are usually important in trying to reach and teach the children who defy regular school practices. Usually in such academic setting, educators and artists share many common goals and pool talent and techniques together. Artists are important part of the education of handicapped children especially the deaf and so productive partnerships between art specialists and classroom teachers may maximize the potential for developing art as teaching tool and as a means of communication.

2.16 Importance of Visuals and visual teaching to the Deaf

Visual aids are the channel of communication that employs the eye-gate to reach the mind. Knowledge could be acquired through the five senses; sight, hearing, smell, taste and touch. There is no doubt therefore that a great deal of knowledge can be acquired through the sense of sight in the case of the deaf. This is proved right by the popular Chinese proverb which says: “What I hear I forget, what I see I remember, when I do I understand” (as cited in Anderson, 2012).

Psychologists have come full length to explain the underlying pattern in all learning which illustrates the importance of vision and memory. Marschark and Mayer (1998) found that among deaf students, Sign Language skill is strongly and inversely related to memory span, implying that the most effective teaching aids are those which contribute to practical and visual impression. This is relevant to the deaf who uses Sign Language, which is visual.

The recent rise in the use of visual tools in the general education classroom (Meyer, 1995 as cited in Easterbrooks and Stoner, 2006) and in the classroom with students with learning difficulties suggests that pictorial instruction and visual representation may provide deaf learners with an alternative support to acquire the needed education. It should be stated that without visual aids, teaching to students who are deaf may be daunting. This explains that teachers of the deaf need to adapt teaching methods and assessment procedures which will have impact on the academic achievements and

performance of deaf students. This includes the use of visual tools which play important role in creating an effective learning environment.

Stepp (1981) opines that teachers must use the various types of visual aids to interact with students and integrate the use of computer aided visual techniques that influence the curiosity and recollection of information by students. According to Stepp, utilizing visual tools in teaching will make the best stage for learning and teaching. Harford and Baird (2012) describe some of the types of these visual tools;

1. Blackboards/whiteboards

These are main pieces of equipment found in many schools. Types of them may include movable chalkboards, wall chalkboards which are fixed and the roller or pulley system. Blackboard/whiteboards are useful for building up graphs, diagrams, maps, and the scheme of a lesson as it unfolds. A word or sentence recorded on the board helps provide an emphasis which may be lacking in a lesson therefore the size of the chalkboard should be large enough for clarity.

2. Posters

These consist of pictures, words and or numbers drawn on large, flat sheets of paper, cloth or card. They should be as big as possible with clear illustrations and short messages. Posters are useful to communicate simple, clear information and can be used effectively in classrooms.

3. Wall charts

These are large flat printed sheet of paper, card or cloth, which record and display related sets of information. Wall charts contain much more information than posters, which usually convey only one message at a time. A wall chart used as a teaching aid for a lesson must be large enough for clarity.

4. Display Board

This is any kind of board on which visual and written materials can be pinned or glued. It can be used to display students' work, give information about a new development activity or perhaps display instructions for operating machinery (for example, a photocopier). It is especially appropriate for use in teaching or training situations where there are no solid walls to display material, in mud houses classrooms for example. It can be free-standing, mounted on a wall or hung from a ceiling or tree. It can be made of wood, line, cork cardboard, woven mats or other materials.

5. Computers and Projectors

Computers and projectors are both electronic devices that display information. In modern classrooms today, these can become useful visual teaching tools. These excellent tools have all the features and uses that can support teachers in lesson presentations. They can be used without the need for the teacher to turn his back on the class. If there is constant power supply this can save time and help the teacher to be better organized in his/her teaching. Visual presentation programmes such as the Microsoft PowerPoint allow teachers to modify their slides to suit lessons.

All these visual aids such as chalkboard, wall display, flannel board, flipchart, washing-line display, poster, wall chart, banner, wall painting, and flashcard can serve as useful tools for teachers in Schools for the Deaf. However, research is needed to know whether the various Schools for the Deaf use these visual aids effectively and efficiently in a manner that facilitates teaching and learning.

The term *visual people* is used in this study to describe students who are deaf because they communicate and learn best via visual strategies. The importance of visuals is seen in Aristotle's statement that "without image, thinking is impossible" (Benson, 1997 as cited in Stokes, 2001). This implies that what the eyes can see is critical for thinking to take place because pictures make it easy for people to decipher the meaning of data that is encountered. A common belief that Leonardo da Vinci, in recognizing the impossibility of recording volumes of data, translated words into drawings from different aspects corroborates this assertion. It is important therefore that teachers of the deaf should incorporate more visual tools into their instruction to enable them deal with information that is communicated to them.

Harding and Terrell (2006) argue that "Visual learning is a proven teaching method in which ideas, concepts, data and other information are associated with images and represented graphically" (p. 3). This means that visual learners prefer using images, pictures, colours, and maps to organize information and also communicate with others. They easily visualize objects, plans and outcomes in their mind's eye.

Research in both educational theory and cognitive psychology tells us that visual learning techniques are among the very best methods for teaching students of all ages, especially the deaf how to think and how to learn. Visual learning when combined with the appropriate teaching methods enables students to clarify thoughts, organize and analyze information, think critically and integrate new knowledge by visually seeing how items can be grouped and organized. Using graphics provides deaf students with visual ways of working with information and presenting ideas (Harding and Terrell, 2006).

Deductions made from available literature show that visual teaching inspire deaf students to tap into their own creativity, to clarify their thoughts, reinforce understanding, integrate new knowledge, and identify misconceptions. With visual learning, deaf students can use manipulatives, diagrams and plots to display large amounts of information. Undeniably, visual learning is a proven method in which ideas, concepts, data and other information are associated with images and represented graphically. In education's continuing mission of meeting the needs of learners, there is an apparent shift from the long-standing process of reading, writing, counting, and text memorization skills to a more use of visual aids in today's teaching and learning. The integration of images and pictures in teaching has become a must in the education of students who are deaf.

2.17 Instructing through the use of Visuals

Learning through orderly, sequential, verbal-mathematical, left-hemisphere tasks is a pattern seen frequently in education (West, 1997 as cited in Stokes, 2001). People whose thought processes are predominantly in the right-hemisphere where visual-spatial and

nonverbal cognition activities rule frequently may have difficulty capitalizing on a learning style that is not compatible with their abilities. Visuals and visual aids in general are of value with most types of students but most importantly the deaf. Visual aids arise from schema theory (Easterbrooks and Stoner, 2006) which explains how people integrate new information with old information. The theory explains that students with visual experience build on old schemata and construct new schemata, network old and new information (Kalgren1992 as cited in Easterbrooks and Stoner 2006) and use a framework to make the processes of thinking and organizing visible.

Studies have shown that all students, both normal hearing and students who are deaf, tend to exhibit some of the same usefulness of inculcating visuals in their learning as this helps them to generate ideas and organize them into written products that are clear and on topic. All students need some structure within which to arrange their understanding of new vocabulary and newly realized relationships among words, phrases, and concepts and visual aids can facilitate that.

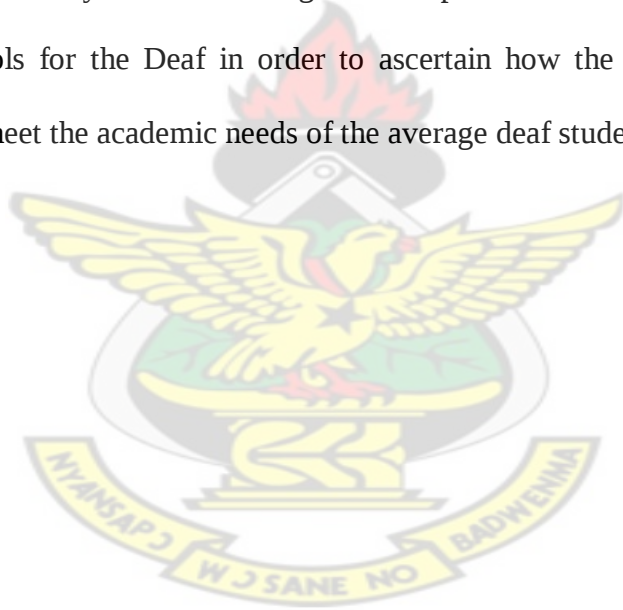
Typically, the visual aids are used to enable the student to see the relationships in content areas (Easterbrooks and Stoner, 2006). Furthermore, Yekple et al. (2011) acknowledge that since communication facilitates learning, students who are deaf have the disadvantage of understanding and contributing well in teaching and learning processes which may involve oral communication and the use of English Language.

The discussion indicates that the arts play a major teaching role in all learning disabled students including the deaf. The very education of the deaf begins with art communication-the use of Sign Language which is visual and artistic and equips deaf students with visual hearing. Since research points to the fact that the deaf requires communication modality skills, the use of visuals in classroom teaching and learning compensates for their hearing impairment.

Research focusing on the use of visual aids in teaching reading and understanding content in general education are readily available but few empirically based research journals have reported the actual practice of the use of visuals in classrooms of the deaf (Easterbrooks and Stoner 2006) even though its importance in their education cannot be put to question. They describe using visual aids in presenting and representing content information for students who are deaf but noted that the theory may be different from practice.

Though research has established that teachers of the deaf must use visuals as teaching aids in content presentation and as a writing support tool, research still remains to be completed on the actual practice of the use of visual aids in teaching students who are deaf. Easterbrooks and Stoner (2006) argue that teachers of the deaf may be already utilizing particular teaching methods and practicing visual teaching, research is still needed to support the practice of the use of visuals in scaffolding the learning difficulties of the deaf.

In summary, the literature reviewed brings out clearly the concept of hearing impairment and the challenges the deaf by nature face which prevent them from acquiring the full benefits of education which depends largely on oral language of the hearing society. Existing literature indicates that the impact of spoken language on deaf education can be curbed if the visual learning ability of the deaf is mitigated through the use of visual arts, incorporation of visual tools in teaching, and the use of appropriate teaching techniques which meet the special needs of the deaf. The literature only shows the importance of visual teaching in deaf education but does not indicate its practice. This gives much credence to this study which investigates the practice of visual teaching in some Ghanaian Schools for the Deaf in order to ascertain how the teaching techniques the teachers apply meet the academic needs of the average deaf student.



CHAPTER THREE

METHODOLOGY

3.1 Overview

This chapter presents the methodology underpinning the study. It provides details of how the entire research was conducted, the specific research methods adopted, the population size, the sampling techniques employed and the data collection instruments used.

3.2 Research Design

The researcher adopted the qualitative research method. Generally, qualitative research is the search for qualities or the characteristics of our experience and how these qualities are translated through a chosen representation form and conceptual outlook. Six features of qualitative study (Eisner, 1991 as cited in Stokrocki, 1997) are that it is:

1. field-focused
2. constructed so that the researcher is an instrument
3. interpretive in nature
4. expressive in language
5. highly detailed
6. persuasive

Qualitative inquiry is defined as a systematic process of describing, analyzing and interpreting insights discovered in everyday life (Stokrocki, 1997). It begins with empirical observation of a phenomenon and its characteristics rather than strict numerical comparison and classification.

Qualitative research considers holistic and vivid description of whatever is observed, rather than numerical comparison as quantitative research may employ. This form of research, according to Stokrocki (1997), generates theory and extends our particular understandings, rather than generalizing about them. Stokrocki further refers to qualitative research as naturalistic inquiry, which is a careful study of human activity in its natural and complex state. Qualitative inquiry broadens our field of knowledge or refutes our accepted beliefs through comparisons with other cases. In arriving at a holistic finding, the research employed a multiple-case study and the descriptive approaches of qualitative research.

Case Study

According to Hitchcock and Hughes (1995), case study refers to the collection and presentation of detailed relatively unstructured information from a range of sources about a particular individual, group or institution usually including the accounts of the subjects themselves. Case study therefore is in many ways the most appropriate format and orientation for school-based research. The duration or the time period for the case study depend on the research objectives and characteristics as explained by Gay (1992) who is of the view that though case study may not take longer periods of time to complete, it could last for a considerable amount of time in some cases.

A major characteristic of a case study is the concentration upon a particular incident. The researcher tries to locate the case of a certain aspect of social behaviour in a particular setting and the factors influencing the situation. Hitchcock and Hughes (1995) indicate

that themes, topics and key variables may be isolated making the situation the focus of attention. A case study is therefore likely to have the following characteristics:

- A concern with the rich and vivid description of events within the case
- A chronological narrative of events within the case
- An internal debate between the description of events and the analysis of events
- A focus upon particular individual actors or groups of actors and their perceptions
- A focus upon particular events within the case
- The integral involvement of the researcher in the case
- A way of presenting the case which is able to capture the richness of the situation.

This study employed the multiple-case study approach to ascertain a holistic picture of the practice of visual teaching in Schools for the Deaf in their natural setting and also to fully understand clearly the effects of the current teaching and learning procedures in Schools for the Deaf. In all, five Schools for the Deaf in different parts of Ghana were studied. In the selected schools, the practice of visual teaching was the key focus of attention. For this reason, the case study took a span of three months from January to March 2012. A preliminary study done to collect data was started some time before the start of the data collection period. The researcher is literate in Ghanaian Sign Language and therefore understood the teaching and learning procedure in the various classrooms of the deaf.

3.3 Library Research

The study used a measure of library research. The researcher visited and extensively used the University of Education, Winneba and the University of Cape Coast libraries because both institutions have programmes of study in special education so their libraries stock educational materials that this study required. The E-Resource Unit of the KNUST main library provided access to very helpful internet sources such as journal articles.

3.4 Population for the Study

The Sage Encyclopaedia of Qualitative Research Methods (2008) refers to population as every individual who fits the criteria (broad or narrow) that the researcher includes as research participant. Thirteen (13) Schools for the Deaf formed the population of the study. These 13 Schools for the Deaf are strategically located across the country with at least, one school in each of the 10 regions of Ghana. According to the Special Education Division of the Ghana Education Service (GES), the 13 Schools for the Deaf have student population of about 4000 which forms the Target population of the study.

Accessible Population

Five (5) Schools for the Deaf constituted the Accessible population for the study. These are located in four regions of the country namely: State School for the Deaf at Adjei-Kojo in the Greater Accra Region; Sekondi School for the Deaf at Inchaban in the Western Region; Ashanti School for the Deaf at Jamasi in the Ashanti Region; Demonstration School for the Deaf and Senior High/Technical School for the Deaf both at Mampong Akuapem in the Eastern Region (as shown in the Table 3.1). These Schools comprised

four basic schools and one Senior High school giving an Accessible population of 1873 students.

Table 3.1 The group of schools that make up the Accessible Population

Group	Name of school	Population
A	State School for the Deaf	325
B	Sekondi School for the Deaf	300
C	Ashanti School for the Deaf	571
D	Demonstration School for the Deaf	374
E	Senior High/Technical School for the Deaf	303
Total		1873

In addition to the students, the research also included headteachers and teachers of the five selected Schools for the Deaf. The population of the Schools for the Deaf was of a homogenous nature because it had similar characteristics running among the deaf respondents and irrespective of their hearing degree, they were all legally deaf and possessed similar academic challenges with uniform composition.

3.5 Sampling Techniques

Purposive sampling is where people or a unit of the population is chosen for study based on a purpose (Leedy and Ormrod 2005, p. 206). Purposive sampling technique was used for the selection of the accessible population. The respondents were intentionally selected for the study based on certain characteristics they possess;

1. Some of the respondents at Senior High/Technical School for the Deaf held vital information to achieving the objectives of the study.
2. The researcher was familiar with some of the respondents and believed that they have the needed information on the teaching and learning conditions of the selected Basic schools.

Purposive sampling technique was used to obtain the accessible population because:

- As a case study, an in-depth study of a particular group with uniform characteristics is very important and the purposive sample helped to attain that.
- Each member of the accessible population possessed essential pieces of information which were needed to achieve the research objectives and the purposive sample made it possible to select such ones.
- The purposive sampling helped the researcher to achieve a fair representational sample size of all the teachers and students in the schools in the various regions.

Sample Size

The accessible population was further sampled and grouped into categories for the purpose of the study.

Category A comprised five headteachers of the selected Schools for the Deaf.

Category B comprised 45 teachers of the five selected schools. The teachers constituted the backbone of the study and so out of 134 teachers of the five selected schools, 45 were selected for the study.

Category C comprised 50 students and the various classrooms. The students constituted a population of about 1873 however only 50 students formed part of the interview. Based on the homogeneous nature of this category, students were selected for interview using the purposive sampling to support the data obtained through observation in 48 classrooms. Some of them were also used for member checking.

Category D comprised two specialists in deaf education; a lecturer at the Department of Special Education, UEW; a former president of the Ghana National Association of the Deaf, and six resource personnel in education. This made a sample size of 110 respondents.

3.6 Data Collection Instruments

Triangulation is very necessary in ascertaining the authenticity of the research (Gay, 1992). Therefore, the researcher employed three different data collection instruments. They were interview, observation and focus group discussion. These instruments were carefully planned to obtain the needed information from the various respondents concerning the methods of teaching students who are deaf and the practice of visual teaching in Schools for the Deaf.

3.6.1 Observation

According to the Sage Encyclopaedia of Qualitative Research Methods (2008), observation is the use of one's senses to look and listen in a systematic and purposeful way to learn about a phenomenon of interest. Observational study is holistic in its approach. This means that the researcher takes data about many aspects of a research

setting and its participants. Certain practices, beliefs, values and classroom phenomena cannot be easily studied by survey, experiment or document analysis and so the researcher observed teaching and learning in the classrooms of the selected schools over a given period. There are two kinds of observation; participant and non-participant. The researcher made use of the non-participant observation.

As a non-participant observer, the researcher observed the classrooms of the selected Schools for the Deaf in their natural setting. The researcher made no effort whatsoever to manipulate or to control the activities of the respondent but simply observed and recorded what happened. The respondents were aware of the presence of the researcher and knew they were being observed. Therefore, to maintain the purity of the setting in its naturalistic state, the researcher gave the teachers a general idea of the research topic but did not inform them what he was looking out from them. Collection of data was made when the researcher was convinced the teachers were relaxed and free to carry out their activities. Not every classroom was observed, nonetheless, 48 classrooms out of the 64, making 75% of the classrooms were confidently observed for 8 weeks.

The researcher visited the selected schools over an academic term on two separate occasions. Series of observations were carried out with teachers and students of the selected schools. These exercises took place during practical lessons as well in order to observe the use of visual teaching in the selected schools of the deaf.

3.6.2 Interview

Any person-to-person interaction between two or more individuals with a specific purpose in mind is called an interview (Lisa, 2008). Fraenkel & Wallen (1996) explain that interviews are taken to find out from people things that we cannot directly observe or notice. They point to the fact that one cannot observe everything, for instance feelings, thoughts, and intentions therefore the need for interviews. There are the structured and unstructured types of interview. The structured is where the interviewer develops a framework called interview guide within which to conduct the interview. The structured interview is where the investigator asks a pre-determined set of questions, using the same wording and order of questions as specified in the interview schedule.

The unstructured interview resembles casual conversations. It may assume the type of informal interview where the interview does not involve any specific type of sequence of questions or any particular form of questioning. The primary intent of an informal interview is to find out what people think.

Interviews were conducted with five headteachers, 30 teachers, and 50 students of the selected schools and three experts in deaf education as well as seven resource personnel in deaf education. It was more of an unstructured interview. With the help of an interview guide edited by my supervisor, the interviews were conducted in a relaxed atmosphere. Except for some teachers of the selected schools who felt uneasy giving out information for fear of victimization, all the interviews conducted with the teachers were on friendly grounds.

In category A, four headteachers and one assistant headteacher of the selected schools were successfully interviewed, retrieving vital information on the history of the school, the current population of the students, information on teachers as well as information on the practice of visual teaching.

In category B, 30 teachers were interviewed and 15 formed part of focus group discussions. At first some of the teachers were not forthcoming with the answers to the questions even though the whole interview was more of a casual conversation. Out of the 30 teachers interviewed, 20 teachers confidently gave out useful information at will.

In category C comprised students, the researcher talked to almost the entire students of Senior High/Technical School for the Deaf in the dining hall one afternoon. However, interviews were conducted with 50 different students. The interview assumed the form of an informal discussion. The students who participated explained their classroom teaching situations and gave assessments of their teachers in terms of visual teaching. Through such interviews, the students were able to freely reveal the actual classroom situations as observations confirmed.

In category D, an expert in Deaf education who is also a veteran lecturer at the Department of Special Education was interviewed. One respondent who holds a PhD in Disability Studies and the former president of the Ghana National Association of the Deaf were also interviewed.

3.6.3 Focus Group Discussion

The focus group is a special type of group in terms of purpose, size, composition and procedures. It is a carefully planned discussion designed to obtain perception on a defined area of interest in a permissive, non-threatening environment. The discussion is relaxed, comfortable and often enjoyable for participant as they share ideas and perceptions. The group discussion is conducted several times with similar types of participants to identify trends and patterns in perceptions (Escalada and Heong, 1988).

Focus group discussion was conducted in four of the five selected Schools for the Deaf namely: Sekondi School for the Deaf; State School for the Deaf; Ashanti School for the Deaf and Senior High/Technical School for the Deaf. The discussion took place in the staff common room where the teachers involved felt relaxed and willing to share their views. Apart from Ashanti School for the Deaf which had five teachers participating, the rest of the schools had between three to five teachers forming part of the discussion.

To keep the session on track while allowing respondents to talk freely and spontaneously, the researcher used a discussion guide that listed the main themes to be covered in the session. The discussion guide served as a road map that guided the researcher to cover the list of topics and to keep the discussion on track. The number of items in the guide was generally kept to a minimum of 12 questions to leave enough time for in-depth discussion. It focused only on relevant research issues pertaining to their perception on visual teaching, what should be taught the deaf, and how. Most of the discussions focused on the use and handle of visuals in classroom teaching and learning. Some of the

respondents also extensively expressed their feelings about their challenges in teaching the deaf.

3.7 Primary and Secondary Sources of Data

Raw data collected through observation and interview were treated as primary data. The information gathered directly answered the research questions. Information retrieved from books, journals and the internet formed the secondary data. It included empirical and theoretical studies of various researchers and authors.

3.8 Administration of Instruments

Several trips were made to the selected Schools for the Deaf. The researcher travelled to the selected schools and individuals to conduct the interviews and the focus group discussions. In each interview, to get the interest of the interviewees, the researcher briefed respondents on the research topic which got them relaxed. The researcher observed the activities of the various classrooms and recorded the needed data using observation checklist (see Appendix B). During interviews with the heads of the schools, the researcher occasionally referred to the interview guide to keep the discussion in focus. With permission from the respondents, a laptop computer and a digital camera were used to record data in the form of photographs to aid analysis and understanding of the situation of deaf education in the selected schools. Photos were also taken of available teaching aids and teachers in the observed classrooms of the selected schools. The researcher used a field notebook to take notes of some important events during the data collection.

3.9 Data Collection Procedures

The data collection was single-handedly done by the researcher because the research could not afford to hire assistants who were literate in Ghanaian Sign Language. The researcher personally travelled to the selected schools to collect the needed data for the study. The researcher either stood by the window or sat at any available seat in the classrooms to observe classroom proceedings. Interview with deaf students were all carried out by the researcher himself. The researcher is literate in Ghanaian Sign Language and therefore did not have much problem in the collection of data. The researcher conducted the interviews in Sign Language with the respondents because majority of the respondents were deaf and employed Sign Language as a medium of communication.

3.10 Data Analysis Plan

At the end of the data collection, there was first the coding of the rough data. This involved grouping the data into various topics that would be presented in the final draft of the research report. Information was grouped under headings in a way that answers the objectives of the research. The content of the research was taken through several drafting and editing before the final draft. Details of these are provided in the next chapter.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF FINDINGS

4.1 Overview

This chapter presents the findings that emerged from the study. It covers analysis and interpretation of data gathered from the observation, interview and focus group discussion. Most of the information entails primary data. However, secondary data from literary sources have been synthesized into the findings to support its authenticity. The presentation has been done mainly in the descriptive approach. Plates/photographs have been incorporated into the presentation to support and give the discussion a better understanding. The findings are presented under sub-headings, in ways that answer the objectives of the research. The chapter begins with the academic challenges posed by current teaching and learning approaches in Schools for the Deaf; investigation into visual teaching and lastly suggestion of how some visual tools can effectively be used to support visual teaching.

4.2 Brief History of Deaf Education in Ghana

The study uncovered that the first idea of a special school for the deaf was started in Ghana around 1957 by an African-American called Dr. Andrew Jackson Foster. He started his missionary activities with the founding of Schools for the Deaf which have greatly contributed to the development of deaf education in Ghana (Lydia Oppong, personal communication; 20th March, 2012). Asare (2009) reports that as Dr. Foster taught the deaf Sign Language communication and the deaf became more literate, he supplemented their education with vocational and trade skills. Today, deaf students rather

go through a more formal education with structured curriculum and systematic approach to teaching and learning. The following information about the schools was gathered from the various headteachers of the selected schools.

4.2.1 Characteristics of the Case Study Schools

1. State School for the Deaf

State School for the Deaf was established in 1966. Currently the school is a day school. It is located at Adjei-Kojo near Ashaiman in the Greater Accra Region. The educational setting is segregated. The school operates the full Ghanaian basic education system consisting of a nursery, primary and Junior High School. It also runs vocational training for the post-basic education students who prefer trade skills to senior secondary education. The vocational section offers skills training in dressmaking and carpentry. At present, four students are enrolled in the vocational section; one male, three females. The current student population of the school is 325 comprising 177 males and 148 females. There are 24 teachers in the school.

2. Demonstration School for the Deaf

This was established in 1964. The school is both segregated and residential. It is located at Akuapem Mampong in the Eastern Region. It has a student population of 374. Out of this, 245 are males while 129 are females. There are 25 teachers in the school and two headteachers. The school has a nursery, primary and Junior High School sections.

3. Senior High /Technical School for the Deaf

This school was established in 1975 with few students' population. Today, the school has a student population of 303. It is a residential school located at Akuapem Mampong in the Eastern Region. It is currently the only government Senior High/Technical School for the Deaf in Ghana. It runs both secondary and Technical School programmes. There are 30 teachers in the school.

4. Sekondi School for the Deaf

This was established in 1971. It is a residential school with a student population of 300. The school can be located at Nchaban in the Western Region. There are 25 teachers in the school and runs full Basic education programmes. It also runs post-basic education programmes in vocational skills where trade skills such as dressmaking, masonry and carpentry are taught.

5. Ashanti School for the Deaf

Ashanti School for the Deaf was founded in 1977 with seven students. Today, the student population of the school is 571. It runs the full basic education courses and has a vocational section where post-Basic education students are taught vocational skills in dressmaking, masonry and carpentry. There are 30 teachers in the school. The school can be located at Jamasi in the Ashanti Region.

4.2.2 Academic Programmes of the Selected Schools

All the primary Schools for the Deaf offer the same Ghana school's curriculum which consists of English, Mathematics, Creative Art, Religious and Moral Education, Natural Science, Citizenship Education, and Information Communication Technology. The Junior High schools undertake the following subjects: English, Mathematics, Religious and Moral Education, Integrated Science, Social Studies, Basic Design and Technology and Information Communication Technology. Except for French and Ghanaian languages, the selected Schools for the Deaf take the same subjects as regular schools. Notwithstanding, the Schools for the Deaf have one year preparation class before JHS which prepares the students to meet the academic expectation of the JHS.

The SHS offers Technical Skills, Home Economics, Visual Arts and General Arts. The various subjects are: Woodwork, Metalwork, Building Construction and Technical Drawing under the Technical skills programme; General Knowledge in Art, Food and Nutrition or Clothing and Textiles and Management-in-living for Home Economics programme, General Knowledge in Art, Graphics, Leatherwork for the Visual Arts; and Economics, History and Christian Religious Studies for the General Arts programme.

The selected Schools for the Deaf use the same syllabus as the regular schools and write the same set of examinations- that is the Basic Education Certificate Examination (BECE) at the JHS level and the West African Secondary School Certificate Examination (WASSCE) at the SHS level.

4.3 Background of the Students

Deaf students in the selected schools are all legally deaf and have different degrees of hearing loss. Even though the degree of hearing loss differs among the students, they are all put in the same schools. Owing to the differences in the degree of hearing loss, learning from classroom lessons and benefiting from written instructions present major peculiar difficulties to individual students. Normally, within Special Education, as Telford and Sawrey (1977) put it, the deaf and hard of hearing are usually differentiated. This is not so in the sampled Ghanaian Schools for the Deaf. Irrespective of the level or degree of hearing loss, deaf and hard of hearing, whether post lingual or prelingual deaf are all put in the same schools. It was realized from the study that in Ghana, most of the students begin formal education when they have far outgrown the average age of three years stipulated by the Schools for the Deaf. A number of reasons were gathered for this problem: some parents delay hoping that their child's deafness may be healed; others are sent to regular schools for some time before the deafness is detected or with the hope that the deaf child may acquire hearing. Financial constraints were also cited for this problem.

4.4 Background of the Teachers

All the 30 teachers interviewed in the selected schools have the minimum qualification of the Ghana Teachers' Certificate 'A'. In all the five schools, there was a teacher who was deaf. A number of the teachers have Bachelor's degrees in Special Education from the University of Education, Winneba. A few have diploma in General education plus Teachers' Certificate 'A'. On the average, many of the teachers have received special training in the handling of special students. However, according to the headteachers,

there were a few number of old teachers who were yet to receive major training in special education. The headteachers admitted that though occasionally workshops are organized for the teachers, these are not enough. 70% of the teachers interviewed were not so fluent in Sign Language. The headteachers admitted that even those teachers who graduated from the University of Education, Winneba who are deemed to be specialists in deaf education struggled with Sign Language. The reason found was that even though their training includes tuition in Sign Language, not much time was allotted to the study so many of the trainees graduated from the university functionally illiterate in Sign Language. This makes communication with the deaf challenging (Mr. Emmanuel Dzan, personal communication; 23rd March, 2012). In all the five schools, specific days were scheduled for the study of Sign Language.

4.5 Discussion of the Main Findings

Objective One: To Ascertain the Current Teaching and Learning Challenges of the Deaf in Ghana

The study set out to ascertain from the selected schools, the challenges that are encountered in teaching and learning. The research question posed was “what are some of the teaching and learning challenges of the deaf?” seeking answers to this question required observation of teaching and learning activities to identify the teaching methods used in the interviews with the teachers, and adopting focus group discussions in the schools to ascertain the findings for this objective.

4.5.1 Teaching methods used in the Schools for the Deaf

Ghana lacks a policy on deaf education (Asare, 2009). Due to this, what is practised in the Schools for the Deaf carbon-copies what is practised in regular schools. Although as Oppong (2003) indicates, what makes special needs education unique or special is the method of teaching which differs greatly from the traditional method of teaching regular students, this is not the case in the selected Schools for the Deaf studied. It was observed that the teachers employ the same traditional “chalk and talk” teaching method which is used in regular classrooms to teach deaf students. The interviews revealed that 60 % (18 out of 30) of the teachers reported incorporating both student-centered and teacher-centered activities in their lessons but that was not the case as observations revealed. This situation contradicts Smith’s (1993) as cited in Avoke (1997) belief that instructions or methods used to teach the deaf must meet their unique needs.

It was observed that some of the teachers use the discussion and explanatory methods in classroom teaching and expect the students to follow the discussion and to participate. The teachers who used the discussion method of teaching interacted with the students through question and answer procedures in which a number of the students participated. This method of teaching was particularly seen in social studies lessons. The teachers explained what they were teaching to the deaf students, virtually repeating most of the sentences in much the same way over and over again till the preferred understanding was attained. Even in such cases, not all the students got the expected understanding. The teachers explained that the students do cooperative learning; the academically strong ones teach the weaker ones who are slow in attaining a required level of understanding.

It was observed that some of the subjects studied in Senior High/Technical School are vocational and Technical in nature so the teachers employed the activity method of teaching. The students received guidelines and a lot of practical demonstrations from the teachers who require that deaf students do either independent or group work. At the Basic school level, the teachers guided the students in most of the instructed activities. Another observation was that in subjects that are theoretical in nature, the teachers adopted body gestures to demonstrate parts of the lesson. One of the teachers admitted that “teaching the deaf is frustrating and daunting and needs a lot of dedication and sacrifice” (Miss Joana Affel, personal conversation; 12th March, 2012). However, it was observed that not all of the teachers found it comfortable to exaggerate their gestures while teaching.

In all of the observed classrooms, the traditional “chalk” and “talk” method of teaching was employed via Sign Language. The teachers “talked” at length during lesson periods, and explained what the students should do via Sign Language. The chalkboard was used enough but mostly to help with the spelling of words or to give exercises. This contradicts Oppong's (2003) view that the traditional means of teaching using the chalk and talk method in regular schools may not straighten up inconsistencies when practised in Schools for the Deaf.

It was also observed that other methods such as the project and the discovery methods of teaching were not used by the teachers at the Basic school level during the research period. Interviews with 56% of the teachers brought out the notion that learning difficulties of deaf students make it difficult for them to practise discovery teaching and

learning methods. 78% of the teachers interviewed agreed that they have occasionally set a class project and executed it successfully but it became a challenge when the students were asked to do independent work or self-learning. One of the teachers said “creativity is always hard to engender because deaf students imitate their peers a lot” (Madam Margaret Vomawor, Interview response; 19th March, 2012).

Observation at Senior High/Technical School contrasted the assertions of the Basic school teachers. At the Senior High level, 67% of the teachers interviewed disclosed that the project method of teaching is feasible with students who are mature enough but cautioned that the projects should be backed by a lot of demonstrations and coaching from the teacher. It was observed that even though teachers of the non-vocational subjects were confident that the project method of teaching results in constructive learning, the practice was inadequate. At the Visual Arts department however, the practice of the project method of teaching was observed during the data collection period. The WASSCE practical work of the Visual Arts and the Home Economics’ students had begun at the latter part of the observation period and so observation of the students’ project works was made.

Interviews with teachers revealed that hands-on experience was an effective learning strategy which helps the deaf to commit lessons to memory. The teachers’ responses supported a popular Chinese proverb “what I hear I forget; what I see, I remember; what I do I understand” (as cited in Anderson, 2012). As Dale (1969) explains, the teaching method which involves learning from information presented through verbal means or

even verbal symbols only, is least effective. The most effective methods involve concise, purposeful learning experiences through means such as hands-on or field experience, manipulatives, active participation, teacher demonstrations, relevant meaningful examples and the use of pictures and diagrams as seen in Plate 4.1. These practices offer deaf students a touch of reality and practicality.



Plate 4.1 Students hands-on experience of the WASSCE practical examination

Even though the activity and the project methods were used by some teachers in the Visual arts and Vocational skills departments, the situation was different at other departments such as the Social Studies and the English departments. In most English Language lessons observed, the teachers instructed deaf students to read verbatim from their English Language textbooks. Some of the deaf students were able to read intelligently via Sign Language but made little meaning out of the text. It was observed from an experiment conducted by the researcher that on the average, 58% of JHS 2 and 3

students as well as SHS students of the selected school could read fluently word for word but their interpretations of the read text were misleading. Clarifications from the teachers revealed that Sign Language has its own rules and structure which are different from the rules and structure of English Language therefore using it to teach or learn other language poses problems. With its own setbacks as a mode of communication, Sign Language is limited in vocabulary. For this reason, teaching and learning becomes a challenge when the understanding of a subject matter depends on the meaning of certain key words Sign Language does not make provision for.

4.5.2 Problems of the use of English Language

Interviews with six teachers of English Language and observation in the schools indicated that the use of Sign Language to learn English Language is challenging. All the six teachers reported that the teaching of English Language to the deaf is time consuming. “A lot of explanation is needed to make the deaf student understand a fairly simple passage” (Miss Francisca Danquah, personal communication; 14th March, 2012). The explanation given by the teachers over this challenge is that English Language is a phonic language which the deaf find difficult to comprehend. From observation, deaf students found it difficult to take up phonological words as in English Language to memory and this supports Marschark and Mayer's (1998) view that the deaf finds it difficult to employ speech-based codes in memory.

What emerged from the observation also supports Easterbrooks and Stoner's (2006) assertion that the deaf will have difficulties in acquiring receptive and expressive spoken

language skills. The observation was that English Language posed difficulty in the study of the language itself and in its use in other subjects. The teachers' interviews, supported by observation of the selected schools revealed that deaf students had reading problems. It was observed that where the deaf student could read, the reading was done with difficulty even with the use of Sign Language; the general vocabulary was limited and the desired understanding was not achieved. Comparatively, the reading ability of some deaf students in class six, as the observation revealed, was far below their expected age. In all the five schools studied, the deaf faced difficulty in the use of syntax in writing. They found it difficult to match their understanding of the spoken language with the meaning Sign Language presents.

It also became known from the interviews with the teachers that postlingual deaf students are able to perform averagely better in reading and comprehension than prelingual deaf students. The reason gathered from the teachers is that the postlingual deaf may have residual hearing which enables them to lip read, imagine or understand words. The teachers of English explained that since the mode of instruction for all the other subjects largely depends on English Language which the deaf learn with difficulty, general performance in all subjects is affected because the understanding of such subjects will have to be expressed in English Language. This makes a lot of sense from the claim of Turnbull et al.(1995) that deaf students are generally academic underachievers even in mathematics. This is because the mode of instruction for mathematics still remains in English Language.

The interviews with the teachers of English revealed that since English Language is expressed using Sign Language among the deaf, the students encountered disparities in constructing meaning. For example, the teachers explained that the word “repeat” has the synonyms “again” and “once more” in English Language. However, in Sign Language, only one sign mode is given to mean all the nuances of the word “repeat”. Therefore deaf students find it difficult to understand the different contextual uses of synonyms of words. The teachers also added that homographs are also a difficult aspect of English Language deaf students deal with.

The teachers of English further explained that most English Language words are rendered literally in Sign Language. The problem, as the teachers explained, is that the meaning of the words may be misleading when the deaf understand them literally using Sign Language. For example, the teachers explicated that a statement such as “pour your heart out to God” may be taken literally to mean pouring out the heart as though it were water to God. Likewise, a statement such as “draw close to your friends” would mean to draw (as in drawing a picture) and to close (as in closing a door) to your friends. The teachers reported that when English Language words are taken literally in Sign Language, they do not make any sense to the deaf if not first explained to them.

The interviews with the teachers of English further revealed that Sign Language has its own use of proverbs and metaphors although this is purely cultural among the deaf. The challenge, as the teachers explained, is that expression of proverbs, idioms and metaphors in English Language may mean differently when interpreted in Sign Language. The

teachers believed that the deaf may not fully understand idiomatic expressions and phrasal verbs as used in regular textbooks. Idioms such as “grown wings” and “beating about the bush” found in their English reading textbooks pose a challenge to an average deaf student to understand. Further interactions with the teachers revealed that Sign Language uses words more in denotation than in connotation. The teachers of English further explained that when two or more words have the same sign mode, problems in meaning may occur. For example the words *had*, *has*, *have* and *having* have one sign mode in Sign Language. Therefore, a statement in Sign Language which employs “have” in sign mode would have several possible implications.

Another problem the teachers brought out is that Sign Language does not make provision for aspects of tenses. Therefore *go*, *going*, *went* and *gone* will all have the same sign mode. In writing, the deaf is likely to replace the use of *went* with *go* since they both have the same meaning in Sign Language. Much the same problem was obtained from words which have the same spellings but mean differently in pronunciation. For example the teachers explained that the word “refuse” (as in indicating unwillingness) and “refuse” (as in garbage) have the same spelling but refer to different things and are pronounced differently. The deaf will not understand the difference in usage because they cannot hear the pronunciation and the Sign Language they use is not a spoken language. The teachers added that such similar words would cause confusion to deaf students mainly because the same written word changes meaning in pronunciation, a skill deaf students are unable to acquire.

Another revelation from the interviews was that English Language has complete sentence formation while Sign Language uses what can be termed as “telegraphic sentence” formation. For example the sentence “why didn’t you come to school yesterday?” translates into “you not come school yesterday why? The teachers said this situation is a key fundamental problem deaf students have to grapple with as they seek lessons taught to them in English Language. The crux of the matter is that what they are taught to read is not what they “speak”.

Interviews with the teachers of English also brought out that some deaf students may never have heard sound before therefore describing sound in the context of lessons taught them may not be well understood. Expressions of sound such as “roar” could be misleading to the deaf. For example an examination question such as “*you heard a roar around your vicinity after school one day, describe what happened afterwards*” will not be well appreciated by the deaf since they may not understand how interesting or terrifying the roar might be. The teachers of English reiterated that this situation underlies why deaf students fail English Language and other reading subjects at both BECE and WASSCE. The teachers of English added that even if deaf students are made to understand lessons, reproduction in English Language becomes a major challenge because of the difficulty it poses to the deaf.

Further interviews with the teachers showed that Sign Language is not a watered-down version of English Language; it does not depend on words of English Language but rather expression of meaning and ideas represented in a language. However, it was clear from

these interviews that the teachers of English themselves were not fluent enough in Sign Language to be able to point out some of these disparities identified between Sign Language and English Language to their deaf students. The fact that Sign Language itself is limited in terms of English Language vocabulary seemed to worsen the teaching and learning outcomes in all the 48 classrooms the researcher observed. Since English Language requires spoken enforcement for better assimilation, students who are deaf would continue to have difficulty learning and using it in their education.

Another problem that needs resolving is that deaf students use the same regular textbooks the Ghana Education Service (GES) supplies to all schools including those for the deaf and expect effective use of same in classroom lessons. The fact that English is the prescribed language of the textbooks and teaching in Ghana logically indicates that deaf students have difficulties in reading and understanding these regular textbooks that the regular school curriculum prescribes. This validates the need for this and further research to inform the GES and Ministry of Education of the challenges of deaf students in Ghana who are expected to excel and compete on the same global market as their hearing peers in all fields of endeavour.

4.5.3 Problems identified with the use of regular Curriculum and Textbooks

The fact that Schools for the Deaf use the same curriculum as regular schools in Ghana means that deaf students in basic and secondary schools are taught the same number of subjects (except French and Ghanaian Language) and are expected to have the same level of performance with their hearing counterpart. This situation contrasts Oppong's (2003)

view that students who are deaf should have, at least, an adapted form of the regular school curriculum to help them meet some academic standards. As observed in the study, the curriculum used in Schools for the Deaf is neither different nor is it an adapted form as Oppong propounds.

The interviews and the observation also brought out the fact that the Schools for the Deaf have to meet the same standards and expectations required of their regular counterparts. In effect, the curriculum situation in Schools for the Deaf studied only mimics the general education curriculum described by Turnbull et al. (1995) one with respect to meeting the same standards and expectations required from teachers and students as if they were without exceptionalities. The curriculum should be differentiated to allow for special or related services and teaching methods to be used to raise the standard of deaf education in Ghana.

Assessment of challenges identified with the use of same textbooks designed for all schools gives no consideration for the needs of the deaf who mainly learn through visual means. It was observed that the use of the English as the sole medium of instruction in writing regular textbooks creates basic academic problems for the deaf in particular. The interactions with the headteachers of the selected schools explained that even though the GES has a Special Education division, there is no recognized policy on deaf education. They argued that there are no formal handed-down instructions governing deaf education and so the strategies for teaching deaf students have been those the teachers acquired from their teacher teaching institutions.

Discussions with some teachers whose qualifications included degrees in special education from the University of Education, Winneba also revealed that the training they had was more theoretical and so they face some challenges as teachers of the deaf. As one specialist in deaf education said, “such teachers come out of school without any special teaching method for the deaf and most often than not, their Sign Language proficiency is below satisfactory” (Mr. Samuel K. Asare, personal interaction; 26th March, 2012).

Additional problems were associated with examinations. The reality is that deaf students write the same sets of examinations as their hearing counterparts. The only concession the West Africa Examinations Council (WAEC), which is the only examining body in the country, gives deaf students is to extend the duration of the examination by a few additional hours to enable them finish the exercise. Another problem is that questions and assessment for BECE and WASSCE are based on the approved syllabus the WAEC submits without any consideration of peculiarities of the deaf. This creates an unfair premise for the deaf who eventually may not perform creditably due to the language hurdles identified by this study.

Even in examination halls, it was realized that the deaf find it difficult to understand some aspects of the written English texts but they cannot communicate any of their difficulties to any of the hearing invigilators because they do not “speak” Sign Language. When deaf students are able to successfully complete their examinations amidst such English Language difficulties, it is hearing examiners who may not appreciate the

challenges deaf students face and expect all scripts to exhibit the expected level of language attainment who mark their scripts together with those of their hearing peers. Written language deficiency of the deaf is enough reason for them to fail these external examinations which also impede their academic and career achievements.

The headteachers revealed that a number of fora had been held and a number of petitions sent to the appropriate departments of the Ghana Education Service for thorough review and consideration of deaf education with respect to such BECE, WASSCE and other external examinations but this, according to the headteachers, had yielded no fruit.

It is also worth mentioning that the issue of most deaf people in Ghana not furthering their education after basic school came out of these personal communications with the study respondents. According to them, the few who pass through the Vocational and Technical departments of the basic schools and SHS do not acquire any tangible employable skills after completion in view of the enumerated problems the study has identified. This situation gives credence to the claim of Easterbrooks and Stoner (2006) that an average child who is deaf completes second-cycle education functionally illiterate, with considerable delays and variances in written language. This problem is also compounded by the observation that teaching and learning in the classrooms of the Schools for the Deaf encounter major challenges in terms of the use of curriculum, textbooks and the strict reliance on English Language as the mode of formal instruction, without consideration for the learning difficulties of the deaf as well as the effects of other multiple handicaps on deaf students which make them access school education with

difficulty. The premise is that their hearing disability and other impairments pose serious academic challenges that require resolving. Further research is therefore required to assess how these inputs or factors impinge on deaf education and what measures could be used to make access and quality education available to deaf students.

The fact is that deaf students deviate from what is expected in general education such that their hearing disability significantly interferes with their written communication and educational performance. Even though Telford and Sawrey (1977) believe that deficiencies in language among individuals with hearing impairment are related to deficiencies in intellectual abilities, the conviction that deaf students are not stupid academically persist among deaf education specialists. One specialist consulted explained to the researcher that the deaf is not below intelligence nor do they function cognitively below normal abilities, generally, making it necessary to help them increase their educational achievement through whatever means possible.

With respect to the current educational system run in Schools for the Deaf, 83% (25 out of the 30) of the teachers interviewed and data obtained through observation of teaching and learning in the 48 classrooms in the five selected schools revealed that deficiencies in teaching strategies present additional teaching and learning challenges to the students in the various Schools for the Deaf. In line with Objective One of the study, it was deduced that other factors that account for teaching and learning challenges in the Schools for the Deaf include the following;

1. Majority of deaf students have short attention span. They forget easily and may lose focus or sight of a discussion easily in the classroom. It is difficult for deaf students to stay in one place for long hours especially those at the primary levels. Their characteristic short attention span has serious implications on the students' performance in writing, reading and even doing specific school work. Concentration is low relatively so they lose focus of classroom discussion easily particularly where uninteresting or abstract discussions are involved. A lot of time goes into explaining the use of words in different contexts described in the textbooks. This slows down the pace of teaching and learning and so deaf students lag behind their hearing counterpart in many subject areas.
2. Forgetfulness is very common with deaf students and recalling is basically a difficult thing among them. As Marschark and Mayer (1998) indicate, deaf individuals have short memory spans and tend to remember less in other short-term memory tasks than in hearing peers.
3. Avoke (1997) indicates that the hallmark of knowledge is one's ability to generalize. Therefore to generalize or to transfer knowledge is an important area for all students. However deaf students find it difficult to generalize. Many deaf students experience severe challenges in transferring learning experiences into other subject areas or to other contexts. Because transfer of knowledge is difficult for the deaf, their abstract thinking ability also seems to be either impaired or low. Deaf students therefore prefer direct and same routine even in sentence formation,

implying that they depend largely on what their teachers or their peers tell or use all the time.

4. Incidental learning such as where a hearing person may incidentally learn through music, a speech from a passer-by or even from television may not be possible in the case of deaf people. Deaf people receive “oral” communication in Sign Language. Apart from what they personally acquire through sight, they are mostly told of something via Sign Language of which the information may be lost in detail or even be misconstrued.
5. The deaf is a visual/spatial learner. The use of images, pictures, colour and other visual media helps them to understand what they learn. Students at the basic level are especially art inclined. At Senior High/Technical School for the Deaf at Akuapem Mampong, the Visual art department had the largest number of students which is an indication that the deaf is visually/spatially intelligent. Owing to their hearing impairment, classroom teaching and learning that involves a plethora of “oral” instructions does not benefit this visual learner. Any classroom teaching that is mainly oral makes learning difficult nearly impossible for the deaf because they cannot hear. As it stands, deaf students in Ghana go through frustrations given the current teaching methodology generally adopted in the Schools for the Deaf.

6. Majority of deaf students were observed to be slow learners. As the teachers confirmed their retention rate is low and “a topic which may take an hour or two to teach to regular students may take weeks with the deaf” (Mr. Francis Ackah, personal communication; 26th March, 2012). Due to deaf student’s inability to grasp abstractions and concepts wholly, teaching must be targeted and should be broken into smaller manageable units. As the observation revealed, a section of the teachers of the deaf practise project method of teaching; the majority apply the traditional method of “chalk and talk teaching even in classrooms of aurally impaired students. This is simply inappropriate as Easterbrooks and Stoner (2006) suggest. This is because information presented in “verbal” modes does not result in the retention deaf students need.

Even though nearly all the teachers were much aware of the academic consequences of deaf students’ handicap, they did not practise any special teaching that involved students in the teaching and learning process to strengthen knowledge retention. Although some action-learning techniques that result in higher retention among deaf students were noticed in some lessons, the practice was very insignificant. The rhetoric about teaching methods which are sensory based being more likely to give deaf students real-life experience was heard among the teachers but this was not observed in practice.

7. The teachers generally struggled with Sign Language. Personal interactions with 73% of the teachers indicated that they were not very fluent in Sign Language and

therefore interpretation of some technical processes posed serious challenges to the teachers and their students. The worse scenario was where teachers who had no major training in Sign Language needed to interpret terminologies and innovative processes in their lessons. As Henley (1992) suggests, teaching in classroom of the deaf should appeal to their sensory stimulation so that information given to them would largely be visual mainly because the eye replaces the ear in the classrooms of the deaf. This gives credence to this study which investigated the practice of visual teaching in the selected Schools for the Deaf in Ghana.

4.6 Objective Two: To Investigate the Practice of Visual Teaching in the Schools for the Deaf

Proven that students who are deaf are visual learners (Easterbrooks and Stoner, 2006), it is imperative to know if the current teaching practices adopted by the teachers in the selected schools measure up to the deaf student's visual experience. Therefore the research question posed was "To what extent is visual teaching practised in the selected Schools for the Deaf?" This can only be ascertained by investigating the practice of visual teaching in the selected Schools for the Deaf.

4.6.1 Teachers' knowledge about visual teaching

Interactions with the teachers supported with observation revealed that majority of the teachers in the selected Schools for the Deaf are aware of the learning difficulties of the

deaf and have knowledge about visuals. They agreed on the fact that deaf students are visual learners as Easterbrooks and Stoner (2006) use the term “visual people” to describe deaf students. All the 30 teachers interviewed supported the notion that the hearing impairment of the deaf requires communication modality skills. They further indicated that teaching strategies should be adapted to meet the hearing handicap of deaf students. The teachers conceding the visual teaching need of deaf students agreed with Gardner's (1993) claim that visual learners process information most effectively when the information is seen visually.

Majority of the teachers were fully aware that the pedagogical techniques of a professionally qualified teacher of the deaf should meet the special needs of the deaf by way of using appropriate and preferred mode of visual communication. The teachers also admitted that the planning, implementation and evaluation of instruction should include selection of appropriate instructional materials and resources and development of visually inclined teaching-learning materials. The teaching-learning materials should meet the special needs of deaf students as Oppong (2003) argues, such that the interest and participation of the deaf in the teaching and learning process would be sustained; this the teachers believed can only be achieved if the teaching-learning materials are visual enough.

The teachers supported the notion that special needs of the deaf require teaching that incorporates more visual tools than it would be for their hearing counterparts. The headteachers concurred that pictures and diagrams are usually useful visual aids for all

sizes of classes, provided they are well designed and appropriately used. They agreed that depictions such as pictures, paintings, drawings, charts, graphs, flow charts, and circles, help to teach effectively to the deaf who think visually. The headteachers' assertions affirm the claim of Stokes (2001) who supports the fact that deaf people are visual thinkers. The headteachers also attested to the fact that visual aids can be used to organize lesson or presentation; provide interest and motivation for students; increase retention of information and learning; save instructional and preparation time because they can be reused; aid Sign Language communication and stress important points.

Findings from observations reveal that even though majority of the teachers have knowledge of the concept of visual teaching, their knowledge was not put into practice. Interviews with them brought out that their knowledge about visual teaching was rather casual in practice; they do not fully appreciate how visual teaching should be practised. The focus group discussion particularly helped to reveal that majority of the teachers only think of visual tools or visual teaching as either decoration displayed on the walls of the classroom or just the cutting of pictures from magazines or drawings on cardboards and showing them to the class. Even with such knowledge of visuals, the classrooms of the selected schools paradoxically lacked diagrams, paintings and pictures; only few numbers of outmoded posters and past calendars hung loosely on the classrooms.



Plate 4.2 Examples of non-projected visual tools

Probing further, it was observed that at the basic school level teachers however, use visuals in teaching but in the conventional means of displaying drawing on cardboard. The researcher's inquiry into the practice of visual teaching helped to group the visual tools into two main categories; non-projected and projected visual tools. The non projected visuals include real objects, charts, models, photographs, blackboard sketches, practical demonstrations, drawings, paintings and diagrams and illustrations on substrate while the projected visual tools include digital projections of visuals such as the use of computer and internet facility. It was observed that majority of the teachers were familiar with non projected visuals (see Plate 4.2). Although their knowledge was more of the non-projected visual tools, the teachers focused only on the use of pictures and illustrations to constitute visual teaching as shown in Plate 4.3.



Plate 4. 3 Illustrations and pictures that facilitate visual teaching

4.6.2 The use of non-projected visual tools

Observation revealed that the teachers at the nursery and the kindergarten classrooms practised a measure of visual teaching using the non-projected visual tools as a support to teaching Sign Language to beginners; to enforce Sign Language and to teach rudimentary elements of the environment such as trees and houses. Observation revealed that the nursery teachers used illustrations and pictures of fruits, fish, tree, table to teach basic knowledge to deaf pupils in the selected schools. Visual teaching in nurseries and kindergartens of the selected schools was observed in practice more than what was later observed at the primary and the JHS levels. For instance, in State school for the Deaf located at Adjei-Kojo near Ashiaman in the Greater Accra Region, activities of Kindergarten One classroom supported the use of visuals; the class was generally lively that particular day and the pupils contributed effectively to the discussion.

The Kindergarten One teachers posted a colourful illustration of the extended family system and taught the pupils the subject on family and responsibilities. At that same school, a good practice of visual teaching was observed where very colourful pictures were posted on the blackboard of the nursery classrooms to teach the deaf basic items as shown in Plate 4.4. Everything taught in the lesson focused on the picture which helped the pupils to understand the lesson quickly. The argument of Tibi (2008) that explains that pictures are able to communicate a lot of information in a small amount of time was much sustained.

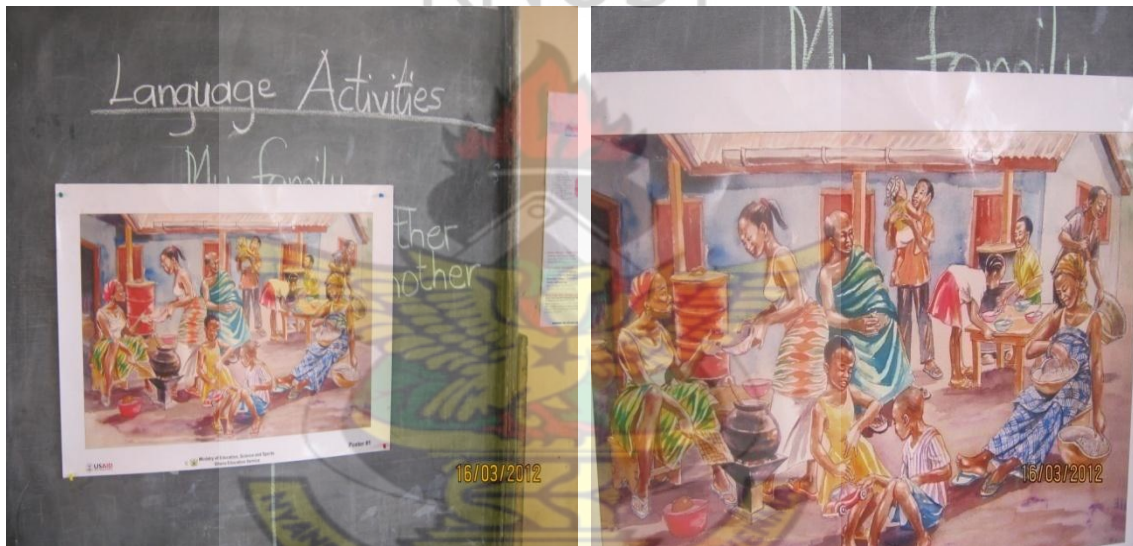


Plate 4.4 Colourful pictures and illustrations used to teach basic items

It was observed that in combining the images of a picture, a basic "visual grammar" is used, namely a grammar of visual associations and distinctions that Tibi (2008) calls *relative positioning*. This is because the relative position of the images can communicate meaning. In other words, for images in a picture to be meaningful, they must be positioned well and be combined with explanations. As interactions with teachers later brought out, visual grammar is aimed at strengthening the memory and because this

memory has a stronger structure, it allows students to visualize associations between the different elements they have learned with ease. Further observations made in the classrooms revealed that the practice of visual teaching involved, “verbal” explanation which accompanied the pictures or the illustrations. This revealed that visuals cannot replace explanations completely but can offer a support that will allow better memorization of what is taught.

Another observation made in the kindergarten and nursery classrooms was that the teachers considered the choice of visual tool they used for their lessons. Through interactions, the teachers explained that visual tools in general are of value to most types of students however, for effective visual teaching, the age and knowledge level of the pupils must be a factor for the selection of the visual tools. They also added that the choice of any visual tool should be done with prudence considering deaf students’ difficulty to understand any information that does not allure to their visual literacy experiences. One respondent said, “Anytime you choose a visual tool, the age and the visual literacy of the students should highly be taken into account” (Mr. John Mensah Sarbah, personal interaction; 26th March, 2012).

Interactions with resource personnel in education further revealed that when teachers teach with “rote memory” approach they have the risk of separating memorization from understanding which should be the cement that strengthens and gives its use to the memory. They argued that when visuals are removed from the memorization process, it significantly weakens the memory. They further explained that visual tools move from a

linear memory (rote memory) toward a visual, bi-dimensional memory and do not only present in a visual form, the information to learn, but also the relationships between the elements learned.

Investigation of visual teaching in the nursery and the kindergarten classrooms further revealed that the teachers do not only use pictures and illustrations but also gestural demonstrations to teach to the deaf as shown in Plate 4.5. As the researcher observed, the teachers engaged the nursery pupils in a lot of activities. The teachers would jump, hop, turn round, frown and smile to explain lessons to the nursery pupils. In personal interactions with the researcher, the teachers explained that their demonstration of gestures and movements as well as the paintings and drawings they use in their lessons carry important symbolic messages that often do not have verbal equivalence.



Plate 4.5 The teachers demonstrate to facilitate visual teaching

The nursery teachers reported that they occasionally support and pay particular attention to weaker pupils especially those with multiple handicaps in order to have hands-on experience (see Plate 4.6). The teachers' actions support the argument of Schulz and Turnbull (1984) which explains that art experiences and activities frequently require movement such as finger painting, sketching and sometimes cutting and therefore teachers should be tremendously flexible when making needed adaptations for handicapped students in order to avoid accidents.



Plate 4.6 Weaker students receive more attention from the teachers

The pupils were able to touch things and to create things with their own hands through visual learning. From this finding, it can be said that hands on experience helps all visual learners to create memories that they can later refer. One thing the researcher observed that was not often seen during the study was the presentation of physical objects such as fruits and kitchenware. The kindergarten teachers acknowledged that using physical

objects as visual tools are equally important especially if they are natural and the students can feel them. It must be stated that even though visual teaching was seen to be practised in the nursery and kindergarten classrooms, it was not the case for all the selected schools especially in the primary and the JHS levels as further observations revealed.

When the teachers were engaged on one-on-one interview, the nursery and the kindergarten teachers spoke of involving the students in creative art. They explained that creative art lessons of the kindergarten allow a lot of drawings and this hones the drawing skills of the pupils. As Easterbrooks and Stoner (2006) believe, students are able to build on their old schemata and construct new ones from drawing experiences. In this innovative technique, each student, according to the teachers, is made to draw or engage in what the researcher terms as language art. The teachers added that the drawings allow the students to express themselves and to communicate their innermost feelings and ideas and help the deaf to grow intellectually, physically, socially and emotionally.

It was observed that the students in the kindergarten used colour pencils and crayon to colour, though not uniformly, every outline they make of the drawing. One of the teachers acknowledged, “Deaf students exhibit talents in visual arts especially drawing” (Madam Sabina Fordie-Adobor an interview response; 6th March, 2012). The teachers’ description of deaf students’ ability to draw aligned with the aesthetic theory of imitationalism where an object or a figure is almost perfectly replicated in drawing (see Plate 4.7).

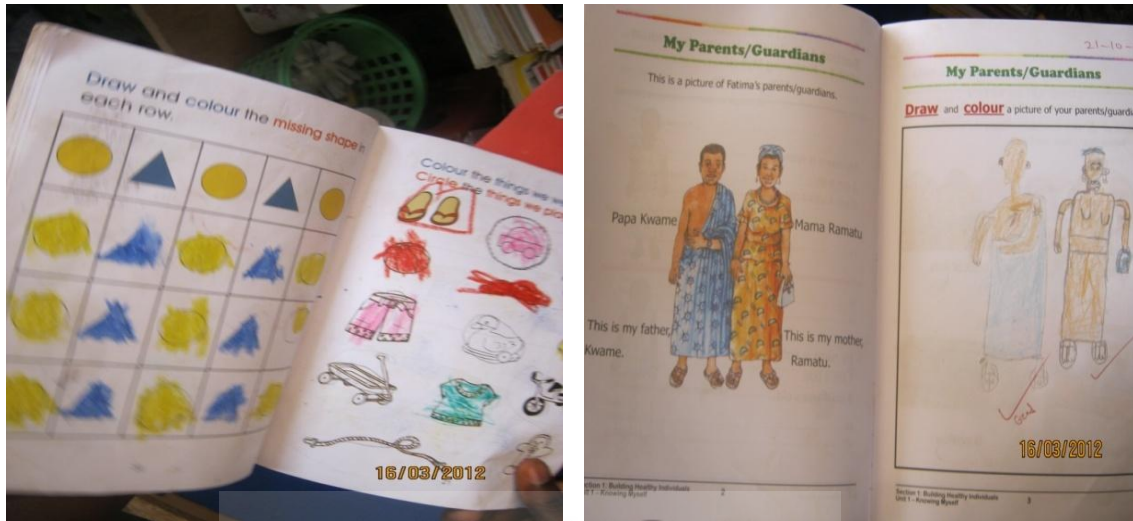


Plate 4.7 Deaf students' ability to imitate drawings

Through personal interactions, the nursery teachers revealed that visual art itself can be a visual language that is not only used as a visual tool but also as an academic subject. This affirms Eubanks' (2011) assertion that art can be a powerful tool from the periphery of the curriculum toward the core of learning for all deaf students. Eubanks (2011) has also already confirmed that visual art is an important form of communication. The teachers agreed that if the visual arts are effectively incorporated in classroom lessons, subjects deaf students find difficult could be overcome.

Questioning in an interview how that could be carried out effectively in other subjects, one professional in art education clarified that art can be used to teach science as it relates to concepts of texture, colour, pattern, space and form. He added that specific topics can be interrelated through science and art and in mathematics; concept of form and shape can also be developed through art. As Schulz and Turnbull (1984) indicates art can also

be used to teach counting, numbers, graphs, measurement, symbols, fractions, proportions and time.

It was obtained from the social studies teachers of Senior High/Technical School for the Deaf at Akuapem Mampong in the Eastern Region that the visual arts can as well be applied in social studies curriculum. For example, the teachers explained that many deaf students who are unable to read from textbooks can learn concepts about foreign customs by analyzing pictures and other visual media and demonstrate their knowledge of these customs by constructing collage, murals and props for a play. This instrumental strategy, as one professional in art education added, should not be used in a singular fashion but rather combined with other strategies into a multisensory approach that is particularly appealing to deaf students' sense of sight. This supports Smith (1995) assertion that the use of art as a teaching tool for deaf students is recognized as a viable, effective tool.



Plate 4.8 Drawing offers opportunities to develop thinking abilities

Further personal interactions revealed that the perception of the nursery teachers on the use of visual art in deaf education supports Smith's (1995) argument that visual art strengthens memory and helps in cognitive development of deaf. As Plate 4.8 indicates, drawings of deaf pupils offer opportunities to develop their thinking abilities.

The researcher observed that even though the teachers recounted numerous importance of visual art in deaf education, the use of it was not practised enough in the selected Schools for the Deaf. Even at the nursery and the kindergarten classrooms where the teachers incorporated visual tools in their teaching, the concept of visual teaching was not a continuous pedagogy. The only art activity in the nursery and kindergarten classrooms was drawing as part of creative art lessons. The making of art work such as paper art and clay work was not practised during the period of observation. Interviews with the teachers later confirmed that the practice of art making, apart from drawing, is not often practised in the selected Schools for the Deaf.

Observation in the classrooms of the upper primary and the JHS revealed that the teachers do not incorporate enough art or visual tools in teaching. When the researcher inquired from the teachers about the use of non projected visual tools such as pictures and illustrations in teaching, the impression was that they do not often use them. The major non projected visual tool the teachers agreed they often used was gestural demonstration and observation confirmed that they employed a lot of gestures and body movements in their lessons.

At State School for the Deaf for example, it was observed that the few visuals in the classrooms were very old and almost out of use. It was also observed that though the school may have a number of old but useful illustrations, the teachers do not use them to teach. Inadequate presentation of visuals in the Schools for the Deaf even at the lower primary was a general observation. Out of the 30 teachers interviewed, 28 (constituting 93%) of them did not use visual tools often in their teaching.

When the headteachers were interviewed why this deficit of visual teaching in the classrooms of visual learners, it was revealed that although most of the teachers are accountable to their heads, there is no proper monitoring and supervision on the part of the headteachers to ensure the preparation and use of visual tools to teach. Owing to this, most of the teachers find it difficult to appreciate the amount of knowledge that would be gained from the use of visuals in teaching. Although they acknowledged the importance of visual teaching in deaf education, they take for granted the positive effect it would have on classroom teaching and learning.

The inadequate visual teaching at the primary and JHS levels of the selected schools was not different from that of the SHS. The teachers did not practise enough visual teaching. During the interviews, the teachers told the researcher that they occasionally incorporate visual tools in teaching only when they deem it necessary to do so. The Assistant headmaster of Ashanti School for the Deaf at Jamasi in the Ashanti Region for example, was of the notion that his teachers do not use visuals in teaching because the resources are lacking. The Assistant headmaster was also of the view that visual teaching is not a

policy that requires strict enforcement. Interrogation with him revealed that he acknowledged the importance of visuals in teaching the deaf but stressed that their use depended on a particular subject or topic of the lesson.

4.6.3 The use of projected visual tools

When the use of projected visual tools such as computer and TV in the form of digital visual displays, power point presentations and the use of cartoons and animations were probed, the teachers showed little knowledge of them as direct teaching materials. In all the selected Schools for the Deaf, such visual items existed but were not used as visual teaching tools. State School for the Deaf at Adjei-Kojo in the Greater-Accra Region for example, has a computer laboratory although it was completely out of use (see Plate 4.9).



Plate 4.9 Computer laboratories in Schools of the Deaf are out of use

Television sets were available in all the five selected schools but they were purely used for entertainment purposes. Not much was observed on the use of projected visual tools as teaching-learning materials. Responses given by the students in interviews buttressed

the fact that the teachers do not practise visual teaching and when they do, this does not adequately meet the needs of deaf students. Interaction with 78% of the teachers revealed that they face certain challenges with the use of visuals in teaching.

4.6.4 Challenges encountered with the use of Visuals in Classrooms of the Deaf

It was realized from the interviews with the teachers that 57% (or 17 out of the 30) were of the notion that grown-up students do not need a lot of visuals. They explained that as deaf students mature, the value of visual teaching diminishes implying that visual teaching is appropriate only for school children at the lower levels. This belief of teachers contradicted Easterbrooks and Stoner (2006) that visuals seem important to all deaf students in different age groups.

Interviews with the headteachers revealed that the syllabus does not show sufficient guidance on what teachers are expected to do to incorporate visuals in teaching. The headteachers indicated that some of the teachers might want to use visuals because they are aware of their benefits to the special needs of deaf students but lack the guidance needed for a successful incorporation. The teachers outlined a number of challenges encountered with the practice of visual teaching in the selected Schools for the Deaf.

The teachers interviewed complained that visual tools in the schools are inadequate. They explained that the schools do not provide such teaching-learning materials and that they have occasionally procured visual tools by themselves to support their teaching in class. The observation however, was that all the selected Schools for the Deaf had some

teaching-learning materials such as posters and wall charts that the teachers did not make use of. The researcher observed that such teaching-learning materials have been left to gather dust in the offices of the headteachers. State School for the Deaf for example had a number of posters, charts and flash cards that were not put to good use by the teachers.

The teachers interviewed were of the notion that the use of visual tools in teaching consumes a lot of time. They argued that the learning difficulties of the deaf already requires attention and demands a lot of explanation therefore, incorporating visual tools would be time consuming and overly stressful for one teacher to handle. The teachers further expounded that as teachers of the deaf, they already lag behind in many subjects and are under pressure to catch up. Incorporating visual tools will only impede them from finishing their terms' scheme of work, the syllabus on the whole and eventually negatively affect deaf students academically.

Deductions from the interviews, observation and the focus group discussions established that 94% of the teachers of the selected Schools for the Deaf had had no training to use visuals and so they feel inadequate to practise visual teaching. The teachers also reiterated that the concept of visual teaching was not a component of their teacher training education. They explained that they did not receive any major training with respect to knowledge of basic visual teaching skills such as simple sketching and lettering and so they find it difficult to practise them.

Deductions from the interviews showed that the teachers acknowledged the importance of basic visual art skills such as simple sketches and lettering in classrooms of the deaf. However, the idea was not to become artists before they could incorporate visuals in teaching. Although the teachers agreed to the fact that Information Communication Technology (ICT) provides a fine opportunity for them to manage visual teaching strategies in their lessons, they reported that ICT facilities are lacking in the Schools for the Deaf. They further reported that due to this challenge, they had occasionally bought already-made visuals for the purpose of their lessons. However, one professional in Art education explained to the researcher that it is imperative for the teachers of the deaf to acquire the skills of making visual aids themselves since already-made visual aids may not provide the full details required for a lesson. The professional added that visual aids which directly appeals to the visual literary of the deaf are able to achieve the purpose of visual teaching in Schools for the Deaf. He further explained that proper planning of visual teaching can help teachers of the deaf to define their teaching objectives and to clarify in their own mind, what they want to communicate to deaf students.

4.7 Objective Three: To suggest some Visual Tools and how they can be used effectively to facilitate Visual Teaching

Discussion of findings linked to Objective Two of this study show that visual teaching is not adequately practised to meet the needs of the deaf in the selected Schools for the Deaf. For this reason, the researcher makes suggestions of how certain visual tools such as flashcards and wall charts can be used effectively to facilitate visual teaching in

Schools for the Deaf. Plate 4.10 shows an example of the blackboard that can be used for blackboard sketches.

1. The blackboard and blackboard sketches



Plate 4.10 The Blackboard can be used for classroom sketches

Blackboard sketches are illustrations used to express an idea in a quick and simple pictorial form. The purpose is to arrest attention, stimulate interest and co-ordination between “verbal” and visual aspects of learning. They can help teacher of the deaf to deliver lessons effectively. To accomplish this, teachers of the deaf must always make sure that deaf students can see the blackboard and must encourage students to complain if they cannot see what is written on the blackboard clearly. For example, sunlight thrown on the blackboard could block the view of the students and the students should not feel intimidated to complain; this serves as a good feedback in using a blackboard. The ‘chalk and talk’ method of teaching can be limited if sketches are made on the blackboard to buttress explanations. The teachers must try to have some eye contact with the students, rather than looking at the blackboard when they are “speaking” or listening to deaf students.

To use a chalkboard effectively for teaching students who are deaf, it is important to develop chalkboard technique. Harford and Baird (2012) make some suggestions that can help teachers of the deaf:

- Always write clearly. It is important to remember that it takes a great deal of practice to learn to write legibly on a chalkboard so teachers of the deaf may want to practise lettering to hone their writing legibility.
- Draw simply. Teachers of the deaf do not have to include any unnecessary details in their sketches. If they have to draw maps or diagrams on the blackboard, they must be drawn before lesson begins. It is not advisable for teachers to use part of the lesson period to do major drawings in class. To help teachers do this, templates can be used.
- If teachers have to draw during a lesson, the drawing must be a quick simple one. In that case, teachers must ask the students questions about the drawing to keep their attention. Teachers must also plan the layout of the blackboard. Before the teacher begins his/her lesson, he/she might have practised the exact drawing in his/her notebook especially if he/she is not art inclined.

It is also suggested that teachers of the deaf must maintain eye contact with the class while writing, standing sideways without hiding what they are writing.

- The teachers must not write with their back turned to the class in silence and since they cannot “speak” to deaf students with their back turned, they must avoid blocking their views.

- The teachers must write quickly and as clearly as they can and should limit the length of text. While writing, the teachers must keep students' attention by underlining the key words. They must underline important features using different colour chalk or pens to highlight points which might be difficult for their students such as auxiliaries, irregular endings, use of pronouns or contracted forms.
- The blackboard should not be crowded with too many words which tend to make the blackboard look clumsy; the teachers should learn to manage the blackboard well possibly making good use of sketches or diagrams, maps and time-lines to clarify abstract concepts such as time, space, quantity.

2. Posters

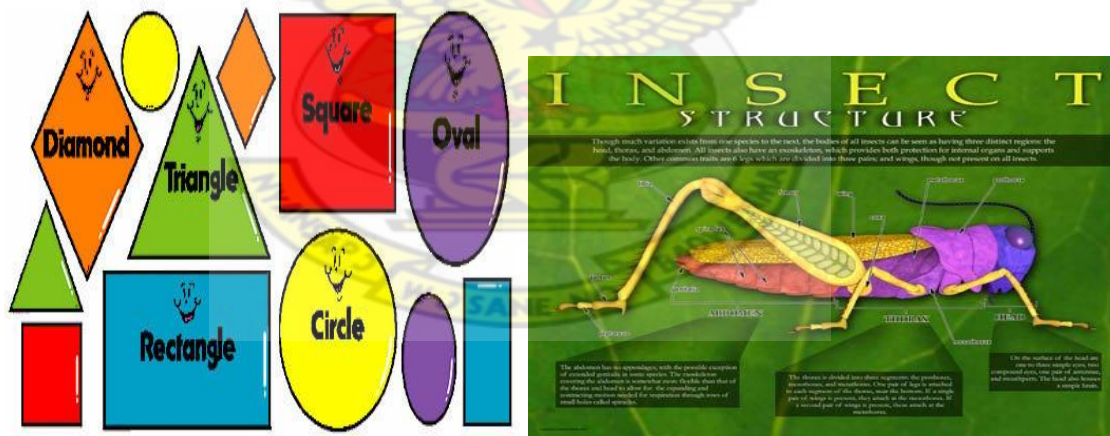


Plate 4.11 Examples of Posters that appeal to the deaf

- When using posters, teachers of the deaf need to think carefully about them. The choice of language should be carefully done.

- Posters must be printed in plain language to convey particular messages that are simple and uncontroversial.
- The teachers must think carefully about the information they want to include on posters. The purpose of the poster should be clear. Where posters come to the school already prepared, the teachers must select the ones that meet the purpose of their lessons and appeal to the visual literacy of the deaf.
- The teachers must make sure that posters have clear outlined drawings as shown in Plate 4.11. Images of drawings in posters which are colourful and attractive impress upon deaf students so teachers of the deaf must take that into consideration when selecting posters for their lessons.
- It is important for teachers of the deaf to remember that the most effective posters have clear, uncomplicated pictures and short written messages. The clearest and cheapest posters use simple colour drawings but to appeal to the needs of deaf students, it is always useful to select those with bright beautiful colours.

3. Wall Charts

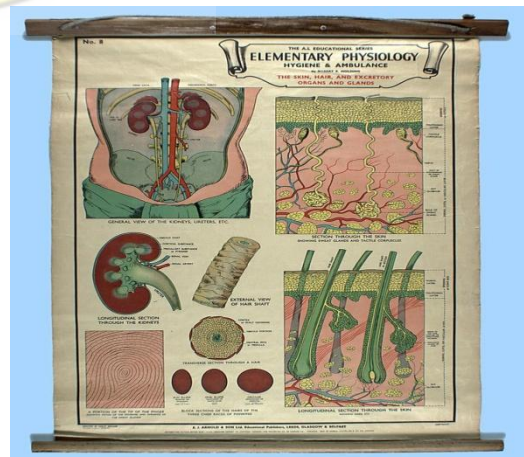
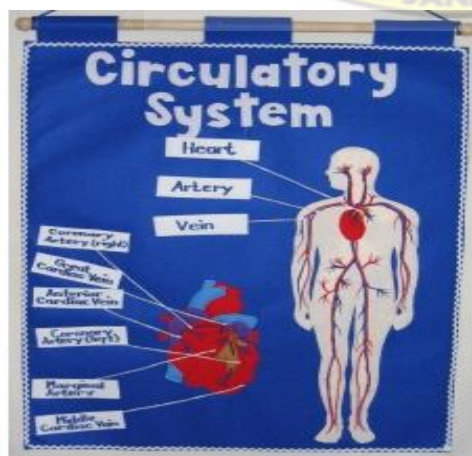


Plate 4.12 Examples of Wall charts that can be used for a lesson

- Wall charts should be displayed where deaf students can have access to them, for example they should be posted properly on the wall for easy identification and reference. Wall charts should be in the full glare of deaf students from their sitting places and should be colourful with clear writing.
- Wall charts should also have information for easy comprehension.
- For effective use in the classroom, teachers of the deaf must keep them large, simple and clear, with concise information as shown in Plate 4.12. The teachers can use wall charts for classroom instructions, classroom requests and duty rosters by referring to them.

4. Wall Paintings



Plate 4. 13 Examples of Murals that can be painted on the walls of the classrooms

- It is essential for teachers of the deaf to know the use of that painting. Abstract paintings are not likely to communicate effectively to the deaf rather a simple,

specific art work on the wall such as the map of Ghana or the map of the world would serve as a visual tool. Teachers of the deaf must understand that the colour and texture of wall paintings is a necessary consideration in classrooms of the deaf.

- A wall painting (a mural) can be a highly effective visual aid. It can be used to convey health, nutrition and literacy messages, as well as local information to the deaf. Walls of the classroom could particularly be ideal place for such paintings.
- The paintings should be large enough to appeal to the deaf as depicted in Plate 4.13. Most importantly they should be on the walls of the classroom or the school where every student can see without difficulty. In classroom teaching, the teachers could make reference to the paintings to support their lessons. If the paintings are outside the walls of the classroom, the students could be carried there for proper observation.

5. Flashcards



Plate 4.14 Examples of Flashcards that can facilitate visual teaching

- Flashcards are small cards with a picture or symbol on them used as visual tools (see Plate 4.14). Teachers of the deaf could use flashcards to teach reading. For example a picture of an elephant may be drawn or stuck on a card and the word ‘elephant’ written underneath it to communicate to the reader what the picture is. Usually deaf students are encouraged to associate the pictures and the words through various “look and ‘say’” activities and games. For example, flashcards depicting statements such as; “the man is weeding” and “mother is cooking” will impress on the minds of deaf students.
- The teachers can use flashcards to stimulate discussion among the deaf, as well as to share information and to remind deaf students of a recommended process of certain actions.
- To use flashcards effectively and efficiently to facilitate visual teaching, the teachers must show pictures of the flashcards and their names together. The teachers can ask students to look at the picture and say their names. This activity could be repeated several times. After the teachers have presented a number of pictures and their names that the students already know, they can ask for volunteers to come out and match the pictures with their names. When the students have learnt to read the names of the pictures, the teachers can divide them into teams and play reading games using the flashcards.
- The teachers must make sure that the flashcards have simple line drawings. They must again make sure that the names of the pictures are clearly written beneath the pictures on the cards.

6. Computers and Projectors

- Computers and projectors are both electronic devices that can display information (see Plate 4.15). In modern classrooms today, these can become useful visual teaching tools. Visual presentation programmes such as the Microsoft PowerPoint allow teachers to use computers and projectors to modify their slides to suit their lessons.



Plates 4.15 Computers and projectors can be used as visual tools

- Projector reveals information slowly by preparing one picture or table. The teachers can add further details to the pictures on a separate slide which can enhance their lessons. Often computers alone have been used to show pictures that buttress a lesson.

- For effective use of computer and a projector as visual teaching tools, an electricity supply, a screen and a way of making the room dark must always be ensured. The teachers must be confident with computers and projectors. If not, they must practise using them before using them in any lesson or they should call for assistance.
- If computers and projectors would be used in a lesson, preparation should be made beforehand. It is important for the teachers to set up the projector before the start of the lesson and the image checked whether they are in focus. For clearer images the teachers must ensure that the classroom is darkened.
- The teachers should highlight particular information while “speaking”, using a pointer such as a thin stick or a car aerial or even digital pointer if it is available.

In summary, Silverman (1998) outlines general guidelines for teaching visual learners effectively. According to Silverman, teachers must:

- Present ideas visually on the chalkboard or on overheads. "A picture is worth a thousand words." Use rich, visual imagery in lectures.
- Teach the student to visualize spelling words, math problems, etc. An effective method of teaching spelling is to write the word in large, colored print and present it to the student at arm's length, slightly above eye level.
- Use inductive (discovery) techniques as often as possible. This capitalizes on the visual learner's pattern-finding strength.
- Teach the student to translate what he or she sees into images, and records those images using pictorial notes. Incorporate spatial exercises, visual imagery, reading

material that is rich in fantasy, and visualization activities into the curriculum. Spatial conceptualization has the ability to go beyond linear thinking because it deals more readily with immense complexities and the interrelations of systems.

- To accommodate introverts, allow the student to observe others before attempting activities. Stretch wait time after questions and have all students write answers before discussing. Develop a signal system during class discussions that allows introverts to participate.
- Teach to the student's strengths. Help the student learn to use these strengths to compensate for weaknesses. Visualization and imagination are the visual learner's most powerful tools and should be used frequently.
- Allow the student to use a computer for assignments if any, and, in some subjects, for instruction. Teach the deaf student how to use a keyboard effectively.
- Give more weight to the content of papers than to format. These students often suffer from deficits in mechanics: spelling, punctuation, paragraphing, etc.
- Allow the student to construct, draw or otherwise create visual representations of a concept as a substitute for some written assignments.
- If a bright student struggles with easy, sequential tasks, see if he can handle more advanced, complex work. Acceleration is more beneficial for such a student than remediation.
- Be emotionally supportive of the student. Visual learners are keenly aware of their teachers' reactions to them, and their success in overcoming their difficulties appears directly related to their perception of the teacher's empathy.

The implication is that in classrooms of the deaf, the teacher is the first visual tool to deaf students. A teacher's facial expression, gestures and mimes are important element that can greatly enhance deaf students' understanding of subjects. Without making fun of themselves the teachers need to take steps to help students understand a lesson by miming the action they describe. For example, when deaf students are first getting used to classroom instructions in English, the teachers must use a lot of gestures together with Sign Language; '*Listen well*', the teacher must point to the ear. '*You have two minutes*'; teacher then points to the watch and shows two fingers. Exaggerating one's facial expressions slightly to get across a sense of mood – agreement or disapproval can make the difference.



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The purpose of this research was to find out the current teaching and learning challenges of the deaf and the extent to which teachers in the Schools for the Deaf in Ghana use visual tools in classroom teaching and learning to meet the needs of deaf students. In carrying out this study, the researcher used the qualitative research methodology and employed the descriptive and the multiple case study approaches to investigate the practice of visual teaching in five selected Schools for the Deaf namely: State School for the Deaf; Demonstration School for the Deaf; Senior High/Technical School for the Deaf; Sekondi School for the Deaf and Ashanti School for the Deaf. Purposive sampling technique was used to get the accessible population. A three-tier research strategy involving observation, in-depth interview and focus group discussion was used to collect data for the study.

The findings of the research revealed that the same teaching methods, curriculum and textbooks used in regular schools are used in Schools for the Deaf although the hearing disability of deaf students places them under the category of special students. The study indicated that visual teaching is not adequately practised in the selected Schools for the Deaf. The practice of visual teaching was therefore observed in only the nursery and the kindergarten classrooms of the selected schools. At the primary, JHS and SHS classrooms, the teachers were not observed to practise enough visual teaching. Some of the reasons given were that: they do not have adequate visual tools to use; their teacher education training did not include visual teaching as a major teaching strategy of the deaf;

the use of visual teaching consumes a lot of time and some of the teachers did not have the confidence to handle certain visual materials such as flashcards, wall charts and computers.

5.2 Conclusions

Although deaf students are not academically dim their hearing disability presents serious academic challenges including difficulties in spellings and deficiencies in the use of English Language. These academic challenges are partly due to the teaching and learning strategies currently practised in the Schools for the Deaf.

- The Schools for the Deaf repeat teaching techniques that resemble those of regular schools and use teaching methods that mimic a phonetic-base literacy approach such as the “chalk and talk” method of teaching.
- The Schools for the Deaf still use conversational teaching pedagogies which do not make more room for the practice of visual teaching and so the deaf attain academic progress with much difficulty.
- Deaf students use the same curriculum as their regular counterpart. They write the same sets of examinations both at the basic and the secondary levels with much the same expectation as their hearing counterpart amidst some learning difficulties such as the use of English Language.
- The textbooks used in the Schools for the Deaf are the same as those used in regular schools. These textbooks do not appeal to the visual literacy of deaf students who are visual learners.

- Visual teaching as a strategy for teaching the deaf has not been well supported in the various Schools for the Deaf in Ghana. Imitation of activities and experiences typical of the hearing with rare and timid use of visuals still run deep in such schools.

5.3 Recommendations

Based on the conclusions drawn above, the following recommendations are put forward for the attention of Special education Division of the Ghana Education Service, Ministry of Education (MOE), teachers of the various Schools for the Deaf, deaf educators, art teachers and stakeholders of education in general.

The Curriculum Research and Development Division (CRDD) of the Ghana Education Service in consultation with experts in deaf education may draft a new curriculum or adapt and modify the current curriculum used in Schools for the Deaf to meet the visual teaching needs of the deaf. This may include incorporating more visuals in their textbooks and methods of teaching.

The Ghana Education Service should ensure the provision of in-service training for existing teachers of the deaf to update their knowledge on visual teaching strategies. Such teacher-training programmes should include training in Sign Language and visual support strategies to enhance effective communication with the deaf.

The Ghana Education Service should incorporate visual art curriculum in the training of teachers for the deaf. This is not intended to make them full artists but to equip them confidently to handle the visual teaching and learning needs of deaf students. The art curriculum should be able to equip the teacher on rudiments of drawing, sketching and lettering.

Visual teaching should, as a matter of urgency, be the focal point of every education formulated for the deaf. The Special Education Division of the Ghana Education Service in collaboration with the various Schools for the Deaf may organize series of visual literacy workshop, a forum to discuss educational practices that involve visual teaching from time to time.

The learning styles of children who are deaf are influenced by the quality of visual environments of classrooms; Schools for the Deaf should acknowledge this fact and ensure that the classrooms of the deaf have enough visuals. Teachers of the deaf must make every effort to render information visually.

Finally, the Ministry of Education should incorporate the study of Sign Language into the curriculum of regular schools as a form of language study. In this way, the communication gap between the deaf and the hearing may be bridged. Research into the appropriate instructional media for students who are deaf could also be taken up to come out with computer-aided programmes that can facilitate teaching and learning in Schools for the Deaf.

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APPENDIX A

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF ART AND SOCIAL SCIENCES
DEPARTMENT OF GENERAL ART STUDIES
INTERVIEW GUIDE FOR HEADTEACHERS AND THEIR ASSISTANTS**

Introduction

Deaf students are visual learners; they have linguistic limitations and learning difficulties which importantly require visual teaching. There is no indication that visual teaching is practised in Schools for the Deaf hence the need to investigate the practice of visual teaching. This interview seeks from you, your views on the methods used in teaching the deaf and your views on the practice of visual teaching in the school. Thank you very much.

QUESTIONS

1. Can you please give brief background information of the school and the teachers in general?
2. Is there anything special practised in this school for the deaf as compared to the regular schools?
3. Do you use a different curriculum and textbooks? If yes or no, why so?
4. To what extent does the use of regular curriculum pose a challenge to the deaf?
5. What major problems do you face as a school and as a headteacher?
6. Do you occasionally get support from the Special Education Division of the GES?

The practice of visual teaching in the Schools for the Deaf

7. Do you acknowledge that deaf students are visual learners?
8. Do you think your school use more visual tools in its teaching?
9. Are there enough visual tools in the school?
10. What are the problems facing your school concerning the practice of visual teaching?
11. Would you agree that an effective use of visual tools and visual teaching to the deaf will facilitate teaching and learning in the classroom?
12. To what extent does visual teaching help in training deaf students?
13. Does the district directorate assist in acquiring visual tools and materials for teaching and learning?
14. Do you pay particular attention to the Schools for the Deaf under your supervision?
15. Is there any comment or suggestion you want to add, please?

THANK YOU VERY MUCH!

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF ART AND SOCIAL SCIENCES
DEPARTMENT OF GENERAL ART STUDIES
INTERVIEW GUIDE FOR TEACHERS OF SCHOOLS FOR THE DEAF

Introduction

Deaf students are visual learners; they have linguistic limitations and learning difficulties which importantly require visual teaching. There is no indication that visual teaching is practised in Schools for the Deaf hence the need to investigate the practice of visual teaching. This interview seeks from you, your views on the methods used in teaching the deaf and your views on the practice of visual teaching in the school. Thank you very much.

Questions

1. Do you use any special method in teaching the deaf?
2. How is the current teaching situation like?
3. What is special in the Schools for the Deaf with respect their teaching and learning situation?
4. What are some of the challenges of teaching the deaf?
5. Can you name the method you use to teach the deaf?
6. What are the challenges of using regular textbooks and curriculum in Schools for the Deaf?
7. How effective is the use of Sign Language to teach the deaf?
8. Do you have any challenges with the use of Sign Language?
9. Does your school GES enforce the use of any particular method of teaching?
10. Do they have the ability to read and to understand on their own?

The practice of visual teaching in Schools for the Deaf

11. Do you acknowledge that deaf students are visual learners?
12. Are there enough visual tools in the school?
13. What do you about the deaf concerning their visual learning ability?
14. Do you use visual in teaching? How often?
15. Are you assisted in the use of the visuals?
16. How well do the students respond to visual teaching when you practise it?
17. If you use visual tools, do you make them yourself?
18. What are the problems facing your school concerning the practice of visual teaching?
19. How are you helping find solutions to these problems?
20. Would you agree that an effective use of visual tools and visual teaching will facilitate teaching and learning in the classroom?
21. To what extent does visual teaching help in training deaf students?
22. Is there any comment or suggestion you would like to add?

THANK YOU VERY MUCH!

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF ART AND SOCIAL SCIENCES
DEPARTMENT OF GENERAL ART STUDIES
INTERVIEW GUIDE FOR STUDENTS OF THE SCHOOLS FOR THE DEAF**

Introduction

Deaf students are visual learners; they have linguistic limitations and learning difficulties which importantly require visual teaching. There is no indication that visual teaching is practised in Schools for the Deaf hence the need to investigate the practice of visual teaching. This interview seeks from you, your views on the methods used in teaching the deaf and your views on the practice of visual teaching in the school. Thank you very much.

Questions

1. What are some of the challenges you face as a student?
2. Do you think the teachers help you to solve some of these challenges?
3. Are you able to participate in class discussions?
4. How do the teachers explain issues in class?
5. How do they teach?
6. Do the teachers give you more home work?
7. Do the teachers allow you to get involved in the teaching and learning process?
8. Do the teachers use visuals in class?
9. Which kind of visuals do the teachers use?
10. Can you name any visual tool the teachers have ever used?
11. Do you love colours?
12. How do you feel when you see paintings, pictures, diagrams etc?
13. Do you like it when teachers use visuals in class?
14. If you were a teacher, would you use visuals in teaching?

APPENDIX B

OBSERVATIONAL CHECKLIST

ANGLES OF OBSERVATION	ATTRIBUTES	REMARKS
What is the classroom teaching and learning environment	- Do the classrooms have visuals such as pictures, paintings and diagrams? - Are the classrooms spruced with visuals that equip the deaf with enough visual experience?	
How is the teaching done in the various classrooms? Are there any challenges?	- How is the teaching done? - Do the teachers practise any special teaching pedagogy? - Are the teachers able to communicate well via Sign Language?	

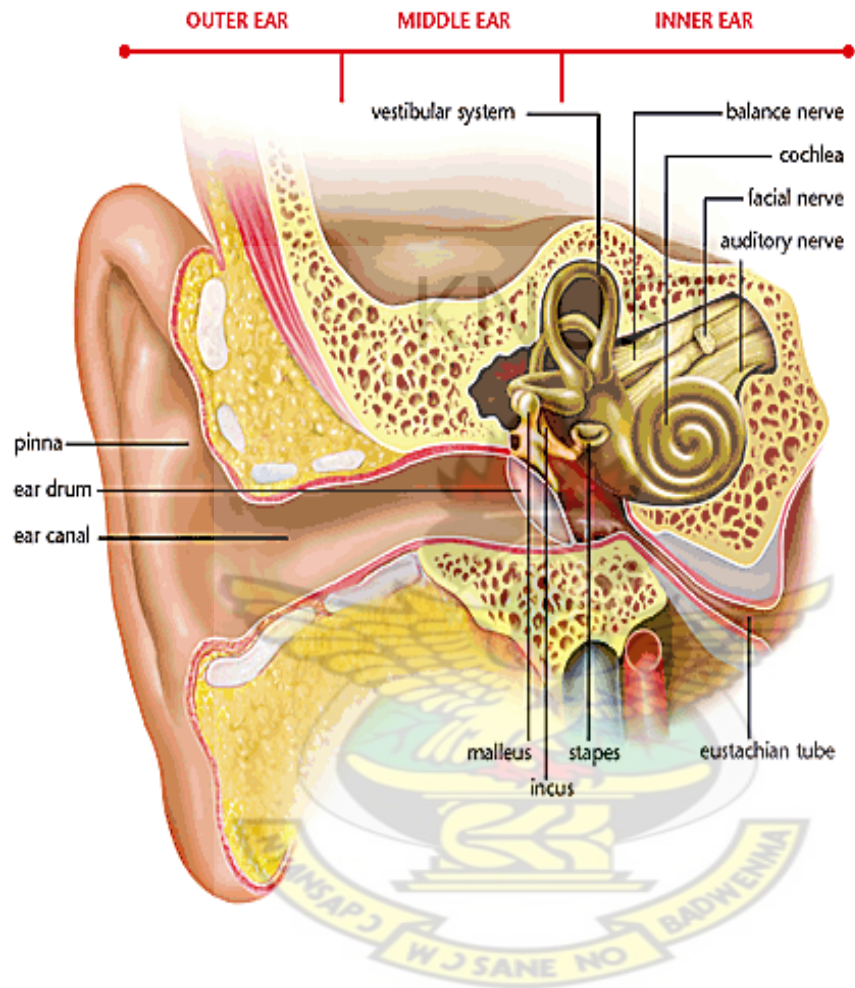
	4. What is the general class participation? 5. What methods so teachers use to teach? 6. Do they practise the project and the discovery methods? 7. How are the textbooks used different from the regular textbooks? 8. Do they have a lot of visuals that meet the needs of the deaf 9. What is the general impression of classroom teaching and learning?	
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ANGLES OF OBSERVATION	ATTRIBUTES	REMARKS
Do the teachers practise visual teaching?	1. Do the teachers practice teaching? 2. Do they incorporate visuals in their teaching? 3. Which kinds of visuals do they use? 4. Are they confident in using them? 5. Are the teachers themselves artistic? 6. Are the teachers able to use sketches and illustrations to demonstrate well? 7. How to they use visual tools to buttress a point?	

Do the inputs of teachers (visual support strategies) generate maximum student participation in class?	8. Are visual tools available in the school? 9. What kinds of visual tools do they have? 10. Do teachers have adequate teaching support materials? 11. How do students react to the use of visual tools in class? 12. Do the students themselves use visuals in their learning?	
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APPENDIX C

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