UNIVERSITY OF EDUCATION, WINNEBA

COPING STRATEGIES OF PUPILS WHO ARE DEAF AT DIAMOND KIDS INCLUSIVE SCHOOL COMPLEX NSAWAM, GHANA

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DECLARATION

Candidate's Declaration

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

Signature: .....

Date: .....

Supervisor's Declaration

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

Signature: .....

Date: .....

DEDICATION

I dedicate this work to my husband Mr. Gideon Adofo-Antwi, and children Shemaiah Adofo -Antwi, Pedaiah Adofo-Antwi and Micaiah Adofo-Antwi

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I give all thanks, glory and honour to God Jehovah Almighty for granting me the needed strength to come up with this work

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ABSTRACT

The purpose of this phenomenological study was to ascertain the social, academic, communication experiences, and the coping strategies of pupils who are deaf at the Diamond Kid Inclusive School Complex (DKIS) Nsawam. Fifteen (15) pupils who were deaf from Basic 3, 4, 5 and 6 were purposively sampled for the study. Focus group interview guides were used to collect data. Data were coded and analysed using a thematic approach. Results of the study indicated that participants had varied social experiences. Pupils who are deaf feel comfortable when interacting with their hearing colleagues within and outside the school; others feel isolated. Academically, the results of the study indicated that participants had to speech read the teachers in the absence of their sign language interpreters. Regarding communication experiences, participants indicated that the interpreters were not proficient in the use of sign language, which made it difficult for participants to understand instructions. On coping, strategies participants stressed that they depended on audiovisual aids to cope with their challenges in the classroom. The study recommended that the school authorities should employ competent sign language interpreters and use enough audio-visual aids in the teaching and learning process.

CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

A major challenge to majority of students at the basic school level is the strategies they adopt in coping with situations such as socialization, communication and classroom learning.

The word "coping" is derived from the Latin word "*corpus*" meaning "to alter" and usually used in the psychological paradigm to denote dealing with and attempting to overcome problems and difficulties (Rice, 2011).

In this study the phrase coping strategies was used to refer to the adaptation that student employed to overcome difficulties in socialization, communication, classroom learning and adaptation to the school environment. These strategies include problem-focused coping strategy and emotion-focused coping strategy which are very essential for deaf pupils in an inclusive classroom. Problem-focused coping is based more on one's capability to think and alter the environmental event or situation. In the emotion-focused strategy, the focus is inward on altering the way one thinks or feels about a situation or an event. Choice of coping strategy is influenced by the quantity and quality of available resources for coping that may be available to a person.

Increasingly, deaf pupils are educated in mainstream and inclusive school environments. This poses a question of how deaf children negotiate the demands of forming friendships with their hearing peers. Coping strategies in inclusive setting include instructional strategies, seating arrangement, noise management, assistive listening devices, and the interpreters‟ roles in general education classrooms.

The experience of pupils who are deaf and their educational needs is important in their general educational pursuit. What pupils are exposed to in the educational

environment can influence the kind of skills and knowledge they acquire (Edwards, 2012). In Ghana, many Basic schools practice Inclusive Education for both hearing and pupils with Special Educational Needs. Diamond Kid Inclusive school is one of the schools that practice Inclusive Education for both hearing and deaf pupils. However, not many studies have been conducted on how Inclusion is practised in schools that practice Inclusion. (de Boer, Pijl, Post, & Minnaert, 2013; Smith, 2004).

Diamond Kids Inclusive School (DKIS) is one of the notable establishments for the education of both the hearing and pupils who are deaf in the Eastern region of Ghana. Diamond Kid Inclusive School provides social, academic, communication experiences and support for pupils who are deaf through the help of teaching staff and non-teaching staff. Because of these pupils who are deaf might have varied social, academic, and communication experiences and certain coping strategies which they might share with educationist and researchers. These varied experiences and coping strategies might be favourable or unfavourable for the pupils in the process of educating them together with their hearing counterparts. A preliminary interaction between the headteacher, teachers and pupils on January 04, 2019, indicated that no empirical studies have been conducted in the school to explore the pupils‟ social, academic, communication experiences and coping strategies pupils adopt in addressing the challenges they face in having their education together with their hearing colleagues in an Inclusive environment. The present study, therefore, sought to explore the social, academic, communication experiences and coping strategies of pupils who are deaf at DKIS at Nsawam in the Eastern Region of Ghana.

Internationally, studies have explored the experiences of students who are deaf in inclusive settings. Nikolaraizi and Hadjikakou (2006) studied the educational experiences of deaf students in Greece and found that whether or not deaf students

were placed in inclusive or segregated settings, their experiences remained the same. Again, in a study conducted in the U.S.A., Schick, Schick, Skalicky, Edwards, Kushalnagar, Topolski, and Patrick (2013) explored the experiences of deaf youth on school placement and perceived quality of life, and found that the students" experiences were not different across inclusive and segregated schools.

In Ghana, evidence in the literature suggests that much is not known about the experiences of pupils who are deaf in inclusive Basic Schools because very few studies had been conducted in this area (Fobi, 2016). The few studies that had been conducted in this area centred on the Secondary and Tertiary School level in Ghana (Mantey, 2011; Oppong, & Fobi, 2016). A search into the institutional repository of the University of Education, Winneba (UEW) by the UEW librarian, in the presence of the 2017/2018 graduate students on November 06, 2018, revealed that no empirical study had been conducted regarding the social, academic, communication experiences and coping strategies of pupils who are deaf in inclusive schools at the Basic level in the Eastern region of Ghana.

Barriers to positive experiences, in terms of social interaction with peers, academic interaction with teachers, and support from resource centres and access to school facilities must be removed to promote the holistic development of pupils who are deaf. Pupils who are deaf should be provided opportunities and options at different levels to access educational and social experiences within the school (Soreci, 2005) (Mitchell, 2012). This would reduce the marginalization that pupils who are deaf go through in the course of their studies. The Republic of Ghana's Persons with Disability Law(Act 715), (2006) gives persons with disabilities rights to quality education, respect and human dignity and provides that, the state shall be responsible for ensuring that they realize their full mental and physical potentials (Asante & Sasu, 2015). Avoke,

(2005) and Harris (2015) stressed on the benefits of inclusive education for pupils who are deaf as having the potential to reduce fear and build friendship, respect and understanding. Pupils who are deaf need an education that would help them to develop relationships and to prepare them for life in the Inclusive environment. The social, academic, communication experiences and coping strategies of pupils who are deaf at Diamond Kids Inclusive School cannot be documented without hearing from them.

In this study "pupils who are deaf" refers to learners who depend on sign language as a mode of communication in the classroom setting. „Inclusion" also refers to the process of educating both deaf students and hearing students in the same classroom. Questions raised in this study were: (1) What are the social experiences of pupils who are deaf at DKIS (2) What are the academic experiences of pupils who are deaf at DKIS? (3) What are the communication experiences of pupils who are deaf at DKIS? And (4) How do pupils who are deaf at DKIS cope with their experiences in the school environment.

Problems of adjusting to academic, communication and social experiences at the Basic school level could often lead to failure and frustration for children. Sampaio and Santos (2002) indicated that for pupils who are deaf to assimilate new information and knowledge, they have to overcome their Inclusive experiences such as language deficiencies, inadequate study conditions, a lack of coping skills, problems with reading comprehension and difficulty in producing text. Life at the basic level requires free-flowing and meaningful communication with colleagues, teachers and the environment. Effective communication is fundamental in the early years of Basic education for improving the chances of academic success (Diniz, & Almeida, 2005; Ferreira, Almeida, & Soares, 2001).

Studies that have explored the experiences of pupils who are deaf in inclusive settings in Ghana and elsewhere found diverse views about their social and academic experiences. For example, Magongwa (2008) and Mutanga (2017) conducted studies on experiences of deaf pupils in a tertiary institution in South Africa and found that the students had a wide range of negative academic and social experiences when they studied with their hearing peers in the same school and classroom. Another study by Mantey (2011) on the social experiences of post-lingual students who are deaf in Secondary Schools in Central region of Ghana, found that deaf students did not have positive social experiences when they learned with their hearing colleagues. A Study conducted by Fobi and Fobi, (2016) on the academic and social experiences of deaf students at the University of Education, Winneba in Ghana, found that deaf students enjoyed learning together and interacting with their hearing counterpart.in the same classroom.

Findings of previous studies on the academic and social experiences of students who are deaf were not consistent. The current study sought to investigate the coping strategies of pupils who are deaf at Diamond Kids Inclusive School Complex Nsawam. Focus group interview was used to gather data for the study. The study was based on the theoretical framework outlined by Tinto‟s (1975) model of students‟ departure or retention.

1.1 Statement of the Problem

The experiences of pupils who are deaf in regular schools cannot be narrated without hearing from them the meaning they make out of what they go through. Besides, their daily experiences cannot accurately be seen from afar without giving ears to how they perceive it. The few studies that were conducted on the experiences

of pupils with disabilities in inclusive education settings were conducted in the basic and senior high schools (Awini, 2015; Mantey, 2011 & Rockson, 2014).

Again, studies have established the positive impact of social interaction on academic performance and the difficulty teachers in higher institutions face in varying their methodology and adapting curriculum content to make it accessible to students with disabilities (Matshedisho, 2010). Evidence from the literature revealed that much is not known about the social, academic, communication experiences and coping strategies of pupils who are deaf at the basic schools level in Ghana. Very few studies had been conducted in this area (Mantey, 2011; Oppong, & Fobi, 2016). The few studies that had been conducted in this area were conducted at the secondary school and tertiary levels (Mantey, 2011; Oppong, & Fobi, 2016). In this study, the problem relates to the social, academic, communication experiences and coping strategies that individual pupils who are deaf go through at the basic school level at Diamond Kids Inclusive School at Nsawam, in the Eastern Region of Ghana. Social, academic, communication experiences and the coping strategies of deaf pupils in the school so far had not been researched into and documented.

1.2 Purpose of the Study

The purpose of this study was to explore the coping strategies of pupils who are deaf at Diamond Kids Inclusive School (KDIS).

1.3 Objectives of the Study

The objectives of the study were to explore:

1. Social experiences of pupils who are deaf at DKIS.
2. Academic experiences of pupils who are deaf at DKIS.
3. Communication experiences of pupils who are deaf at DKIS.
4. Copping strategies of the pupils who are deaf at DKIS.

1.4 Research Questions

The study was guided by the following research questions:

1. What are the social experiences of pupils who are deaf at DKIS?
2. What are the academic experiences of pupils who are deaf at DKIS?
3. What are the communication experiences of pupils who are deaf at DKIS?
4. What are the coping strategies that pupils who are deaf utilize at DKIS

1.5 Significance of the Study

Findings of the study would provide information on social, academic, communication experiences and coping strategies of pupils who are deaf in an inclusive education setting at the Basic school levels. Also, findings of the present study would serve as a guide for policymakers issues on the inclusion of pupils who are deaf at the basic school levels. The result of the study would aid at finding out how pupils who are deaf at DKIS cope with their experiences in the school environment. This would enable pupils who are deaf to properly adjust to the school environment to enhance their academic performance. Again, students and other researchers who are interested in study or research into a similar subject may use this study as a referenced material.

1.6 Delimitation

Even though there were pupils who are deaf in other basic schools in Ghana, this study focused on only pupils who are deaf at Diamond Kids Inclusive School Complex in Nsawam. Also, the study only explored the experiences of pupils who are deaf regarding the pattern of their social interactions, nature of academic interactions, communication experiences and coping strategies at Diamond Kids Inclusive School Complex in Nsawam.

1.7 Limitation

The researcher found it a bit challenging administering the research instrument because the understanding level of the respondents was quite low. The researcher overcame this challenge by training interpreters on the questions meant for the pupils. However, it is important to note that despite this limitation, the validity of the research findings and conclusions were not compromised.

1.8 Operational Definition of Terms

Experience: Cilesiz (2011) defined experience as active participation in events or activities, leading to the accumulation of knowledge or skills. Similarly, experience in the context of this study describes the events that pupils who are deaf involved in over a period as pupils at DKIS that leads to an increase in knowledge and skills.

Academic experiences: Teaching and learning processes that pupils who are deaf go through at DKIS.

Sign Language: It is the visual-gestural mode of communication used by individual Ghanaians who are deaf.

Social experiences: They are the daily events that pupils encounter as they go about their learning activities in the Basic school setting

Pupils who are deaf: They are pupils whose level of hearing acuity range from severe to profound and depend on Sign Language interpreting services for academic information.

Communication: The process of sharing information.

Inclusive school (IE): The school that recognise and respond to the diverse needs of their pupils, accommodating both different styles and rates of learning and ensuring quality education to all through appropriate curricula.

Deaf: Someone who"s hearing disability is so severe that it precludes successful processing of linguistic information through audition, with or without hearing aid.

Hard of hearing (HH): A person who has residual hearing sufficient to enable successful processing of linguistic information through an audition with the use of hearing aid.

1.9 Organization of the Study

In line with the in-house style of the University of Education, Winneba, this thesis was presented in six chapters. Chapter one comprised the background to the study, statement of the problem, aim and objectives of the study, research questions, significance of the study, delimitations of the study, limitations, operational definition of terms and general layout of the study. Chapter two focused on the literature review taking into account the research objectives and the theoretical framework of the study. Chapter three dealt with the methodology including sample and sampling techniques, research design, population, instruments used in data collection and analysis, description and distribution of instruments. Chapter four covered the presentation and analysis of data collected and Chapter five focused on interpretation and discussion of results. Chapter six dealt with the summary, conclusions and recommendations.

1.10 Summary of Chapter

This chapter presented the introduction to the entire study. The introduction explained that only a few numbers of studies have been conducted on experiences of pupils who are deaf, and they found different results. The present study sought to unveil the experiences and coping strategies of pupils who are deaf in an inclusive basic school setting at DKIS. Thus, this present study lays a strong foundation for building scientific literature on the experiences of pupils who are deaf in the basic school setting.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviewed related literature on the social, academic, communication experiences and coping strategies of pupils who are deaf. The literature reviewed included research articles, journals, and books. The literature reviewed also included empirical studies and the theoretical framework supporting the main issues addressed in this study.

2.1 Theoretical Framework

This study was guided by Tinto‟s (2000) model of students‟ departure or retention. In the model, Tinto explained that an individual student‟s decision to persist or depart from an institution is dependent on their pre-university characteristics, their level of commitment and intention towards their academic goal, and their ability to integrate academically, and socially into the institutional culture (McCubbin,2003). Explaining academic and social integration, Tinto indicated that academic integration is dependent on a pupils‟ level of academic preparedness and readiness to meet academic expectations. Tinto (1975) further indicated that social integration is dependent on the pupils‟ ability to be involved in the school community as well as connect to the peer culture, and engage in the social life of the institution. Tinto postulated that whereas academic integration is a requirement for pupils‟ retention, social integration is not. However, both academic, and social integration have a potential influence on pupils‟ involvement and retention.

Tinto (1975) hypothesized about two levels of integration. Tinto stated that: (1) pupils who perform well academically in an institution may not necessarily involve themselves in the social activities of the institution, and (2) pupils may have

high social involvement in organizations and extracurricular activities may have average academic experience. Depending on the characteristics of the individual pupils, these levels may be sufficient for pupil‟s retention or departure. Regardless of levels of integration, Tinto indicated that both academic and social factors influenced an individual pupil‟s persistent decisions. Astin (1993), Tinto (1993) and Tinto (2000) explained that what drives integration in both domains is the concept of involvement. Tinto discussed involvement in both the academic and social domains as a significant element that drives learning and development (Braxton, Milem, & Sullivan, 2000). The more involved a pupils are in their learning and development, the more likely they will become integrated with the academic, and/or social culture of the institution, and therefore the more likely they will persist and graduate from the institution (Astin, 1993; Bean & Eaton, 2000; Pascarella, 2006; Tinto, 1993, 2000).

2.1.1 Implications for the Study

The implications of Tinto‟s (1975) model of departure or retention for this study are that the social and academic experiences of individual pupils who are deaf in an inclusive setting may be different across different domains. For example, a student who integrates well socially in an institution may not necessarily perform well academically, and vice versa. Also, some pupils may perform well academically and also be involved in the social activities of the institution. Tinto (1975) indicated that how pupils who are deaf are taught and their ability to communicate in an inclusive school environment may give them positive academic experiences. However, the same pupils in the same institution may not necessarily have positive social experiences. Astin (1993), Tinto (1993) and Tinto (2000) explanation also indicated that what makes pupils who are deaf feel included in an educational institution, both academically and socially, is their involvement in the institution‟s activities.

The implications of Tinto‟s model of student departure or retention are that deaf students‟ involvement in both academic and social domains in an inclusive school drives learning and development. Pupils‟ involvement should be tackled holistically by building both the academic and social domains since both have their respective experiences. The more involved a pupil who is deaf is in their learning and development, the more likely they will become integrated with the academic activities of the institution. Also, the more involved a pupil is in the social activities of a tertiary institution, the more likely they are to develop positive social experiences (Astin, 1993; Bean & Eaton, 2000; Pascarella & Terenzini, 2006; Tinto, 1993, 2000).

2.2 The concept of inclusive education in Ghana

The issues of inclusive education and its implications have been under scrutiny during the past thirty years. Today, societies have become concerned about ensuring the educational rights of all children, regardless of the severity of disabilities. As a result, the inclusion of students with disabilities into the regular educational setting has become the concern of educators, governments, and society at large (Beyene & Tizazu, 2010; Tesfaye, 2005).

Inclusion in the context of education is based on the idea that all children should learn together, regardless of differences or disability. Inclusive education begins with the premise that all learners have unique characteristics, interests, abilities and particular learning needs and, further, that learners with special education needs must have equal access to and receive individual accommodation in the general education system. Inclusive education approaches differences and diversity affirmatively, recognizing the value of such differences and the learning opportunities that such diversity offers (UNESCO, 2000).

Inclusion refers to students with disabilities becoming part of the general education classroom, receiving a meaningful curriculum with the necessary support, and being taught with effective strategies (Smith 2004). The basic premise of the integration/ inclusion movement is that principles of anti-discrimination, equity, social justice, and basic human rights make it imperative that students with disabilities and special needs should enjoy the same access as all other students to a regular school environment and a broad, balanced and relevant curriculum (Knight, 1999; Ocloo & Subbey, 2008; UNESCO, 1994).

Inclusion implies a transition from separate, segregated learning environments for persons with disabilities reflected in the "special education" approach, to schooling in the general education system. Effective transitions from special education approaches to inclusive education requires careful planning and structural changes to ensure that learners with disabilities are not placed within the regular or mainstream school system without the appropriate accommodation and supports that ensure an inclusive learning environment. Inclusive Education (IE) is an approach or a process which occurs when children with and without disabilities, HIV status, age and children of diverse backgrounds and abilities learn together in the same classroom, interact socially with each other within the regular school setting for the whole day. It aims at social inclusion and implements the child‟s right as pronounced in the universal declaration in human rights of 1949 (UNESCO, 2003).

IE acknowledges that all children can learn. It respects differences in children, age, gender, language, disability, HIV and TB status, etc. It enables education structures, systems, and methodologies to meet the needs of all children. It promotes an inclusive society. Research shows that children, who learn together, live together,

play together and share resources and live happily together. This confirms the Salamanca statement and framework for action (1994) which states that:

> *"Regular schools with an inclusive orientation are the most effective means of combating discrimination, creating welcoming communities, building an inclusive society and achieving education for all" (Chireshe, 2013, p 27).*

The Principle of Inclusive Education was adopted at the UNESCO 1994, Salamanca World Conference on Special Needs Education and was restated at the Dakar World Education Forum (2000) as:

> *"...schools should accommodate all children regardless of their physical, intellectual, social, emotional, linguistic or other conditions. This should include disabled and gifted children, street and working children, children from remote or nomadic populations, children from linguistic, ethnic or cultural minorities and children from other disadvantaged or marginalized areas or groups" (Harsch, 2000 p. 28).*

In Ghana, inclusion is defined in its broadest sense as ensuring access and learning for all children: especially those disadvantaged from linguistic, ethnic, gender, a geographic or religious minority, from an economically impoverished background as well as children with special needs including those with disabilities. The IE policy locates inclusion as a part of the wider reform of the education system, that aims to create learning environments that are responsive to all learners" needs and conducive to successful educational outcomes, and ultimately to a more equitable society. It goes beyond the education system to the communities in which learners live to ensure that they are welcomed, nurtured and allowed to thrive to their optimum capacities (Opoku, Agbenyega, Mprah, W. K., Mckenzie & Badu, 2017).

The global increase in inclusive education has been one of the most important paradigm shifts to occur in education over the past two decades (Forlin, 2010). An inclusive model of education embraces a social model of disability that encompasses the rights of all children to be educated together and is supported both ethically and

morally (Forlin, 2006; 2010). Many countries at the World Conference on Special Needs Education, Salamanca, Spain (United Nations Educational Scientific and Cultural Organization, 1994), signed the statement, which outlined that inclusive education was for all children, including learners with special educational needs and/or disabilities in regular schools (Peters & Forlin, 2013). With the advance in universal screening and the improved technology of sensory aids (e.g., cochlear implants), growing numbers of children who are deaf or hard of hearing attend regular schools (Kelman & Branco, 2009). The literature concerned with inclusive education and pupils are deaf has emphasized three principal benefits of inclusive education, social interaction and contact with children with normal hearing, naturalistic access to typical linguistic and behavioural models of hearing peers, and children‟s social acceptance by hearing peers (Eriks-Brophy, Durieux-Smith, Olds, Fitzpatrick, Duquette, & Whittingham, 2012).

Nevertheless, others state that simply placing pupils are deaf in regular classrooms does not automatically facilitate meaningful social interaction, peer acceptance, positive inclusion, and/or improvement in the children‟s social communication skills (Antia, Stinson, & Gaustad, 2002; Hyde & Power, 2004; Weisel, Most, & Efron, 2005). Peer acceptance and the popularity of pupils are deaf in regular schools, when compared to pupils are deaf attending special schools, is of concern (Wolters, Knoors, Cillessen, & Verhoeven, 2011). Research indicates that pupils are deaf are more likely to be neglected by their hearing peers in regular schools and less likely to have a friend in the class than their classmates with normal hearing (Nunes, Pretzlik, & Olson, 2001). Pupils are deaf who have poorer speech intelligibility are also reported to experience more loneliness and less coherence than

those with better speech intelligibility in the classrooms where they are included individually (Most, 2007)

Agyire-Tettey, Cobbina and Hamenoo (2017). Conducted a study on the academic challenges of students with hearing impairment (SHIs) in Ghana. The purpose of the study was to elucidate challenges that prevent SHIs from high academic achievements, using the case of students in Tetteh Ocloo State School for the Deaf in the Greater Accra Region of Ghana. A qualitative research design was used for data collection through in-depth interviews, analysis and the interpretation of the responses of thirty participants (12 Students with hearing impairments, 11 parents and 7 special educators). The Findings showed that challenges which hinder SHIs academic performance emanate from different systems and actors including SHIs themselves, their parents and other institutional barriers that exist in deaf education.

The findings also indicated that parents influenced the academic performance of their children with hearing impairment (CHI) through their responsibilities, expectations and the learning assistance they gave to their wards at home. Results also established that institutional barriers such as effective instructional procedures adopted in deaf education, availability of facilities, teaching, reading learning materials, and curricular contents posed challenges to the academic performance of students with hearing impairment. They concluded that the identified challenges which prevent SHIs from the higher academic performance are from different systems of SHIs‟ environment and the interplay between them. The study recommends that interventions must be directed at the different systems within their environment. Agyire-Tettey et al., (2017) study did not focus specifically on the academic, social and communication experiences of students who are deaf and therefore left a gap.

Even when children who are D/HH have well-spoken language and have the assistance of cochlear implants or hearing aids, they still have many difficulties in social interaction, especially when in group situations and noisy environments (Punch & Hyde, 2011). The purposes of the current study, therefore, was to examine the academic, social and communication experiences of students who are deaf at diamond kids inclusive school complex

2.3 Social Experiences of Students who are Deaf

Social relationships add quality to one‟s life and contribute to one‟s ability to think and learn. A growing body of research indicates that having good social skills is critical for succeeding in society (Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000; Malecki & Elliott, 2002), including success in the labour market (Matsumura, Patthey-Chavez, Valdés & Garnier, 2002; Williamson, & Wagner, 1990). Research also documents the negative impact of a lack of social skills. It has been indicated that individuals who lack social skills are often rejected by others and are at risk for developing mental health problems that persist during adulthood (Antia, Jones, Luckner, Kreimeyer, & Reed, 2011; Elksnin & Elksnin, 2006). Bullis, Nishioka, Fredericks, and Davis (1997) reported that 90% of job loss is related to social skills problems rather than an inability to do the job.

Pupils are deaf often have communication difficulties and consequently may not develop appropriate social skills and social relationships. Meadow (1980) suggested that communication and language difficulties resulted in experiential deficiencies that negatively influenced social development. Researchers and practitioners have been particularly concerned about the social outcomes of pupils are deaf who attend public school programs where their classmates are primarily hearing,

because of problems with peer communication and interaction (Kluwin, Stinson, & Colarossi, 2002).

Social outcomes can be examined through several lenses including social interactions with hearing peers, peer relationships and friendships, and ratings of social skills and behaviour. Observation research on the peer interactions of elementary pupils who are deaf in general education settings may have poorer social relationships than hearing students. Researchers have reported significantly lower likeability, social preference, and acceptance ratings for elementary pupils who are deaf when compared to hearing peers (Eriks-Brophy, Durieux-Smith, Olds, Fitzpatrick, Duquette, and Whittingham, 2012; Kent, 2003) indicates that those who spend limited time in general education classes engage in infrequent interaction with hearing classmates (Antia, 1982; Keating & Mirus, 2003; Koster, Pijl, Nakken, & Van Houten, 2010). However, adolescent self-reports of peer interactions are contradictory. English adolescents reported that they interacted equally or more frequently with hearing peers than with peers who were deaf (Schick, Skalicky, Edwards, Kushalnagar, Topolski, & Patrick, 2013; Stinson & Whitmire, 1994), whereas U.S. and Canadian adolescents reported the opposite.

Pupils who are deaf in general education settings may have poorer social relationships than hearing students. Researchers have reported significantly lower likeability, social preference, and acceptance ratings for elementary pupils who are deaf when compared to hearing peers (Eriks-Brophy, Durieux-Smith, Olds, Fitzpatrick, Duquette, and Whittingham, 2012; Kent, 2003) these low ratings did not change over time, despite opportunities for peer social interaction (Antia & Kreimeyer, 2003). Nunes and Pretzlik (2001) found that elementary students were as likely as their hearing peers to be popular or rejected, but were significantly less likely

to have friends in their class. In contrast, research outcome has indicated that there is no difference in social status between elementary Dutch students with or without hearing loss over 2 years (Avramidis, Strogilos, Aroni, & Kantaraki, 2017; Wauters and Knoors, 2008). Adolescents with hearing loss in general education settings have reported higher emotional security with peers who were deaf than with peers who were not (Antia at al., 2011).

Social skills are usually measured through rating scales and interviews. Most, Ingber, and Heled-Ariam (2012) compared the social competence and behavioural problems of elementary-age Swedish students with hearing loss enrolled in general education programs and similar-age students without hearing loss. Neither parents nor teachers reported differences between the two groups in prosocial orientation, social competence, or externalizing and internalizing problems. Mejstad, Heiling, and Svedin (2009) found similar positive results with Swedish students. Kent (2003) used a student self-report measure to compare the psychosocial behaviours of New Zealand adolescents with and without hearing loss, and reported no differences in loneliness or sense of belonging at school. Although multiple factors contribute to social outcomes, the most studied is the mode of communication and communication skill of students with hearing loss.

Dammeyer (2010) reported that poor sign or spoken communication skills were significantly related to psychosocial difficulties. Kluwin, Stinson and Colarossi (2002) found that adolescents with hearing loss who preferred to use oral communication reported more frequent social participation with hearing peers, and Jacobs, Margaret Brown and Paatsch, (2012) found that oral English competence contributed to feelings of security and interaction with hearing peers. The effect of degree of hearing loss on social outcomes is of considerable interest. Although it is

expected that children with a greater degree of hearing loss will have poorer social outcomes, research indicates that children with all degrees of hearing loss have social difficulties. In some studies, students with mild and moderate hearing losses have scored below hearing norms on various aspects of social behaviour (Davis, Elfenbein, Schum, & Bentler, 1986; Moeller, Tomblin, Yoshinaga-Itano, Connor & Jerger, 2007) although other studies have found no significant differences (Yoshinaga-Itano, Johnson, Carpenter, & Brown, 2008, May). Although children with mild hearing loss may have poorer social outcomes than their hearing peers, it is not clear that children with a greater degree of hearing loss have more severe social problems than those with a lesser degree of hearing loss.

Neither Davis et al.,(1986), Anita et al.,(2011) nor Dammeyer (2010) found a relationship between students‟ social functioning and degree of hearing loss. However, Furstenberg et al. reported a positive relationship between good social outcomes and students‟ use of their hearing as measured by knowledge of their hearing loss and listening devices, and use of residual hearing. Anita et al., (2011) reported that, although teacher-rated social behaviour of Arab-Israeli children was related to the degree of hearing loss, those with severe loss received better ratings than those with minimal loss. Familiarity with peers can impact social outcomes, specifically the quality of peer interaction. Antia, Kreimeyer, and Eldredge (1993) reported that interaction increased among students with and without hearing loss when they participated in activities that promoted familiarity. Israelite, Ower, and Goldstein (2002) found that English adolescents with hearing loss reported higher emotional security with hearing peers as they spent more time in general education classrooms, although the opposite was true of American adolescents.

Similarly, Anita et al., (2011) reported that pupils who are deaf who were involved in structured school social activities were more likely to make friends and to participate in social activities with hearing peers. Frequency of participation in these activities was associated with high levels of social competence. Finally, family involvement in children‟s social lives can influence social outcomes. Parents serve as social "coaches" for their children by discussing strategies for making friends or for handling peer problems and by demonstrating competent social interaction with a variety of individuals (Webster-Stratton & Reid, 2004; Denham 2007). Parental resources may affect social outcomes: Families with money or time can provide access to extracurricular activities that provide opportunities for socializing with peers.

In Ghana, Adu (2016) explored the social and academic experiences of students who are deaf at the University of Education, Winneba (UEW). Fourteen deaf students who are deaf were purposively sampled from a population of 36 students. Data were gathered through a semi-structured interview guide. Data were coded and analysed using a thematic approach. Results of the study indicated that students who are deaf had varied social experiences. Whereas some preferred being at the same place with their hearing colleagues, others saw that as a waste of time. Adu feather recommends that the university should sensitize lecturers, staffs and students on regular basis to inform them about persons with disabilities, especially, those with deafness and also at social gatherings, the university should make available sign language interpreters so that students who are deaf can benefit from such meetings. The above researcher did not focus specifically on the communication experiences and coping strategies of pupils who are deaf and therefore left a gap.

2.3.1 Social Integration of Deaf Children in Inclusive Settings

In many countries, the inclusion of children with disabilities, including deaf children, is a core element of educational policy. If possible, deaf children are educated in mainstream settings. Given this policy, it is surprising to see how few studies have been carried out into the social integration of deaf children. Yet, social integration seems to be one of the major challenges for pupils who are deaf in inclusive settings. Stinson and Antia (1999) define social integration as the ability to interact with, make friends with, and be accepted by peers. From the studies available, it appears that deaf children in mainstream education often have few friends, have less interaction with hearing peers, and are more often rejected or neglected than their hearing peers. In addition, they may feel isolated and lonely (Kluwin, Stinson, & Colarossi, 2002; Musselman, Mootilal, & MacKay, 1996; Stinson & Antia, 1999; Stinson & Kluwin, 2003). For deaf children in a co-enrolment program, the image of social integration seems somewhat more positive.

Co-enrolments classes include both pupils who are deaf and hearing children who are cotaught by general education and a special education teacher. In theory, co-enrolments programs provide the opportunity for intensive contact between deaf or hard-of-hearing children and their hearing peers (Antia at el., 2003; Kirchner, 1994) in an environment where they are not the only pupils who are deaf or hard-of-hearing child. Although pupils who are deaf or hard-of-hearing and hearing children have been found to interact more with peers with the same hearing status (Kluwin et al., 2002), the interaction between pupils who are deaf or hard-of-hearing and hearing peers increased during the co-enrolments program studied by Kreimeyer, Crooke, Drye, Egbert, and Klein (2000). In the very few co-enrolments programs studied, mostly located in the United States, pupils who are deaf or hard-of-hearing children

did not seem to feel lonely or isolated, did not have lower self-esteem, and did not differ from their hearing peers in how much their peers liked them (Kluwin, at el., 2002; Nunes, Pretzlik, & Olsson, 2001). However, Nunes et al. (2001) found pupils who are deaf or hard-of-hearing children to be neglected more often than their hearing peers and to have fewer friends in the classroom Although Nunes et al. did not explicitly identify the inclusive settings they have studied as co-enrolments settings, it is clear from their description that their settings entail the characteristics of co-enrolments programs.

Children need relationships and friendships to develop social skills. These skills are necessary to develop social relations later on in life (Gifford-Smith & Brownell, 2003). Children with different degrees of peer acceptance, social competence, and friendly relations have been found to show differences in their behavioural development (Pijl, Frostad, & Flem, 2008); Gifford-Smith & Brownell, 2003). Popular children, who are well-liked by many peers and seldom disliked, show many prosaically behaviours (such as cooperating, helping, being considerate); they are more sociable; often display behaviours such as associative play, friendly approaches, and social conversation; and they are seldom engaged in aggressive behaviours. Rejected children, who are frequently disliked and seldom well-liked, often display aggressive and antisocial behaviours (such as bullying or victimizing) and are seen as arrogant by their peers. Rejected children are at greater risk of negative developmental outcomes than other children.

Neglected children, who are neither liked nor disliked by their peers, have a low social visibility. Not much information is available about their behavioural development. Apart from a general lack of sociability, they are hard to distinguish from their popular peers. Controversial children, who are both liked and disliked, are

highly visible in the peer group and display behaviours that are characteristic of both popular and rejected children. They are sociable and show high rates of positive interaction, but they are also aggressive and arrogant. A neglected or controversial status seems to be less stable over time than the other categories. Levels of peer acceptance may affect the opportunities to make friends (Pijl et al., 2001) and friendships provide the context for social, emotional, and cognitive development. Children with mutual friends generally show more sociable and prosaically behaviours and have higher self-esteem. Van Lieshout, Verhoeven, Gu¨rog˘lu, Haselager, and Scholte (2004), added that the number of mutual friendships and antipathies is related to peer acceptance and social competence. Children who only have friendships (and no antipathies) usually are more socially competent and have a popular or average status (Gifford-Smith & Brownell, 2003).

For children with both friendships and antipathies, social competence is somewhat lower than for children with friendships only. These children generally have a controversial or rejected status. Children who only have antipathies have low social competence, show a high degree of antisocial behaviour, and are usually rejected by their peers. Children who do not have any friendships or antipathies are not very visible in the classroom and show a high degree of socially withdrawn behaviour. These children mostly have a neglected status. It is clear from these studies and reviews that peer acceptance, social competence, and friendship relations are interrelated. Although peer acceptance, social competence, and friendship relations already have been studied in deaf children (Kluwin et al., 2002; Nunes et al., 2001), the interrelations between these variables have not. Furthermore, no previous studies have looked at these interrelations over time. Therefore, this article is the first to

examine the stability of and the interrelations between these variables over time in both deaf and hearing students.

Relationships and friendships with peers are related not only to social and behavioural development but also to children‟s academic achievement (Gifford-Smith & Brownell, 2003; Evans & Pinnock, 2007). Children with more friends have fewer adjustment problems, have higher self-esteem, report less loneliness, enjoy wider peer acceptance, and display better school adjustment, positive attitudes toward school, and better achievement (Gifford-Smith & Brownell, 2003). Children who are rejected by their peers are at risk for school failure or drop out. Pellegrini (1992) found peer interaction in kindergarten to be positively related to academic achievement in Grade 1. Wentzel, Barry, and Caldwell (2004) found that middle school students with mutual friends showed higher academic achievement than friendless students. Hatzichristou and Hopf (1996) found that rejected children in elementary and secondary schools showed academic difficulties and low achievement scores. Diehl, Lemerise, Caverly, Ramsay, and Roberts (1998) found that peer acceptance and having friends significantly incremented the prediction of achievement scores over the contributions of race, gender, attitudes toward school, and age for Grade 1–3 children. Popular children with at least one friend had the best school adjustment.

2.4 Academic Experiences of students who are deaf at DKIS

The history of efforts to educate pupils who are deaf is a controversial one, particularly concerning program placement and, relatedly, the language of instruction. The debates centre on whether Predicting Achievement of Deaf and Hard-of-Hearing Students (DHH) are best served by regular schools with a wide variety of students, including those with and those without disabilities, or special schools or programs

designed for DHH learners (Antia, Stinson, & Gaustad, 002; Marschark, Shaver, Nagle & Newman, 2015; Wang & Walberg, 1988) and whether sign language, spoken language, or both should be the language(s) of instruction (Barnett, McKee, Smith, & Pearson, 2011). Within each of these school placements, DHH students can experience a variety of instructional approaches, programs, assistance, and staffing. For example, in regular schools instruction for DHH students may be bilingual, with sign language support, or written/spoken language supported by assistive listening devices such as hearing aids and cochlear implants (multifrequency electrodes surgically implanted near the auditory nerve with an external microprocessor worn like a hearing aid that is mapped to the specific frequencies of an individual‟s hearing loss), real-time text, and attention to classroom acoustics.

Although the debate about the most appropriate placement continues, the dramatic movement of DHH students in the United States from schools for the deaf to regular schools is unquestioned: 50 years ago, 80% of DHH children were educated in special settings where instruction typically was offered through some form of signed communication; today, more than 85% spend all or part of the school day in regular schools as stated by the United States Government Accountability Office, 2011 (Arrazola, Dube & King, 2013).) Whatever the educational setting, the primary challenge in educating DHH student is meeting their communication needs. More than 95% of DHH children have speaking and hearing parents, but because of their hearing losses, DHH children‟s access to spoken language is limited. Thus, most DHH children arrive at school with significant delays in language development relative to hearing peers (Knoors & Marschark, 2012). DHH children of deaf parents, with access to a natural sign language from birth, and those who have greater (but not full) access to spoken language generally demonstrate somewhat better academic

outcomes than DHH children without Predicting Achievement of Deaf and Hard-of-Hearing Students those characteristics. Nevertheless, neither group generally achieves at the level of their hearing peers (DeLana, Gentry, & Andrews, 2007; Geers, Tobey, Moog, & Brenner, 2008; Wauters, van Bon, Tellings, & Leeuwe, 2006). A possible explanation is that DHH children do not have full access to the language and environmental diversity of their hearing peers.

This situation impacts not only language development, but also cognitive development, knowledge of the world, and social functioning, all of which influence each other cumulatively over time (Knoors & Marschark, 2012). Despite DHH students‟ chronic difficulties in reading, recent studies have found that at least from middle school onward they learn just as much from the text as they do from sign language or spoken language in the classroom (Borgna, Convertino, Marschark, Morrison, & Rizzolo, 2011; Marschark, al., 2015; Marschark, Morrison, Lukomski, Borgna, & Convertino, 2013; Stinson, Elliot, Kelly, & Liu, 2009). Those results suggest a limitation on the generality of findings indicating that early access to language via sign language or assistive listening devices is sufficient to provide DHH learners with age-appropriate reading abilities (Geers et al., 2008; Padden & Ramsey, 2000; Fellinger, Holzinger & Pollard, 2012).

Research on the Achievement of DHH Students The academic achievement of DHH students depends on the interaction of many factors, including those that are intrinsic to students themselves, such as expressive and receptive language abilities, family characteristics, and their experiences inside and outside school. Previous studies have been limited in their ability to identify predictors of achievement for DHH students largely because of the confounding of school placement, hearing thresholds, and language modality (Reich, Hambleton, & Houldin, 1977). Research

on DHH students‟ Predicting Achievement of Deaf and Hard-of-Hearing Students academic achievement has also been limited by small samples (Cunningham & Cox, 2003), biased samples (Convertino, Marschark, Sapere, Sarchet, & Zupan, 2009), and other methodological issues. For example, norming of the Stanford Achievement Test (SAT) for DHH students (Margellos-Anast, Estarziau, & Kaufman, 2006; Holcomb, 2010) are unlikely to be representative of DHH students in the general population because they are drawn from students represented in the Gallaudet Research Institute Annual Survey of Deaf and Hard-of-Hearing Children and Youth (henceforth Annual Survey), which is weighted toward students with greater hearing losses and those enrolled in schools for the deaf (Marschark, Shaver, Nagle, & Newman, 2015; Shaver, Marschark, Newman, & Marder, 2014).

Another limitation of prior research has been a narrow definition of academic achievement. Although DHH secondary school students appear to lag hearing peers across the curriculum (Roald, & Mikalsen, 2000; Spencer & Marschark, 2010), previous studies have focused almost exclusively on reading and mathematics. Given the importance of other academic subjects such as science and social studies for postsecondary education and employment, it is important to examine achievement across a wider array of academic domains. Taken together, complexities in predicting achievement and the limitations of prior research emphasize the importance of developing a stronger understanding of how various factors affect DHH students‟ learning and achievement across academic subject areas. Not only will this contribute to the scientific understanding of cognitive and linguistic functioning among DHH learners, but it will also help researchers and educators design educational interventions and supports to improve their academic achievement and post-school outcomes.

The current study drew from the literature on pupils who are deaf learning and academic achievement to identify factors that may predict achievement. Previous studies have addressed the relationship between achievement and characteristics such as hearing thresholds, the presence of additional disabilities, gender, and ethnicity, as well as school placement. Concerning hearing thresholds, reviews by Goldberg and Richburg (2004) and Moeller, Tomblin, Yoshinaga, Itano, Connor, and Jerger (2007) found that even minimal hearing losses, those as small as 15 dB (decibels), can significantly affect academic achievement and literacy, in particular. Marschark at el., (2015) claimed that median SAT reading comprehension scores of students with less than severe hearing losses (< 71 dB) were higher than those of students with greater losses across the age range examined (8 to 18 years). Hearing thresholds among DHH students frequently are confounded with both school placement (students with greater hearing losses are more likely to be enrolled in special schools; Shaver et al., 2014) and preferred communication modality (those with greater losses being more likely to use sign language; Allen & Anderson, 2010).

Comparisons between groups that vary on only one of these dimensions alone are rare. Antia, Reed, and Kreimeyer (2011) and Antia, Jones, Reed, and Kreimeyer (2012) examined writing scores of pupils who are deaf 8 to 18-year-olds in regular classrooms. In both studies, gaps between the pupils who are deaf and hearing norms narrowed with age, suggesting that the pupils who are deaf were catching up with hearing peers. In the 2005 study, pupils who are deaf use of sign language was not related to their writing scores, although those who used sign language interpreters in the classroom scored lower than others. In the 2009 study, communication mode was significantly related to writing scores, favouring those students in programs emphasizing spoken language (Musselman & MacKay, 1996). Predicting

Achievement of pupils who are deaf, Karchmer and Mitchell (2003) found that SAT reading comprehension scores were significantly associated with hearing thresholds, ethnic status, additional disabilities, and school placement as well as gender (advantage females) for pupils who are deaf students aged 8 years and older.

Significant effects of ethnicity, additional disabilities, and school placement also were found for mathematics subtests. Importantly, especially concerning significant relations with hearing thresholds, the Allen and Osborne data were drawn from students associated with the Annual Survey. In a similar study, Holt (1993) reported that median SAT reading comprehension scores were higher for DHH students in general education classrooms than those in separate classrooms. Holt also reported that students with less than severe hearing losses scored higher than those with greater losses. She also found that White students scored significantly higher than minority students, although the latter also were more likely to be enrolled in regular schools with self-contained classrooms for DHH students. Students reported to have educationally relevant disabilities (e.g., learning disability, emotional/ behaviour problems) scored lower than DHH students without additional disabilities. They, too, however, were more likely to be enrolled in self-contained classrooms, leaving undetermined which of these factors might be considered the cause and which the effect of the observed findings.

As with hearing thresholds, the possible link between school placement and DHH students‟ academic achievement remains unclear. Stinson and Kluwin (2011) noted that previous studies had found school placement to account for less than 5% of the variability of DHH students‟ achievement scores. However, in addition to Allen and Osborne (1984) and Holt (1993), several others have reported higher academic achievement among DHH students in regular classrooms than those in special

classrooms or special schools in both the United States (Kluwin, Stinson & Colarossi, (2002) and the United Kingdom. The question, therefore, has remained as to whether apparent links between school placement and achievement are the product of placement (i.e., curriculum, access, expectations) or a reflection of a priori differences among students in language or cognitive abilities, the likelihood of additional disabilities, or parental involvement (Spencer & Marschark, 2010; Stinson & Kluwin, 2011).

Finally, Marschark at el., (2015) studied deaf college students‟ achievement in reading, writing, mathematics, and general academic knowledge using the Woodcock-Johnson III (WJ III) reading fluency, writing fluency, academic knowledge, and math fluency subtests. Although the study involved Gallaudet University students, it used subtests from the WJ III Tests of Achievement, the instrument used in the present study with high school students. The mean scores (of 47–49 participants) were in the average range according to age-based norms, but the range of scores was very broad. This wide variability reflects the difficulty in assessing (and teaching) students in a population with such large individual differences. It also suggests caution in accepting mean scores as reflecting age-appropriate performance for any deaf group as a whole.

The present study was designed to provide an extension of earlier studies that have involved achievement assessed using the SAT, WJ III tests, and tests of classroom learning. Examining relations among WJ III test scores in four academic subject areas and student characteristics in a nationally representative sample of deaf secondary school students, the present study sought to provide a more comprehensive understanding of pupils who are deaf achievement than has been available previously. In particular, this study addressed the question of what individual, family,

communication, and educational factors are associated with variations in the academic achievement among deaf secondary students. Predicting Achievement of Deaf Students.

2.4.1 Teaching and Learning Facilities

Gudyanga, Wadesango, Hove, & Gudyanga, (2014) are of the view that there is a risk of pupils who are deaf being excluded from the teaching and learning that goes on unless measures are taken to make sure they are fully included. This prompted this desktop study on problems associated with the inclusion of hearing impaired students in secondary schools. The study established that besides communication problems, students experienced feelings of anger, frustration and isolation depending on the dictates of the environment. Literature revealed that learning is a process that happens under observable and ideal conditions to the extent that situations in which students are placed deliberately or otherwise had great effects on them. The review of literature focused on the problem and its context. It also emerged that there was an opportunity for teachers and other stakeholders to reflect on their school and classroom practices with hearing impaired students and adopt effective strategies of managing them in inclusive secondary schools.

A study conducted by Adoyo (2008) in Kenya on educating pupils who are deaf in an inclusive setting in Kenya revealed that teachers should use the latest techniques and materials for instruction when working with pupils who are deaf. More emphasis should be laid on showing the practical things to students so that they can easily understand the lesson. Teachers should make diagrams on the chalkboard for explaining the things. On the other hand, the research had done in Bangladesh by Khan (2012) on secondary school teachers‟ perceptions of inclusive education show

that the practice of inclusive education in secondary schools is facing several barriers including lack of teaching materials that hinder teaching process.

Again, Wilson‟s (2005) study in Jamaica on the effectiveness of international development assistance from American organizations to hearing impaired communities show that lack of resources is part of the cause for poor education provision, lack of specially trained teachers and interpreters, and absence of medical care, vocational programs, legal and social services for pupils who are deaf. Also, UNESCO (2003) in Nydal (2008) shows that practice of inclusive education in Tanzania and the countries of the south face limited resources and inadequate facilities, lack of teachers and other qualified staff. Teaching and learning facilities are important in teaching hearing impaired to capture their understanding of a lesson, these go together with teaching and learning methods used by teachers in the classroom.

2.4.2 Teaching and Learning Methods

Cawthon (2001) study on teaching strategies in inclusive classrooms with hearing impaired students shows that the teaching and learning methods for pupils who are deaf in inclusive classes should be focused on individualized approaches of teaching that takes into account the differences and needs of each learner so that every learner could learn effectively.

On the other hand, Reed, Antia, and Kreimeyer, (2008) study on the academic status of pupils who are deaf and hard-of-hearing pupils in public schools shows that classroom factors promoting success for pupils with disabilities, including pupils who are deaf include amount of classroom time devoted to the academic curriculum so that each learner could reach the set objectives. Again, Adoyo (2004) study in Kenya on Kenyan sign language and simultaneous communication; differential effects on

memory and comprehension in pupils who are deaf shows that poor performance of pupils who are deaf is attributed to inappropriate teaching methods and communication problems across the curriculum. URT (2008) report on teacher development management strategy shows that curriculum and teaching such as inappropriate teaching methods can be barriers to pupils who are deaf during the learning process. Apart from teaching and learning methods for hearing impaired students also teachers‟ attitude to pupils who are deaf can contribute to their academic performance.

2.4.3 Teachers' Attitude

Teachers‟ attitude towards inclusion is a very important component for successful inclusion; this determines how the teacher treats the learners and the whole processes of teaching and learning (Reed *et al.* 2008). On the other hand, UNESCO (2009) report on policy guidelines on inclusion in education reveals that teachers‟ positive attitude towards inclusion depend strongly on their experience with learners who are perceived as disabled, teacher education, the availability of support within the classroom, class size and overall workload of teaching in inclusive classes.

Furthermore, Sacks (2001) in Gudyanga et al. (2014) study on challenges faced by pupils who are deaf in Bulawayo urban regular schools revealed that the ordinary teachers were least prepared for inclusive education of children with 15 disabilities. The teachers had little training in dealing with individual differences and specific instructional processes developed for special needs students. The roles and responsibilities of ordinary education teachers were never clearly defined in this process. These teachers and their ordinary pupils were not prepared for the inclusion of children with disabilities. Gudyanga et al. ascertained that the teachers from schools had generally positive attitudes towards the integration of pupils who are

deaf. The teachers strongly supported the belief that the inclusive classes were superior academically, socially and emotionally to the separate special classes. Apart from teachers‟ attitude, pupils also have their attitudes on inclusive education.

2.5 Communication Experiences of Students who are deaf

Language is an essential component of normal development and a means for discovering the world. Pupils who are deaf frequently do not have full access to communication until they have passed the most important ages for language acquisition. Parents and educators of pupils who are deaf therefore often struggle to find a balance between fostering effective early communication skills which, according to research findings is usually best achieved through sign language and the provision of English skills (in this case) needed for literacy and academic success (Marschark *et al.* 2015).

Watermeyer, Swartz, Lorenzo, Schneider and Priestley (2006), revealed that access to sign language enables pupils who are deaf to communicate. They also point out that studies show that when and where sign languages are freely available, pupils who are deaf are not disabled in any social sense. Supporters of the use of sign language believe that deaf learners can be best educated by educators who are themselves also deaf. They also maintain that pupils who are deaf who are prevented from using sign language become isolated from the Deaf community. Thus, the social isolation that orally educated pupils who are deaf can suffer comes from not feeling comfortable or fully capable in either the Deaf or the hearing community.

Devaraj and Malar (2010) also point out that research has shown that the receptive language of learners educated manually is higher than that of orally educated learners. The major challenge facing pupils who are deaf is communication. Pupils who are deaf vary widely in their communication skills. Among the conditions

that affect the development of communication skills of pupils who are deaf are personality, intelligence, nature and degree of deafness, family environment, and age of onset of impairment. Pupils who are deaf require support in one or more of four broad areas of need such as communication and interaction, cognition and learning, behavioural, emotional and social development, and sensory or physical aspect of development (Agomoh & Kanu, 2011; Marschark, Morrison, Lukomski, Borgna, & Convertino, 2013). Hauser, Lukomski, and Hillman (2008) explained that deafness affects children‟s learning development of receptive communication skills if teachers are not literate in the deaf language. If pupils who are deaf attend ordinary schools, their peers lack in language, limiting communication access with them. However, these languages are circumvented substantially in the school setting.

Research has shown that communication experiences of pupils who are deaf are not comparable to their hearing peers (Murphy & Newlon, 1987). Pupils who are deaf in inclusive schools experience feelings of separation and isolation from hearing peers (Foster & Brown, 1989). These pupils tend to socialize with other pupils who are deaf as much as possible (Foster & Decaro, 1991). Foster and Decaro further explained that the issue of learning and writing exams in the English Language, the pressure on pupils in writing notes and communication, the difficulties associated with speech-reading, and the necessity of utilizing an interpreter, all contribute to the lack of interaction between deaf and hearing pupils.

Although the provision of services is a key feature in the education of deaf pupils, yet having Ghanaian Sign Language (GSL), teachers guarantee the students‟ successful inclusion into mainstream classes (Fobi & Oppong, 2016). For example, a pupil who is deaf may have difficulty adjusting to a GSL teacher in a particular class after years of being without this support at a school for the Deaf. Considering

experiences of pupils who are deaf in the DKIC, the World Federation of the Deaf (WFD) expresses a serious difference regarding the implementation of inclusive education for pupils including pupils who are deaf. The WFD (2007) holds that "the least restrictive environment for pupils who are deaf is the most enabling environment" (De Beco, 2014. p. 11).

Bisol, Valentini, Simioni, and Zanchin (2010) explored the experiences of students who are deaf who attended bilingual schools and identify with the deaf culture in Portugal. They used three young women and two young men, between 21 and 27 years old, who had been enrolled in undergraduate courses for at least three semesters. The work consisted of semi-structured, individual interviews, conducted by female students who are deaf scholarship-holder and recorded on video; these interviews were later translated into Portuguese and analyzed for their content. The results highlighted how challenging it is to adapt to a world of people who, for the most part, have normal hearing, the difficulties of moving between sign language and Portuguese, the need to maintain identity points of reference that are valued by those who hear normally, as well as the importance of reorganizing teaching strategies and evaluating the involvement of the Brazilian Sign Language interpreter. The gap in Bisol et al. (2010) study to be filled by the current study is that Bisol et al. concentrated only on the academic experiences, but did not focus on social, communication experiences and coping strategies of pupils who are deaf. Also, Bisol et al study was conducted at the tertiary level hence there is the need for a similar study at the basic level.

Ball (2010) stressed that for pupils who are deaf to experience success at the basic level, intensive, ongoing collaboration and information sharing and encouragement must exist among the teachers, interpreters and students. Cawthorn

and Cole (2010) indicated that pupils who are deaf face unique challenges in their efforts to communicate and succeed in an inclusive school. Unlike their hearing peers, pupils who are deaf particularly rely on support services such as interpreters and note-takers to assist them in communication. The pupils who are deaf believe the mainstream schools do not provide a sufficiently inclusive and accessible environment that embrace the perspectives of all pupils because of communication problems (Cawthorn & Cole 2010).

Bisol et al., (2010) stated that pupils who are deaf generally enter the schools with little knowledge of the world, due to the communication restrictions that are to be found in their own families, in those cases where the parents can hear. The tendency is to direct learning to apply in day-to-day life, aiming to provide a reasonable level of understanding of happenings and the development of social and professional skills. Many institutions lay more emphasis on socialization than on formal knowledge acquisition and the development of critical thinking.

Pupils might also vary in opinions on the important situational factors and resources that influence access to and comfort with communication. Possible important issues include the communication practices and attitudes of the hearing teachers, relationships with pupils who are deaf, and the quality of interpreting services. For example, among pupils who prefer using speech, tactics for dealing with hearing teachers in the classroom may be different than among pupils who prefer using voice and sign or only sign.

Previous research suggests that issues of importance to pupils who are deaf in mainstream classes regarding communication access include understanding their hearing teachers, understanding hearing classmates, being understood by their teachers and classmates, and keeping up with the pace of the class (Iantaffi, Jarvis, &

Sinka, 2003). Hearing teachers may speak extremely fast, move through material very rapidly, and maybe insensitive to the needs of deaf students trying to follow the lecture through an interpreter (Dunne, 2013). Regarding the conversations of peers, pupils who are deaf report missing information, not catching side conversations and jokes, and failing to grasp the full flavour of a discussion even when an interpreter is present (Iantaffi, Jarvis, & Sinka, 2003). Hersh (2012) found in interviewing deaf employees about hearing coworkers that deaf employees were not included in the conversations because the hearing employees would need to slow the pace of conversation, take turns, and face the deaf employee while speaking.

Pupils who are deaf in mainstream settings may encounter similar difficulties. Keeping up with the pace of the class is often a challenge for deaf students. Students using an interpreter must follow the transliterated message, which lags behind the spoken one. Pupils who are deaf are likely to devote considerable effort simply to comprehending the message through lip reading. For either group, participating in a discussion is often difficult.

Difficulties increase when the pace of the discussion is hurried which may be encouraged by the teacher or when more than one pupil speaks at a time (Graham, Harris, & Larsen, 2001). While deaf and hard-of-hearing pupils in main inclusive settings frequently encounter difficulties such as those described above, specific communication needs vary from pupil- to -pupil. For example, some hard-of-hearing pupils may be very concerned about how classmates speak because comprehension of speech is important for successful interaction. While most pupils who are deaf may not have these concerns, they are likely to be concerned about the interpreter's effectiveness. Issues regarding access in the mainstream classroom primarily concern communication with hearing individuals. Communication with deaf peers is generally

not mentioned as difficulty (Iantaffi, Jarvis, & Sinka, 2003). Sometimes, however, there may be communication difficulties among deaf peers, such as in some situations where pupils who are deaf who do not know sign language interact with those who use it for most communication.

Pupils who are deaf vary in their preferred ways of communication (Antia, Stinson & Gaustad, 2002). From a simplistic viewpoint, some pupils generally prefer to express themselves using speech and prefer to receive communication through the oral/ aural modality. Other pupils prefer to express and receive communication through signing. But the communication preference continuum is more complex than this, because deaf individuals vary in the way they communicate, depending on the situation. In communicating with hearing peers, for example, some pupils prefer using speech only. Others may use both speech and sign, while still others may use sign only. Deaf people use a variety of styles and strategies for communication, depending on who is doing the communicating and with whom and on the setting (Newell, Stinson, Castle, Mallery- Ruganis, & Holcomb, 1990). For example, although deaf individuals vary in communicating with hearing peers, they might prefer consistently to communicate with each other through sign. Antia et al., (2002) approach to examining variation in communication preference among deaf adolescents in local public high schools provides an example of grouping students in terms of how they respond in different communication situations. The largest group of students, 40.6%, as those who used both speech and signs and choose whether to speak, sign, or use both, depending on the characteristics of his or her interlocutor.

These pupils seemed to be the most adept at using a variety of modalities in different communication situations. Other groups of pupils were those who spoke to both deaf and hearing audiences, those who signed to deaf and hearing audiences, and

those who reported only interacting (i.e., signing) with a deaf audience. These groups showed complexity in variation in communication preference that went beyond the simple "oral manual" dichotomy. Variations in communication preference may relate to students' perceptions of communication ease in the mainstream classroom. For example, students who report being comfortable in using speech with hearing peers may report greater communication ease in mainstreamed classes than pupils who report being uncomfortable in using speech with hearing peers in these settings.

There is certainly some relationship between the expressive and receptive communication practices of deaf individuals in given situations, but the extent of this relationship may vary, depending on the individual and the setting. For example, many pupils who in mainstream class settings are comfortable using their speech with hearing persons may also find that hearing persons communicate directly with them through speech rather than through paper and pencil or an interpreter. However, other pupils who are deaf who report using speech to communicate with hearing peers use an interpreter to understand teachers and hearing peers in class. This investigation also considered whether groups varying in expressive communication with hearing persons in inclusive classes also varied in how they communicated with deaf peers.

Jarvis, (2003) explained that direct communication between pupils who are deaf and teaching staff were identified as important to the pupils who are deaf positive learning experience. The supports that the deaf students perceived as the teacher communicating directly with them included:

- “If the teacher does some signs, a little bit of signing, like “tree”, “rain” etc, that helps me.”
- “Teachers can write things down when explaining things to me.”
- Using pointing (p. 25)

Strategies for communicating directly with pupils who are deaf in the class were perceived by the teaching and support staff to include using more of a visual approach and to "chat" with the pupils who are deaf occasionally, instead of only communicating via the support staff. A member of the support staff suggested that it would be quite nice if [the teachers] knew the sign names of the pupils just to make it a bit more personal (Jarvis, 2003). However, certain mainstream teachers were identified as initiating communication with pupils who are deaf by using eye contact, simple gestures and also disciplining the pupils who are deaf when they misbehave: "Whether it is to discuss something, to point something out or, you know, to treat them like any other kid."

The Royal National Institute of the Deaf revealed the relationships depend upon good communication and therefore for pupils who are deaf there are likely to be issued with this area This is reflective of the perception that communication is central to social interactions and building relationships (Esera, 2008). This can also be seen concerning the communication between the pupils who are deaf and inclusive teachers. The current study, therefore, sought to explore the social, academic, communication experiences and coping strategies of pupils who are deaf at DKIS.

2.6 Coping Strategies of the Pupils who are deaf

Hearing loss affects many dimensions of experience, including psychological and social functioning. One area of development that demands close examination is the social relationships that deaf pupils form with their hearing peers. Today, children with disabilities increasingly share educational environments with hearing children. In the USA, over 40% of deaf and hard of hearing children attend mainstream schools (Holden-Pitt & Diaz 1998); in the UK, the number of mainstreamed deaf students is approximately 85% (Watson, 1999).

Placing deaf pupils in inclusive and mainstream schools increases opportunities for contact between deaf and hearing students (Aseery, 2016). This poses a question of what is the quality of the relationships formed between pupils with a different hearing status. To fully examine the effects of education in the mainstream‟s „least restrictive environments‟ on deaf pupils, research has started to focus on the social dimension of the educational experience (Martin & Bat-Chava, 2003). Although many deaf pupils educated in mainstream and inclusive schools achieve good academic outcomes (Stinson & Antia 1999), they also show signs of greater isolation and psychological difficulty compared with children who attend schools primarily with other deaf peers (Stinson & Antia 1999). One study assessing the social status of pupils in a mainstream school reported that 39% of deaf pupils were „rejected‟ by their peers compared with 13% „rejected‟ hearing children. Moreover, deaf pupils were well aware of the rejection and rated themselves as less desirable than their „accepted‟ peers on a measure of self-worth (Martin & Bat-Chava, 2003). Another study found that deaf pupils tended to be neglected by their hearing peers rather than actively disliked and that their friendship nominations were not reciprocated (Rautiainen, 2009). The primary barrier to deaf children‟s relationships with hearing peers is communication difficulties. Deaf pupils‟ ability to hear and understand spoken language varies greatly, depending, among other things, on the extent of their residual hearing, communication competence, type of amplification used, and the acoustic properties of the environment. Even when deaf pupils receive extensive oral training, untrained listeners may not always understand them, and for the children‟s communication to be successful a significant effort may be required.

Combined with impatience on the part of hearing children, unclear speech may constitute a major barrier to deaf– hearing communication (Punch, 2005). In addition to communication difficulties, studies suggest that pupils who are deaf often lack social skills appropriate to peer interactions. Various explanations have been offered for this finding, including the fact that many hearing parents do not realize for a long time that their infants are deaf and therefore do not address their communication needs early on, and unsatisfying play interactions between deaf and hearing children (Marschark, Green, Hindmarsh & Walker, 2000). Another factor that affects deaf children‟s social interactions in mainstream settings is a frequent misunderstanding of their communication needs. For example, when a deaf pupil asks for information to be repeated, hearing children may perceive such request as either a lack of comprehension (incompetence) or lack of attention (indifference). Similarly, the need for physical contact (e.g. tapping someone‟s shoulder) to attract a deaf child‟s attention or the necessity of facing one‟s audience to facilitate speech reading may violate social rules of hearing people, placing deaf pupils at risk for peer rejection. Although at greater risk for encountering social difficulties compared with hearing children, deaf pupils‟ social experiences in mainstream schools vary widely (Christiansen & Leigh 2002). A study of children with cochlear implants showed that many deaf children succeed in forming close and satisfying relationships, despite the challenges posed by deaf–hearing interactions (Bat-Chava & Deignan 2001).

Another study of pupils who are deaf using hearing aids found that although overall, pupils who are deaf social status was lower than hearing children‟s, the same proportion of pupils who are deaf was voted „popular‟ as when children were selected from the list of hearing peers. Studies also found that degree of hearing loss is typically not related to pupils who are deaf adjustment, suggesting that other factors

may structure children‟s social experiences in the mainstream (Martin & Bat-Chava, 2003). Similarly, the wide variability of social outcomes manifested by deaf children in mainstream settings suggests that deaf children‟s interactions with hearing peers may be effectively shaped by the use of specific adaptations.

The Laurent Clerc National Deaf Education Center (2016) revealed that approximately 2.5 million pupils who are deaf receive their education alongside pupils with hearing in general education classrooms. Inclusion classroom refers to classrooms in which students with and without disabilities are educated together. In this system, necessary support is provided to pupils with special needs to maximize their learning (Mastropieri & Scruggs, 2000). The main goal of inclusive education is to provide equal educational opportunities to pupils with special needs such that they can access general education curriculum in the least restrictive environment (Blecker & Boakes, 2010; Heiman, 2004).

Historically, since 1975, federal law has required that children with disabilities have access to a Free Appropriate Education (FAPE) in the least restrictive environment (LRE) (Cross, Salazar, Campuzano, & Batchelder, 2009). In the inclusive environment, the educational system is designed based on students‟ individual needs, as this facilitates the academic and social improvement of each learner. Therefore, the adaptation of curriculum, including appropriate instructional strategies, additional academic support, and prevention of social isolation, is central to the creation of a more inclusive educational environment (Eriks-Brophy & Wliittingham, 2013; Fishers, Frey & Thousand, 2003; Thomazet, 2009). Research regarding possible inclusion-based benefits suggests that educating pupils who are deaf in general education classrooms enables them to practice their language skills with hearing peers and develop rich vocabulary knowledge. Being placed in a hearing

environment helps to facilitate their lives as it permits them to more easily communicate with hearing people and allows pupils who are deaf greater opportunities to be a part of the hearing communities where they live (Berndsen & Luckner, 2012; Eriks-Brophy et al., 2006).

Nevertheless, other studies indicate that placing students who are DHH in general education classrooms does not automatically ensure that they will further develop their social and academic skills. An environment in which pupils who are deaf do not receive additional academic support or find opportunities to interact with their peers with hearing does not serve as an inclusive setting that effectively facilitates students‟ development. Moreover, a lack of opportunities results in withdrawn and poor academic achievement for these students (Antia, Stinson & Gausted, 2002; Bobzien, Richels, Raver, Hester, Browningn & Morin, 2013; Luckner & Muir, 2002). To maximize the effectiveness of the inclusive environment for academic, social and communication development of pupils who are deaf, the environment should be enriched with opportunities that include effective teaching strategies and materials, effective classroom settings, and effective activities for pupils who are deaf to interact with students with hearing and teachers (Eriks-Brophy et al., 2006; Schultz, Lieberman, Ellis & Hilgenbrinck, 2013).

2.6.1 Instructional Strategies

Even though there has been an increase in the number of pupils who are deaf in inclusive settings, not all educational environments are properly equipped to meet these students‟ special needs (Berndsen & Luckner, 2012). A classroom may include different types of learners including pupils who are deaf; therefore, teachers should consider pupils‟ diverse needs when developing their means of instruction. This is significant to ensure that all pupils‟ learning needs are met via instruction, and it can

be achieved when educators employ instructional methods that permit them to teach content in many different ways (Cross, Salazar, Dopson-Campuzano, & Batcheldar, 2009). In a study on successful pupils who are deaf, the pupils who are DHH and their teachers who were interviewed reported that both vocabulary support and additional teaching have a great impact on pupils‟ achievements (Ayantoye & Luckner, 2016). Besides, teachers in the aforementioned study most frequently stressed differentiated assignments, repetition of information, and visual support as the most significant facilitators. The length of instruction is important since shorter or brief instruction and discussions are more meaningful for students pupils who are deaf (Cawthon, 2001; Reich & Lavay, 2009). According to Berndsen and Luckner (2010), general education teachers have to be aware of that the pace of the instruction and discussions, and quick changes in topics especially challenge students who are hard of hearing to access information sufficiently. Also, they found that allowing multiple speakers to talk at the same time prevents students who are hard of hearing from being able to follow classroom discussions effectively.

The results of some studies (Berndsen & Luckner, 2012; Cannon, Frederick, & Easterbrooks, 2010; Schultz et al., 2013; Reich & Lavay 2009) support the importance of providing information with visuals. Since visual supports have a big impact and have the ability to enhance students‟ understanding of instruction, supporting the instruction with visual aids, such as videos, smart boards, iPads, posters, facial expressions, gestures, body language, and demonstrations, is necessary for pupils who are deaf (Schultz et al., 2013). In their study, Trezek, Wang, Woods, Gampp, and Paul (2007) found that after implementing a reading curriculum that was enhanced via visual support, there were statistically considerable differences observed between pupils who are deaf pretests and posttest pertinent to the reading curriculum.

In another study, Angelides and Aravi (2007) found that the academic and social environment affects pupils who are deaf engagement and thus affects their academic success. To facilitate understanding among pupils who are deaf, teachers may attempt to instruct their students in different ways, set goals based on pupils‟ abilities, and clarify lessons by providing text; and all of these play an important role in student achievement. In the authors‟ research, the pupils who are deaf were initially struggling to understand the content of a history lesson because of the complexity of the lesson and because the pupils‟ vocabularies were relatively limited. After recognizing the pupils‟ difficulties, the teacher simplified the text by making the new vocabulary words clearer and simpler to understand. Furthermore, the teacher provided the vocabulary words in written format via the overhead projector. As a result of the teacher‟s actions, both students with hearing and pupils who are deaf demonstrated a greater understanding of the course content and achieved greater success in the history class.

2.6.2 Seating Arrangement and Noise Management

An effective seating arrangement can enable pupils who are deaf to see other students and the teacher easily, to participate in both individual work and group activities, and to follow classroom discussions easily (Guardino & Antia, 2010; Trussell, 2008). Trussell (2008) also found that the physical environment of the classroom can increase students‟ engagement and involvement. The teachers in Trussell‟s study could easily rotate between desks and thus had better control of their classrooms. Enabling the students to see the teachers easily increased the pupils who are deaf involvement in the lessons and activities and decreased the unexpected behaviours of these students. The results obtained by Eriks-Brophy et al. (2006) underscore the importance of classroom arrangement and the seating of pupils who

are deaf that can enable some these pupils to see facial expressions and hand gestures. This also better facilitates the lip-reading abilities of some pupils who are deaf (Eriks-Brophy et al., 2006; Schultz et al., 2013).

Moreover, Eriks-Brophy et al. (2006) found that including facilitative strategies in the learning environment was crucial to teachers‟ and students‟ abilities to make the most of instruction. For example, in addition to students‟ seating arrangements, the rate at which teachers speak, whether teachers provide lesson content and assignments in written format, and teachers‟ stances while speaking are significant factors that can serve to increase their understanding of the information. Schultz et al. (2013) also state that pupils who are deaf can especially benefit from the positions in which teachers stand while talking; more facilitative positions or stances allow students to more effectively and more explicitly receive information. Similarly, noise management is necessary for pupils who are deaf to be able to receive a spoken language clearly (Bradlow, Kraus & Hayes, 2003).

The previous study concluded that although noisy environments affected both typical and special needs students, noisy environments affected special needs students more severely. As seen in Crandell and Smaldino‟s study (2000), the quality of speech perception of students who are hard of hearing decreased when they were in noisy environments. In their study, noises that may affect students who are hard of hearing are identified under two categories as noises that come from outside of classrooms and noises that occur in classrooms. The noises from outside of classrooms may originate from constructions, traffic, and playgrounds. Inside noises are described as individual talking, heating and air-conditioning systems, etc. Students who are hard of hearing experienced more difficulties than students with normal

hearing when attempting to listen and learn in noisy environments that easily distract them and may cause a decrease in their academic engagement (Nelson & Soli, 2000).

2.6.3 Assistive Listening Devices

To amplify and intensify speakers‟ (referring to teachers) voices for pupils who are hard of hearing, sound-filed amplification systems such as FM systems and desktop speakers can be used effectively in classrooms. In the FM systems, signals from teachers‟ microphones go directly to students‟ hearing aids (Larsen & Blair, 2008). A study conducted with 13 students who are hard of hearing investigates the benefits of FM systems, and the findings indicate that FM systems have positive impacts on the speech perception of students who are hard of hearing who use hearing aids. The results of this study show that the students who are hard of hearing demonstrate better understanding in the classroom environment, especially in a noisy environment, after the implementation of FM systems (de Souza Jacob, Bevilacqua, Vilela Molina, Queiroz, Hoshii, Pereira Lauris & Mortari Moret, 2012).

Boothroyd and Inglehart (1998) emphasise the benefits offered by FM amplification systems to learners with hearing aids or cochlear implants. FM systems are used in classrooms to combat three factors that make it difficult for learners with hearing loss to hear the educator: distance from the educator, background noise and sound reverberation.

Davies, Yellow and Purdi (2001) add that reverberation refers to the persistence of a sound due to sound waves reflecting off hard surfaces. The intensity of reverberation depends on the size of the room and the degree to which the room contains materials that reflect, rather than absorb, sound. Mahshie, Moseley, Scott and Lee (2006) add that technological advances provide many options in assistive listening devices for deaf learners. Many considerations must be taken into account in

selecting and fitting appropriate amplification devices. Auditory technologies can enhance a learner‟s ability to perform effectively and can assist the learner to meet his or her full potential. It is acknowledged that each learner is unique and thus has a unique set of educational needs. Educators at regular schools should be well informed on how to optimise communication access for pupils who are deaf through hearing and vision to support them in the inclusive classrooms.

2.6.4 Interpreters' Roles in General Education Classrooms

Cawthon (2001) outlined the role of interpreters in the general education classroom is not only to provide a translation between teachers‟ speech and sign language. An interpreter can also assist pupils who are deaf while they communicate with hearing peers. Moreover, interpreters can support the instruction by repeating the given information, clarifying material, and sometimes giving voice to pupils who are deaf in classroom discussions. Further, as indicated in a study conducted by Zawolkow and DeFiore (1986), in addition to promoting communication between these students and their teachers and their hearing peers, interpreters sometimes provide tutoring for pupils who are deaf. Luckner and Muir (2001) also documented the role of interpreters in inclusive classrooms. The authors‟ study included semi-structured interviews with pupils who are deaf, their parents, teachers, and interpreters, and the findings supported those of Cawthon‟s work about the role of interpreters in the inclusive classrooms. The study results show that all of the interviewees recognized the interpreters as the primary human sources for the success of the pupils who are deaf in general education classrooms. Therefore, the collaboration between interpreters and classroom teachers is underscored in those studies as a means of facilitating the inclusion of pupils who are deaf.

Generally, Ayantoye and Luckner (2016) provide convergent evidence regarding teachers‟ roles in pupils‟ success. The findings obtained from the interviewee teachers, all of whom taught successful pupils who are deaf, illustrate the effectiveness of teachers‟ roles in the inclusion of pupils who are deaf. All of the teachers in the study agreed that they were aware of what these pupils who are deaf specific needs in terms of education and socialization. The teachers noted that providing pupils who are deaf with additional support, identifying the needs of the pupils who are deaf, and encouraging them were the most significant factors that led to their achievements. As the literature has suggested, ensuring successful inclusion, appropriate classroom strategies should be employed within the learning environment to support the inclusion of pupils who are deaf. Ayantoye and Luckner study aimed to observe these strategies like general education classrooms and identify how general education teachers use them in their teaching practices. The current study, therefore, sought to explore pupils who are deaf social, academic and communication experiences at KDIS. Yekple and Deku (2011) outline the following guidelines in managing pupils who are deaf in the inclusive classroom.

- Allow the child to sit at a place convenient for him or her to take advantage of visual and auditory cues from the teacher and the chalkboard.
- Sit the child away from sources of background noise (e.g windows, doors, learning centres, and cooling system).
- Write directions in short sentences
- Use pictures or any concrete materials for visualization of abstract concepts
- Avoid moving around the classroom constantly especially when talking. Use gestures, body language, and facial expressions to emphasize ideas.
- Require all children to raise their hands before addressing the class.

- Avoid speaking rapidly, but speak clearly
- Keep to a minimum all auditory and visual distracters such as noise from the room, other rooms, and outside.
- Face the child when talking
- Good eye contact must be maintained
- Do not talk to the chalkboard while writing
- Do not exaggerate the movement of the mouth when speaking
- Write key points mentioned orally on the chalkboard
- Visual aids have greater significance as a teaching strategy (pp. 56-57).

2.7 Summary of Chapter

This chapter reviewed related literature on the research topic, empirical literature and the theoretical framework. The chapter was discussed under the following strands: (1) social experiences of pupils who are deaf at DKIS, (2) academic experiences of pupils who are deaf at DKIS, (3) communication experiences of pupils who are deaf at DKIS and (4) copping strategies of the pupils who are deaf at DKIS. The theoretical framework was also discussed.

From the above literature, none of these studies mentioned has tried to explore the coping strategies of pupils who are deaf at Diamond Kids Inclusive School (KDIS).

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter outlines the methods used in data collection. It consists of the research approach, research design, the population, sample size and sampling technique, instrumentation, procedure for data collection, validity, reliability and data analysis.

3.1 Study Area

The study was conducted in DKIS which is an inclusive basic school for the deaf and hearing pupils. The school was established in the year 2005 in Nsawam-Adoagyiri Municipality of Ghana following the scarcity of basic schools for the deaf in Ghana. DKIS is one of the private schools in Ghana, it was deemed necessary to start an institution of such kind at the sited location. This was so due to the economic viability of the location. The medium of instruction is mainly Ghanaian sign language (GSL). The total enrolment in the school was 180 pupils including those who are deaf which consist of 34 males and 36 females. The school had 15 teachers and 6 non-teaching staff. A total population of 22 pupils who were deaf were targeted, but only 15 of them were purposely sampled for the study because they were fluent in the use of sign language to express their experiences and coping strategies.

3.2 Research Approach

Qualitative research approach was adopted to examine the experiences of deaf students at Diamond Kids Inclusive Complex, Nsawam. The approach was suitable for the current study because it sought to explore pupils live experiences within the academic setting. Pupils would express their live social, academic, communication

experiences and coping strategies in an inclusive setting. This procedure will allow `data to be collected through interviews of respondents.

A qualitative research approach was adopted because it helped to provide a rich description of the phenomenon under study. Also, the study focused on experiences phenomenon in their natural setting to bring meaning in their uniqueness (Boateng, 2014). Moreover, the qualitative approach is more appropriate for this research than quantitative approach because attitudes and perceptions cannot be quantified (Mazooue, 2011). Creswell (2012) explained that a qualitative research approach is used in research to explore people‟s lives, lived experiences, behaviours, emotions, and feelings as well as organizational functioning, social movements, cultural phenomena and interaction between nations.

In qualitative research, words are emphasized in the process of data collection and interpretation (Creswell & Creswell, 2018) described qualitative research as an approach that is applicable for social science inquiry, particularly that which deals with human behaviour. The goal of most qualitative studies is not about maximizing generalization, but rather, to glean a rich, contextualized understanding of some aspect of human experience through the intensive study of particular cases (Creswell & Clark, 2011). Therefore, qualitative research was found to be the most appropriate method for the current study since it allowed the researcher to collect information that was needed to back-up other similar studies.1

3.3 Research Design

This study employed a phenomenological design because it focused on the commonality of lived experiences of deaf pupils in an inclusive environment. The fundamental goal of the approach was to arrive at a description of the nature of the particular phenomenon (Creswell, 2013). Ary, Jacobs, Sorensen, and Razavieh (2010)

explained that phenomenological studies are meant to explore participants‟ perspective and experiences of a phenomenon. Rooted in philosophy and psychology, the assumption is that there are many ways of interpreting the same experience and that the meaning of the experience to each person is what constitutes reality. Vanderstoep and Johnston (2009) stated that phenomenology asks for the very nature of a phenomenon, for that which makes something that it is, and without which it could not be what it is. A phenomenologist sees things as they are and establishes the meanings of things through illumination and explanation rather than through taxonomic approaches or abstractions, and develops theories through the dialogic relationships of the researcher to researched (Cohen, Manion & Morrison, 2007).

Phenomenology moves from individual experience to a universal essence and always asks what is the nature or meaning of something (Ary et al., 2010). In a phenomenological study, there should an issue that for better understanding requires a shared experience of the individuals involved. Therefore, this study allows deaf students to share their lived experiences in an inclusive school environment at a basic level.

3.4 Population

The population for the study consisted of 22 pupils who were deaf at Diamond Kids Inclusive School Complex. Pupils who are deaf including pre and post-lingual deafness were qualified to participate in the study. Pupils who were deaf were chosen from the primary department in the basic school comprising primary 3, 4, 5, and 6. This is because pupils who are deaf at the primary department were very fluent in the use of sign language. The only exclusion criteria for the study were pupils who could not use sign language. Fifteen (15) of these pupils who are deaf were purposively sampled for the study because they were much fluent in the use of the sign language.

The target population had bilateral hearing losses ranging from severe to profound, and all of them communicate through sign language. (See Appendix C for audiograms of pupils)

Table 1: The population of the Participants

Class	Population	Male	Female
Class 3	4	1	3
Class 4	4	3	1
Class 5.	7	4	3
Class 6	7	5	2
Total	**22**	**13**	**9**

3.5 Sample Size

The sample size for the study was 15 pupils who were deaf, comprising 9 males and 6 females aged between 9 and 37 years. The respondents were sampled from the Primary level precisely classes 3, 4, 5, and 6.

Table 2: Sample Size of the Participants

Class	Sample Size	Male	Female
Primary 3	1	0	1
Primary 4	3	2	1
Primary 5	6	4	2
Primary 6	5	3	2
Total	**15**	**9**	**6**

3.6 Sampling Technique

Purposive sampling technique was used to select fifteen (15) deaf pupils who could use sign language for the study. Participants who had severe to profound bilateral hearing loss were purposively sampled for the study. Only pupils whose preferred mode of communication was Ghanaian Sign Language (GSL) were selected for the study. Fraenkel and Wallen (2009) and Avoke (2005) explained that purposive sampling technique is a technique in which researchers use their judgment to select a sample that they believe, based on prior information, will provide the data they need.

Kusi (2012) stated that to a purposive sample, a researcher begins with specific perspectives in mind that he or she wishes to examine and then seeks out research participants who cover that full range of perspectives. (Creswell, (2005) added that purposive sampling techniques are more suitable for studies located within the qualitative framework than studies that fall within the quantitative framework.

3.7 Instrument

A focused group interview guide was used to elicit data from the participants for the study. The focused group interview guides were designed by the researcher. Focus group interview encourages participants to speak out so that the researcher can learn the ranges of views of participants to generate both collective and individual view of a phenomenon (Bogdan & Biklen, 2007). O'Donoghue (2007) described a focus group interview as a face-to-face encounter between the researcher and a group of participants with the focus on finding out participants' perspectives on their lives, experiences or situations as expressed in their own words on the main variables raised in each of the research questions. There were three focus groups each group was made up of five participants.

The focused group interview guides were designed strictly in line with the research questions which sought information on respondents' social, academic, communication and coping strategies at the Basic school level. On average, each interview section was anticipated to last for 40 to 45 minutes. Fraenkel and Wallen (2009) noted that interview is one of the main techniques used to collect data in qualitative research. In the interviews, the researcher included probes and prompts to aid further exploration of his line of questioning.

The probes and prompts helped to explore and develop views of respondents and to prevent respondents from going off the mainline of questioning (De Leeuw, 2001).

The interview questions were guided by the themes in the research questions raised, namely; social experiences of students who are deaf, academic experiences of students who are deaf, communication experiences and the coping strategies of students who are deaf. The interview guides were designed in the English language because English is the official language of instruction in schools in Ghana.

3.7.1 Validity

Vanderstoep and Johnston (2009) explained validity as the ability of an instrument to measure what it is intended to measure. Content validity was adopted to ensure the validity of the interview items. In this regard, the semi-structured interview items were developed to cover the key themes raised in the research questions. Macmillan and Schumacher (2001) indicated that participants‟ in-depth interviews need to be conducted in natural settings to reflect the reality of life experiences more accurately than do laboratory settings. In this study, however, the focused group interviews were conducted in the natural setting of the participants which is the classroom.

3.7.2 Reliability

The interview guide was discussed with the researcher‟s supervisor- a professional in the field of deaf education before it was administered. Competent sign language users assisted the researcher to review the videotaped interview. According to Creswell (2012), reliability means that scores from an instrument are stable and consistent. Creswell further indicated that scores should be nearly the same when researchers administer the instrument multiple times at different times. To ensure the reliability of the interview items, two skilled sign language interpreters from the University of Education, Winneba (UEW) were employed to proof watch the video-recorded interview and transcribe interview to ensure the accuracy of translations.

Each video-recorded interview and transcription was given to the supervisor to check on the accuracy of the recordings and transcriptions. Merriam (2009) indicated that a review by a supervisor on some of the videotapes and assessing whether or not the findings of a study are consistent with their knowledge of the Deaf community, based upon the data, helps to ensure the soundness of the findings.

3.8 Procedure for Data Collection

Before the data collection, permission to enter the school for research purpose was requested from the headmaster of Diamond Kids Inclusive Complex. To facilitate this introductory letter was obtained, introducing the researcher as a Mphil student of the University of Education, Winneba in the department of Special Education. Also, because the research involved deaf pupils who are regarded as minors as define by the Ghana Constitution, verbal consent was sought from parents of the participants before the study commenced.

A pre-visit was made by the researcher to the Diamond Kids Inclusive Complex to explain the purpose of the study to participants. Participants were assured of the necessary confidentiality of information to be gathered and to book appointments with them. The researcher gave two-day training on how to administer the focused group interview guides to two research assistants who were both males and had completed the University of Education, Winneba. The two research assistants were chosen because they were fluent in the use of Ghanaian sign language (GSL). The two trained research assistants assisted in the administration of the interview. Their ages were 28years and 25years respectively, and both received a bachelor"s degree in Special Education (Education of the Hearing Impaired) from the University of Education, Winneba. One of these research assistants was from the University of Education, Special Education Department and the other from Diamond Kids Inclusive

Complex. The two research assistants were chosen because they were full-time teachers and were more fluent in the use of Ghanaian sign language. The assistants were oriented on the purpose of the study and intention of each item on the interview guide. The day of the interview was scheduled. The researcher used a focus group to interview the participants. Participants were grouped into three each consisted of five participants. The researcher used two days to conduct the interview. Two groups were interview on the first day and on the second day only one group was interviewed. Tables and chairs in the classroom were arranged in a circular form, there were three circles each have five tables and chairs with five participants which enabled free movement. One of the research assistants issued instructions to participants on how to respond to the interview guides while the researcher and the other research assistants were also in the classroom to give guidelines. The interview sessions lasted between 40 to 45 minutes because participants needed more time to provide their responses.

The participants were allowed to express their feelings and experiences without undue pressure on them. Each interview was conducted using sign language and recorded into videotape device which was later translated into Microsoft word by cross-checking with separate transcription by the two research assistants. The focused group interview guides were administered by the researcher and the two research assistants in the resource room on 19th November 2019 and 26th November 2019.

3.9 Ethical Considerations

In any type of research that is conducted with human subjects, ethical concerns related to participants‟ safety are of the utmost importance. To ensure that participants‟ health, safety, respect, and fidelity were upheld, the researcher would discuss with the parents of participants voluntarily regarding their participation in the study without any form of coercion. To guarantee their confidentiality, the researcher

will not ask participants to provide data that revealed personal identity. The rights of respondents at every stage of this study were treated with the utmost care. The researcher informed parents of participants regarding who would have access to the information in the study and explained the purpose of each person having the information.

3.10 Data Analysis

Data collected from the interview were transcribed verbatim by the two-research assistants. The transcription was done by playing back the recorded version of the responses. The two different transcripts were compared to ensure accuracy in the transcription of the recorded responses. The transcribed version of the responses was submitted to a cross-section of the respondents to read through to make further corrections. The data were then categorized into themes concerning the research questions. Quotes from respondents were used to support their respective themes. The researcher developed codes with the emerging themes from the transcriptions. Bogdan and Biklen (2007) stated that coding allows for the categories and patterns emerging from data to be decided in advance, and facilitates the interpretation of smaller units.

A thematic approach is the most common form of analysis in qualitative research. It emphasizes pinpointing, examining and recording patterns within data. Themes are pattern across data set that are important to the description of a phenomenon and are associated with specific research (Cresswell, 2005). Verbatim expressions of the respondents were used in reporting the data where necessary.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF RESULTS

4.0 Introduction

This chapter provides the analyses and discussion of the findings of the study. Data were analysed to reflect the following themes as raised in the research questions:

- The social experiences of pupils who are deaf.
- The academic experiences of pupils who are deaf.
- The communication experiences of pupils who are deaf.
- Coping strategies of pupils who are deaf.

The various themes enabled the researcher to explore the life experiences of pupils who are deaf at DKIS: the perspective of pupils who are deaf.

Research Question 1: What are the social experiences of pupils who are deaf at the DKIS?

The social experiences of the pupils who are deaf were explored by how they commute from their homes to school, how they interacted with their friends on the way to school within the school and outside the school environment. The study findings indicate that almost all of the pupils who are deaf walk to school; some among the participants mention they do that alone. However, most of these pupils who are deaf return with their school colleagues both hearing and deaf. On this, some pupils remarked:

> *I walk alone to school in the morning and sometimes, I walk back home with some friends (Verbatim expression by a pupil in Group 2)*

Another pupil remarked that:

> *I walk alone to school in the morning and sometimes, I walk back home with some friends (Verbatim expression by a pupil in Group 2)*

One pupil added that:

> *I walk to school together with my senior sister who is also deaf. (Verbatim expression by a pupil in Group 3)*

Another pupil said:

> *My father sends me to school every day. (Verbatim expression by a pupil in Group 1)*

On the other hand, the study found that some participants went to school with automobiles such as motorbike or school bus.

> *I take the school bus to school and I walk back home sometimes with my friends (Verbatim expression by a pupil in Group 3)*

Another pupil remarked that*:*

> *I take the school bus. ((Verbatim expression by a pupil in Group 2)*

Another pupil commented that:

> *I sometimes join the school bus not always. (Verbatim expression by a pupil in Group 1)*

Another pupil remarked that:

> *Because the school bus is expansive I usually go to school by these trotro buses (Verbatim expression by a pupil in Group 2)*

Another pupil had this to say:

> *My father takes me to school in his private car. (Verbatim expression by a pupil in Group 3)*

Also, the study shows that most pupils who are deaf feel happy and comfortable when interacting and socializing with their hearing colleagues within and outside the classroom. The findings further explain that because they got some form of support from their hearing colleagues that is why some deaf students feel comfortable. The quotation below indicates how some felt being among colleagues who are hearing;

> *It makes me very happy. This is because I'm able to socialize and interact with them especially when I find something challenging. I easily go to them and they willingly assist me by doing all they can to sign little by little with me and that makes me feel good. (Verbatim expression by a pupil in Group 1)*

Another pupil remarked that:

> *My hearing friends have always tried to help me out when I need help. It's fun. I thought they will isolate themselves when I came to school but they are so free with all the deaf. (Verbatim expression by a pupil in Group 2)*

Another pupil had this to say:

> *The hearing colleagues in my class have been involving me in group works. They always inform me of the time and place of the meeting when we have a group task to perform. Even though I may not have anything much to bring on board, they want me to be there so that we can also listen to whatever they will say and learn together. I must say I learn much from such interactions so I don't miss such opportunities (Verbatim expression by a pupil in Group 3).*

One pupil had this to say:

> *The hearing students come for me from my hostel for group discussions when they realize I am not coming early. Even when I am not around and they do the work, they discuss with me. But I always try to be there because I benefit more from that (Verbatim expression by a pupil in Group 1).*

One pupil also said this:

> *I don't have trust in most of the hearing friends except one whom I last term in class six. Because of me, he arranged to stay in the same hostel as me so that he can help me. He is kind and I trust him very much. We share important information and also learn together (Verbatim expression by a pupil in Group 2).*

Again, the findings show that not only the colleagues" students that the pupils who are deaf feel comfortable interacting with but also the teachers. From the study findings, some of the teachers especially those with the sign language skills took their time and explain matters that the pupils who are deaf find it difficult to understand and again teach them some signs that they do not know.

> *It's so easy to get close to my teachers. Anytime I come across a difficult word, I go to them with it and after spelling, they do sign the word for me. (Verbatim expression by a pupil in Group 3)*

Another pupil commented this way*:*

> *My teachers love me and interact very well with me all the time, one of them is my friend who helped me when homework is given. (Verbatim expression by a pupil in Group 2)*

One pupil had this to say:

> *Majority of the teachers do involve us in class activities. There is a particular teacher who will always ensure that he asks each of us a question before we close from school. As a hearing impaired, you will not leave his class without responding to two or more questions. So whenever I am going to his class I am always prepared (Verbatim expression by a pupil in Group 1).*

Another pupil added:

> *With our participation in class, I will mention some of the teachers. They encourage us and allow us to respond to question in class and they give a detailed explanation to questions we ask. Some make sure that we have a group when we are given something to do in the classroom (Verbatim expression by a pupil in Group 2).*

Although, just some few pupils who are deaf remarked that despite the advantages of being in the same school with hearing people the attention of the teachers are sometimes focus on the hearing when teaching in the classroom and this places them at a disadvantage position. A pupil remarked;

> *I don't like being in the same class as my hearing colleagues. The teacher teaches only the hearing children (Verbatim expression by a pupil in Group 3).*

Two other pupils added:

> *Sometimes the teachers forget there are hearing impaired student in the classroom. They, therefore, speak without accompanying it with the sign (Verbatim expression by pupils in Group 2).*

One pupil had this to say:

> *During break time teachers always meet the hearing students and communicate with them and ignore we the students who are deaf (Verbatim expression by a pupil in Group 3).*

More so, the findings revealed that not all the pupils behave well towards the pupils who are deaf. However, in an attempt to keep feeling comfortable such ones are being avoided by the pupils who are deaf. On this one deaf pupil mentioned that;

> *Sometimes, I hardly get along with some of my friends because of their behaviour. Some of them behave so badly sometimes. For me, I usually connect with those with good character (Verbatim expression by a pupil in Group 1).*

Research Question 2: What are the academic experiences of pupils who are deaf at DKIS?

In responding to the research question 1, the interview data collected from the respondents were used for the analyses. Two sub-themes were raised to elicit data, they included; experiences on access to information and experiences on how pupils who are deaf understand teachers during instruction hours.

Access to information is a critical requirement in the education of pupils who are deaf, since they are unable to perceive oral information auditory. The pupils who are deaf expressed diverse views as to whether or not they had access to information in the school. Some of the pupils indicated that, for them to have access to information in the classroom, in the absence of their sign language interpreters, they depend on their friends who could sign. In their expressions, the pupils noted:

> *We would sometimes call our classmates who can sign when the interpreter is not around (Verbatim expression of a pupil in Group 2).*

Another pupil remarked that:

> *Sometimes, I access instructions through lip-reading to obtain some hints as to what the teacher is saying. This method is not helping at all (A verbatim expression of pupil in Group 3).*

One pupil added that:

> *In the absence of an interpreter, I sit and wait to collect notes from my friends to copy (Verbatim expression by a pupil in Group 1).*

Some of the students also reported that some teacher give notes to their class prefect for them to copy but they do not get access to the notes.

One pupil remarked that:

> *Yes, the teacher gives us the notes to copy (A verbatim expression of pupil in Group 1).*

Another pupil remarked that:

> *No, the teacher never gives us notes to copy (A verbatim expression of pupil in Group 3).*

Providing ineffective services does not promote the education of pupils who are deaf (minority group) who are found in the midst of a hearing population (majority group). However, it was prudent to inquire from the pupils who are deaf the effectiveness of the services rendered to them at DKIS. The respondents gave their accounts as follows:

> *Sometimes we don't understand what the interpreter signs (A verbatim expression of a pupil in Group 1).*

One pupil added that:

> *The services are not always effective. The reason is that, if the interpreter is good, we enjoy the class but if the interpreter is not good the class becomes dull (A verbatim expression of pupil t in Group 2).*

Another pupil remarked that:

> *The interpreting service help improves on our academic work (A verbatim expression of pupil in Group 1).*

Response from the majority of the pupils who are deaf indicated that, even though the presence of an interpreter in the classroom was beneficial to them, yet, not every interpreter was much proficient in the use of the sign language.

Research Question 3: What are the communication experiences of pupils who are deaf at DKIS

The study findings indicate that all the pupils who are deaf were having to a degree a reasonable sign language skill. Also, the main medium of communication among them was through sign language. Yet, the findings revealed that the hearing pupils use signing and total communication in interacting with the pupils who are deaf, they do that by acting or demonstrating every means when they want to talk to their deaf colleagues. Below give some assertions from the pupils who are deaf;

One pupil said that:

> *I communicate with them usually through singing and acting (Verbatim expression by a pupil in Group 3).*

Another pupil also said that:

> *I use Sign Language and gesture to the deaf who don't know sign language. Verbatim (expression by a pupil in Group 2)*

Likewise, the study findings revealed that most of the teachers know sign language and communicate to the pupils who are deaf using the sign language. Yet, the findings indicated that pupils who are deaf have to read the lips of the teachers to access information from those teachers without sign language skills. Some pupils who are deaf remarked that:

> *I read the actions of the teacher and I also lip read. Some teachers can also sign (Verbatim expression by a pupil in Group 1).*

Another pupil also said that:

> *The old teachers who know sign language and try to sign with us (Verbatim expression by a pupil in Group 3).*

Another pupil commented that:

> *During group work, I find it difficult to express what I want to say when I am with the hearing peers. They seem not to understand the signs that I use, they make fun of me (Verbatim expression by a pupil in Group 1).*

Another two respondents said that:

> *Sometimes I have to go an extra mile by writing what I want to say in print but the hearing student find it difficult to understand what I mean (Verbatim expression by a pupils in Group3).*

Two pupils added that:

> *Being deaf is bad, sometimes I feel sad because I have nobody to talk to when the topic treated is difficult for me (Verbatim expression by a pupils in Group 2).*

Also, the findings show that pupils who are deaf at the DKIS make use of sign language interpreters during some of their class sessions. It further indicated that the school have just one sign language interpreter. Again, the participants mentioned that one interpreter is not enough for the work, and this interpreter comes around only once a week. More so, the findings revealed that the interpreter visits within certain

days of the week. Below expresses how the pupils who are deaf felt for having just an interpreter;

> *Having just an interpreter it's not enough. Because, if she doesn't come to school, then there is no interpreter there to interpret for us (A verbatim expression of pupil in group 3).*

Another pupil also said that:

> *One interpreter is not okay for deaf students. And also, she doesn't come to school on certain days (A verbatim expression of pupil in group 1).*

Furthermore, the participants acknowledge that the interpreter can interpret well for them to understand. Yet, the findings show that the pupils who are deaf call for the employment of more interpreters so that they can benefit equally as their hearing colleagues. The responses below outline how some pupils who are deaf were concerned with having more interpreters;

> *I will need more interpreters so that I can access them regularly. I will also need a note taker (A verbatim expression of pupil in group 2).*

A respondent added that:

> *I will want the interpreter to be in school all days (A verbatim expression of pupil in group 3).*

Another respondent said that:

> *Sometimes I feel bored when interpreters fail to attend school gathering, there is nobody to assist with what is going on (A verbatim expression of pupil in group 1).*

Communication which is the process of exchanging information between two or more people has become an issue of concern among pupils who are deaf. At the DKIS, it is supposed that once pupils who are deaf have been provided with Sign Language interpreters, and then their communication needs have been solved. This theme explored from the pupils how they felt about communication at DKIS.

Another pupil said that:

> *One other major challenge I encountered was with group work. In the first place, I had difficulty figuring out the group I belonged to. Most of the time, I did not know the time the group was meeting, and even when I took part, I could not effectively communicate with the hearing students. I sometimes felt that assignment should be given on an individual basis (A verbatim expression of pupil in group 3).*

Another pupil also said that:

> *One of my challenges as a deaf pupil at this school is communication with both teachers and colleagues. Initially, it was very difficult to communicate even with other deaf students because I did not know Sign Language when I started schooling. Consequently, during the first term, I felt completely excluded and isolated. I did not know or understand what teachers were talking about since the only support service we had then was Sign Language interpreters. At that time, I attended class only to know the topics that the teacher covered so that I could read on my own. I sometimes felt that there was no need to attend class since I could not understand. I depended heavily on the textbooks (A verbatim expression of pupil in group 2).*

Another respondent also said that:

> *Communication problem among hearing students as well as teachers who do not know Sign Language worry me. I am isolated in socialization when I join hearing students because I cannot communicate with them*
> *(A verbatim expression of pupil in group 1).*

Another pupil also said that:

> *Even though hearing teachers use sign language in teaching it is difficult to understand them. I wish they were deaf teachers because they can help communicate better than the hearing teachers (A verbatim expression of student in group 2).*

Another pupil also said that:

> *In this school, the interpreters are not skilful so when I sign to them sometimes they don't understand and they do not communicate my messages to the teachers and my hearing colleagues. For the teachers, only one of them can sign and that is the Sign Language lecturer (A verbatim expression of pupil in group 2).*

Pupils who are deaf indicated how their inability to communicate with their hearing colleagues and teachers made them feel isolated. They stated that sometimes their hearing colleagues made mockery at them because of their language.

Another pupil also said that:

> *I sometimes isolate myself in class because most hearing peers make fun of the sign language which makes me feel shy (A verbatim expression of pupil in group 3).*

Research Question 4: What are the coping strategies that pupils who are deaf utilize at DKIS

Coping strategies that are utilized by participants were explored under sub-themes. The sub-themes included instructional strategies, support of the sign language interpreter and seating arrangement and noise management.

4.1 Instructional strategies

Instructional strategies include verbal instruction, written notes and the use of visual aids in the teaching and learning process. Concerning how participants got access to verbal instruction, written notes and the use of visual aids, it was clear that it was easy for them to get access. Two pupils remarked that:

> *Teachers provide short and brief directions and verbal instruction (A verbatim expression of pupils in group 3)*

Another pupil added that:

> *The information is repeated again and again for me to understand (A verbatim expression of a pupil in group 1)*

Three respondents said:

> *The writings on the board are bold enough for us to read (A verbatim expression of pupils in group 1)*

Two respondents had said that:

> *Teachers use pictures, projector, and drawings to help us understand the lesson and also encourage us to be active in class (A verbatim expression of pupils in group 1)*

Support from hearing colleagues

Respondents indicated that they enjoyed being in the same classroom with their hearing pupils. Three respondents said:

> *We play and interact with the other pupils the entire time they are in the classroom. We play with our peers during stations (A verbatim expression of pupils in group 2)*

Two respondents added that:

> *We teach our hearing colleagues some basic sign language to be able to interact with us (A verbatim expression of pupils in group 3)*

Another respondent remarked that:

> *My best friend is Kofi, he has been helpful to me because he hears (A verbatim expression of pupils in group 1)*

Support received from the sign language interpreters

Response from the majority of the pupils indicated that the presence of an interpreter at DKIS was beneficial to pupils who are deaf. Again, it was revealed that the services of sign language interpreters that were provided to pupils who are deaf were provided on regular basis. Three pupils remarked that:

> *The sign language interpreter helps us to ask and answer questions in class (A verbatim expression of pupils in group 2and 3)*

Four respondents had said that:

> *The sign language interpreters assist us to do our homework (A verbatim expression of pupils in group 1and 3)*

Another pupil added that:

> *Sometimes they write my notes for me (A verbatim expression of a pupil in group 2)*

Two pupils added that:

> *The interpreters help us to understand the lesson (A verbatim expression of pupils in group 1)*

The minority of respondents were with the view that sign language interpreters available DKIS were not proficient and sufficient, so they preferred more sign language interpreters. Other forms of support services such as projections, resource centre, and photocopies. For example, some of the participants stated that:

> *Most often I don't have interpreters. I had an interpreter at class five but was not skilful (A verbatim expression of pupils in group 1)*

A respondent said:

> *Interpreters absent themselves very often (A verbatim expression of a pupil in group 2)*

Another respondent remarked that:

> *Sometimes, the interpreter may be good but I have a problem when interpreter only finger spells all the time, I don't understand (A verbatim expression of a pupil in group 1)*

Sitting position

Issues on the sitting position of pupils who are deaf in the classroom, the responses indicated that pupils who are deaf are always sited in front closer to the teacher and board. Three respondents said:

> *We sit close to the chalkboard so that we can see clearly (A verbatim expression of pupils in group 1)*

Two pupils added that:

> *We face the board and overhead projector (A verbatim expression of pupils in group 3)*

Three pupils remarked that

> *We were not allowed to sit close to the windows (A verbatim expression of pupils in group 1)*

Another respondent added that:

> *I sit in the middle of the classroom to maintain eye contact with the interpreter (A verbatim expression of pupils in group 2)*

CHAPTER FIVE

DISCUSSIONS OF FINDINGS

5.0 Introduction

This chapter presents the discussion of findings from the data analysis.

5.1 Research Question One: What are the social experiences of students in DKIS?

Research question one explored the social experiences of pupils who are deaf in DKIC. Findings from the study revealed that almost all the deaf pupils at DKIS walk from home to school and normally do that alone. This is very risky as a basic school child who is deaf walk alone to school. Though, the cost involves purchasing a private vehicle to transport their wards will be expensive. This finding was espoused by Barton et al (2006) that parents of pupils who are deaf or hard of hearing must deal with specific challenges, are often at greater risk of stress, have higher out-of-pocket expenses and lose more workdays than other parents.

The study findings show that most of the pupils return home with their colleagues.

Again, the finding revealed that most deaf students feel comfortable when interacting with their hearing colleagues within and outside the school. This suggests that the attitude of those students within the inclusive setting is turning to be positive (Mantey, 2011). Researchers and practitioners have been particularly concerned about the social outcomes of pupils with hearing loss who attend public school programs where their classmates are primarily hearing, because of problems with peer communication and interaction (Kluwin, Stinson, & Colarossi, 2002).

Also, the finding of the study is inconsistent with Kiger (1997) who noted that attitudes toward deaf people differ from attitudes toward people with other disabilities. This implies that if the school were to be having other disabled groups the level of interactions may have been different. Negative attitudes toward individuals with disabilities have existed throughout history and still exist today (DeLambo et al, 2007). Positive attitudes towards deaf pupils seem to be fostered in hearing pupils who have had previous contact with deaf pupils in school or home (ChongMin & Scot, 2018).

Likewise, the study finds that the teachers at DKIS demonstrate some kind of love and support the deaf in their academic endeavours were highly in anticipation as the earlier findings revealed that the hearing pupils were doing so. This further suggests that the school environment was truly inclusive as everyone accepts and embraces individual differences. Also, teachers demonstrating a positive attitude is key towards inclusive education. Downing (2008) wrote, "A fundamental change in attitude is the basic step that must occur before educating all students together successfully" (p. 13). Research on the attitudes of teachers towards the inclusions of deaf students over the past years has generated diverse response. Some studies have found a favourable attitude towards deaf pupils (Eriks-Brophy and Whittingham, 2013).

Other studies found negative attitude towards deaf pupils in an inclusive setting and the attitude of teachers were not attributed to variables such as the area of education, gender, years of teaching experience, and having a family member with disabilities (Aseery & Hadadian, 2016). The current study is in an agreement with Aseery and Hadadian study indicated that teachers attitude towards deaf people is not influenced by their demographic features as most of the teachers show a positive

attitude towards the deaf pupils yet, almost all the teachers at DKIS were not trained teachers and had no experience in teaching the disabled pupils. Regarding this the teachers with some level of sign language skills were much involved in demonstrating a positive attitude and interacting with the deaf students this suggests that some teachers do not demonstrate a positive attitude towards deaf pupils due to language barrier. As indicated earlier most of the students and teachers interacted very well with deaf pupils but the few students who make fun and mock them were avoided probably to maintain their positive self-esteem. Several research studies conducted on ethnic minorities suggest that factors such as family support and school experience can significantly influence the self-esteem of minority group members (Verkuyten, 2003; Way & Robinson, 2003).

5.2 Research Question Two. What are the academic experiences of pupils who are deaf at DKIS

It revealed that pupils who are deaf rely on their classmates who have sign language background for information. Gudyanga, Wadesango, Hove, and Gudyanga, (2014) are of the view that there is a risk of pupils with hearing impairment being excluded from the teaching and learning that goes on in the classroom. It also emerged that there was an opportunity for teachers and other stakeholders to reflect on their school and classroom practices with hearing impaired pupils and adopt effective strategies of managing them in inclusive schools (Gudyangaet al., 2014). The finding is in line with Adoyo (2008) who revealed that those teachers should use the latest techniques and materials for instruction when working with pupils who are deaf. More emphasis should be laid on showing the practical things to pupils so that they can easily understand the lesson. Teachers should make diagrams on the chalkboard for explaining the things.

It was shown that in the absence of the sign language interpreter, pupils who are deaf copy the notes from their hearing counterparts. Gudyanga et al. (2014) revealed that teachers had little training in dealing with individual differences and specific instructional processes developed for special needs pupils. The roles and responsibilities of ordinary education teachers were never clearly defined in this process. These teachers and their ordinary pupils were not prepared for the inclusion of children with disabilities. Teachers‟ attitude towards inclusion is a very important component for successful inclusion; this determines how the teacher treats the learners and the whole processes of teaching and learning (Reed et al., 2008)

It was revealed that most of the interpreters were not proficient in the use of sign language which makes difficult for pupils who are deaf to understand instructions. Even though some of them are not much proficient in the use of sign language, the results of the present study revealed that their services improve academic work of pupils who are deaf.

5.3 Research Question three. What are the communication experiences do students who are deaf.

The findings of the study revealed that all the pupils have some level of sign language skills which was highly expected as the era of oralism has faded away and educating deaf pupils ts in an inclusive environment require sign language interpreters and teachers with sign language skills. Also, it was revealed that hearing pupils in the school environment device all means including total communication which indicate that the desire to communicate is natural. Again the findings show that deaf pupils have to rely on lips reading to access information from some teachers to which was not the best. Antia, Stinson and Gaustad, (2002) added deaf pupils vary in their preferred ways of communication. Some students generally prefer to express

themselves using speech and prefer to receive communication through the oral/ aural modality. Other pupils prefer to express and receive communication through signing. But the communication preference continuum is more complex than this, because deaf individuals vary in the way they communicate, depending on the situation. In communicating with hearing peers, for example, some pupils prefer using speech only. Others may use both speech and sign, while still others may use sign only. The finding is in line with Altier et al, (2011) who indicated that the best lipreader can accurately access 45% information correct, and most of these studies focus adult which implies the percentage may below with the current study population.

Another expected revelation by the study findings was that the interpreters for the school were not enough. It cost to hire sign language interpreters and was not surprising to find that as a private school the funding was not enough to hire more interpreters and even to make them permanent. Fobi and Oppong (2017) found that some deaf students at the university sometimes go to lecture halls at the absence of sign language interpreter and those who sometimes have interpreters still do not understand the lectures because the subject for discussion is difficult for the interpreters to decode and sign for them. Though their findings contradict the current findings which revealed that deaf pupils at the school understand the message from the interpreters probably the level of education is enough to decode information from the teachers.

The current study revealed that pupils who are deaf feel isolated because of their inability to communicate with their hearing colleagues and teachers. Hearing teachers may speak extremely fast, move through material very rapidly, and maybe insensitive to the needs of deaf pupils trying to follow the lecture through an interpreter (Dunne, 2013). Regarding the conversations of peers, deaf pupils report

missing information, not catching side conversations and jokes, feel isolated and failing to grasp the full flavour of a discussion even when an interpreter is present (Iantaffi, Jarvis, & Sinka, 2003).

5.4 Research Question four. What coping strategies do pupils who are deaf utilize at DKIS

The findings revealed on the coping strategies pupils who are deaf utilize at DKIS show that written and visual sources were in the classrooms as an important part of the subjects and classroom activities. All of the teachers integrated technology into their lessons effectively. For instance, the basic three and basic four teachers both used overhead projectors during instructional periods. The teachers usually reflected class-related information and questions on the wall using their overhead projectors. Many studies (Reich & Lavay, 2009; Berndsen & Luckner, 2012; Schultz et al., 2013) have emphasized the importance of using visual support and technical support to facilitate the understandings of pupils who are deaf. Since visual and technological aids, such as posters, charts, smart boards, iPads, and pictures, have a big impact on student learning, it was found essential to include them in the instruction and classroom activities. In one study, for instance, there was a marked difference in pupils who are deaf pretests after the implementation of a reading curriculum that was supported via extra visuals (Trezek, Wang, Woods, Gampp, & Paul, 2000). Ayantoye & Luckner (2016) added teachers paid attention to the contribution of vocabulary in written format. Teachers wrote possible unknown words on the board and vocabulary charts that also included the explanations of these words. As emphasized by many scholars.

Again, the finding of the study revealed that group activities promoted interaction between the pupils who are deaf and pupils with hearing. The pupils who are deaf were encouraged to be involved in instructions and classroom activities. In doing this, all of the teachers kept their instructions and directions generally brief, or they provided more detailed explanations for the pupils who are deaf to ensure they understood what was expected of them. These results are consistent with other studies that have shown that length and pace of the instruction and directions are effective at encouraging the understanding of pupils who are deaf because shorter instruction is more meaningful for them (Reich & Lavay, 2009; Cawton, 2001; Berndsen & Luckner, 2010). The teachers were careful to speak briefly when using spoken language, and they made sure to be clear and understandable for the benefit of their students who are hard of hearing. Spoken language was supported via clear facial expressions and hand gestures. The repetition of the information was provided when it was deemed necessary. In a study on successful pupils who are deaf in inclusive classrooms, it was found that vocabulary support, additional teaching, and repetition of information are important to support the learning of these pupils‟ general education classrooms (Ayantoye & Luckner, 2016).

It was also revealed that in the classroom, especially, interpreters were in charge of providing the repetition of the information and questions for pupils who are deaf, and they used sign language to do this. This because most of the teachers were not advanced in the use of sign language; however, the interpreters were very helpful in their ability to translate classroom instruction and discussions for the pupils who are deaf. The results indicated that the interpreters‟ roles were not only to provide translation but also to support the teacher‟s instruction by providing one-on-one study opportunities for the pupils who are deaf. The result is thus in agreement with studies

conducted by Cawton (2001) stated that interpreters who study with pupils who are deaf in inclusive settings do not only provide translation between them and other people with hearing, but they also provide repetition of the information and tutoring.

The results, however, revealed that pupils who are deaf were most allowed to sit in front of the classroom. This finding is in line with Yekple and Deku (2011) outline that in managing pupils who are deaf in the inclusive classroom: allow the child to sit at a place convenient for him or her to take advantage of visual and auditory cues from the teacher and the chalkboard, sit the child away from sources of background noise (e.g windows, doors, learning centres, and cooling system). Guardino and Antia (2010) added that an effective seating arrangement can enable pupils who are deaf to see other students and the teacher easily, to participate in both individual work and group activities, and to follow classroom discussions easily.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the summary, conclusions and recommendations for future research.

6.1 Summary

The study was conducted in DKIC in the Nsawam- Adoagyiri Municipality of Ghana. The purpose of the study was to explore the coping strategies of pupils who are deaf at DKIS. Based on this, the study indeed sought to find out:

1. Social experiences of pupils who are deaf at DKIS.
2. Academic experiences of pupils who are deaf at DKIS.
3. Communication experiences of pupils who are deaf at DKIS.
4. Copping strategies of pupils who are deaf at DKIS

The study was qualitative research with phenomenological design. The population for the study was 22 pupils who were deaf, 15 of them made up of 9 males and 6 females who could use Ghanaian sign language (GSL) were purposively sampled for the study. Data were collected using focus group interview were coded and analyzed using a thematic approach. The following findings were observed:

Responses from participants suggested that most of the pupils who are deaf walk from home to school alone. Yet, on their way home from school, some of the pupils who are deaf expressed they walk with friends back home whereas others returned with cars. The pupils who are deaf indicated that they feel comfortable when interacting with their hearing colleagues. But the teachers who don"t know how to use the sign language were found demonstrating a negative attitude towards the pupils

who are deaf. On the other hand, those with sign language skills have strongly friend pupils who are deaf and respond positively to their needs.

Results of the study revealed that almost all the hearing pupils have to a reasonable degree sign language skill. Also, those who are fluent in sign language when communicating with the pupils who are deaf use total communication. Again, the study indicated that some of the pupils who are deaf have to lip read the teachers in the absence of their Sign Language interpreters.

Likewise, the findings show that the number of interpreters in the school was not enough to meet the interpretation needs of the pupils who are deaf. However, findings from the study revealed that the education level of the sign language interpreter was enough to decode information for the pupils who are deaf.

Lastly on the coping strategies of the pupils who are deaf, the finding of the study revealed pupils who are deaf can cope well with school environment when instructions involve audio-visual aids, enough skilful sign language interpreters and also when pupils who are deaf are well positioned in the classroom.

6.2 Conclusion

The present findings concluded that although DKIS is a young inclusive basic school in the Eastern Region of Ghana, their effort to include pupils who are deaf is well commendable. Their effort has made both teachers and students embraced inclusive education as many of the teachers and pupils have learned sign language and willing to support the deaf in all their academic endeavours. Despite this, the support services available to the students are not enough as just one interpreter attend to all the pupils who are deaf across the various classes. Yet it was necessary to ensure that more interpreters and if possible, note takers were available to provide regular services to the students. It was also necessary for the school authorities to ensure that

all the teachers learn sign language and try helping the deaf students any time there is a need. Future research needs to be conducted to verify the present findings by taking into considerations the recommendations which have been made.

6.3 Recommendations

Based on the results from the study, it is recommended that Parent Teacher Association should find ways and means of making pupils mobile to and from school.

Again school authorities should employ competent sign language interpreters and note-takers to help pupils who are deaf socialize, improve academically, and have access to the curriculum and to help them build upon their communication skills.

Also the school authorities should organise periodic workshop to train teachers on the needs of deaf students, and the need to learn sign language as teachers.

Finally, written and audio visual materials should be made available in the classrooms and the school environment.

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APPENDIX A

INTRODUCTORY LETTER

UNIVERSITY OF EDUCATION, WINNEBA
FACULTY OF EDUCATIONAL STUDIES
DEPARTMENT OF SPECIAL EDUCATION

May 7, 2019

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Dear Sir/Madam,

LETTER OF INTRODUCTION

I write to introduce to you Miss. Benedicta Cudjoe an M.Phil student of the Department of Special Education of the University of Education, Winneba, with registration number 8170150010.

He is currently working on his thesis on the topic "**Social, Academic, Communication Experiences and Coping Strategies of Students who are Deaf at Diamond Kids Inclusive School Complex**"

I should be grateful if you could give him the needed assistance to enable him carry out his studies.

Thank you.

Yours faithfully,

DR. DANIEL S. Q. DOGBE
Ag. Head of Department

www.uew.edu.gh

APPENDIX B

FOCUSED GROUP INTERVIEW GUIDES FOR STUDENTS WHO ARE DEAF

Social experiences of students who are deaf at DKIS

1. Describe the social experiences between you, your hearing peers and teachers in the school.

Prompts:

a. How do make friends with your hearing colleagues?
b. How do make friends with your teachers?
c. How do relate with your hearing colleagues?
d. How would you describe your relationship with your teachers?
e. What about your involvement in group work?
f. How do you relate with your sign language interpreters on campus?
g. What will you say about the attitude of the teachers in your school towards you?

Academic experiences of students who are deaf at DKIS

2. What is the nature of academic interactions with teachers and colleagues? Describe it.

Prompts:

a. What would you say about how teachers teach you?
b. Do teachers provide notes for you to copy?
c. How will you describe the way you are involved in the teaching and learning process?
d. What can you say about your experiences with your hearing colleagues?
e. How do your colleagues assist you in the teaching and learning process?
f. Can you say something about the sign language interpreters
g. How do the services of sign language interpreters improve your performance?
h. In the absence of an interpreter, how do you access information in the school?
i. How do your hearing peers help you in doing your homework?

Communication experiences of students who are deaf at DKIS

3. How effective do you communicate with your hearing peers and teachers in the school?

Prompts:

a. How do you communicate with your deaf colleagues
b. How do you communicate with your hearing colleagues?
c. How do you communicate with your teachers?
d. How often do you have interpreters in your classroom?
e. What do you think about the number of interpreters in your school?
f. How do you understand what the interpreter interprets?
g. How does the fluency of interpreters in sign language affect your performance?
h. What challenges do you face during learning?

Copping strategies do pupils who are deaf utilize at DKIS

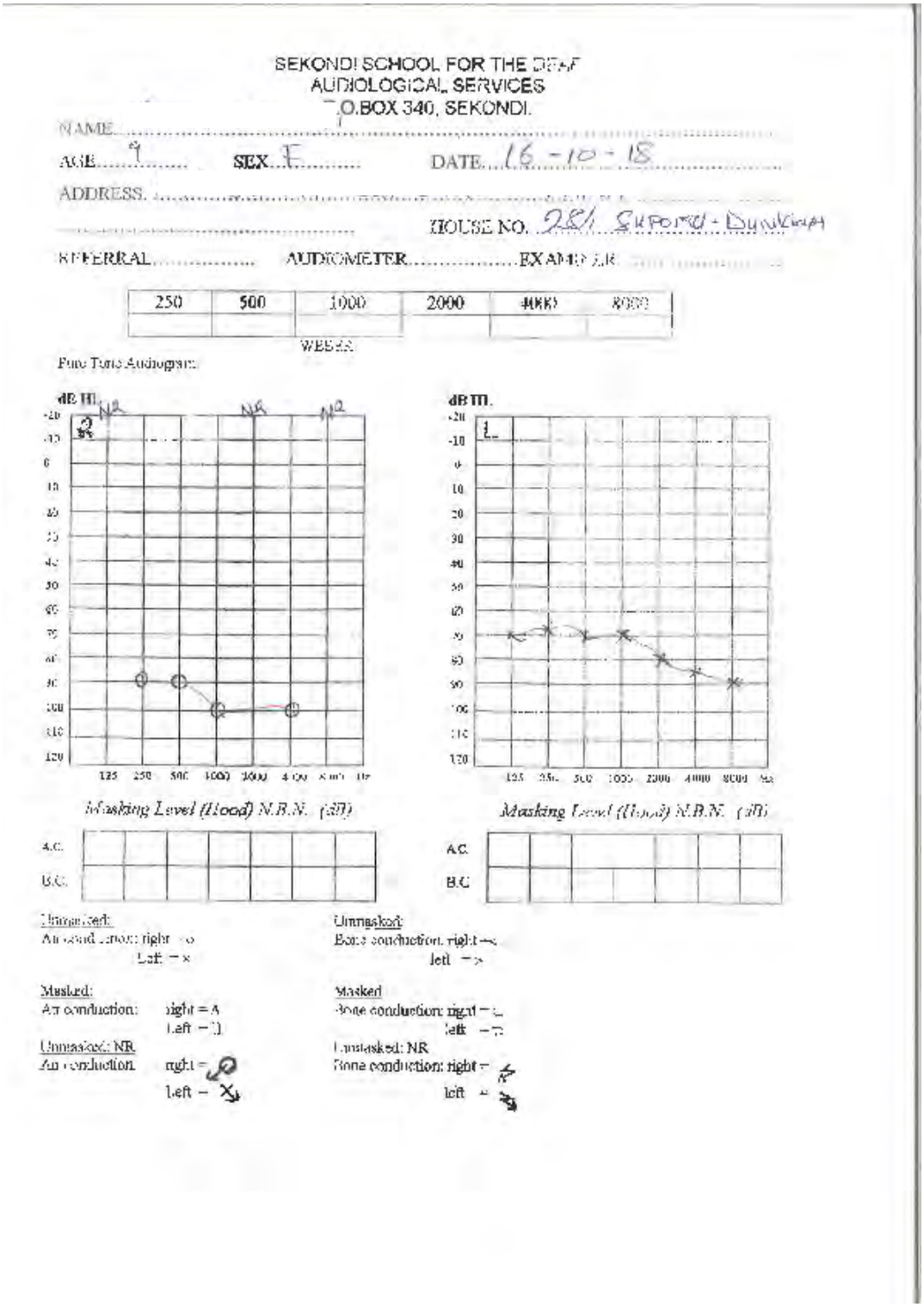
4. How effective do you cope with the school environment?

Prompts:

a. How do you get support from teachers?
b. How do your hearing colleagues support you?
c. What kind of support do you receive from the sign language interpreters?
d. How friendly is the school environment?
e. Where do you sit in the classroom?

APPENDIX C

AUDIOGRAMS OF PARTICIPANTS



SEKONDI SCHOOL FOR THE DEAF
AUDIOLOGICAL SERVICES
P.O.BOX 340, SEKONDI.

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AGE.....9..... SEX.....F..... DATE.....16-10-18.....
ADDRESS.....
HOUSE NO. 28/1 SEKONDI-DUNKWA
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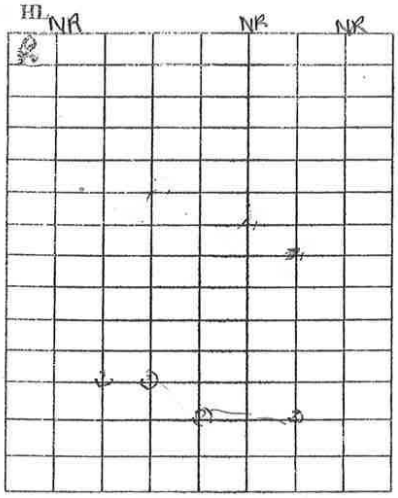

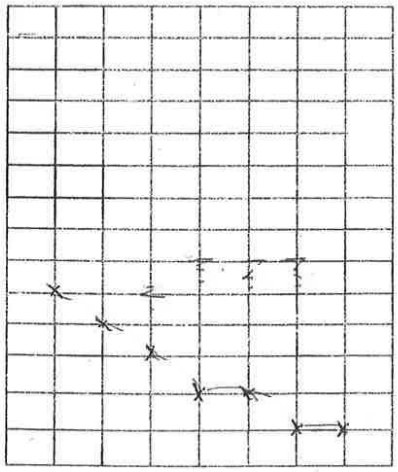

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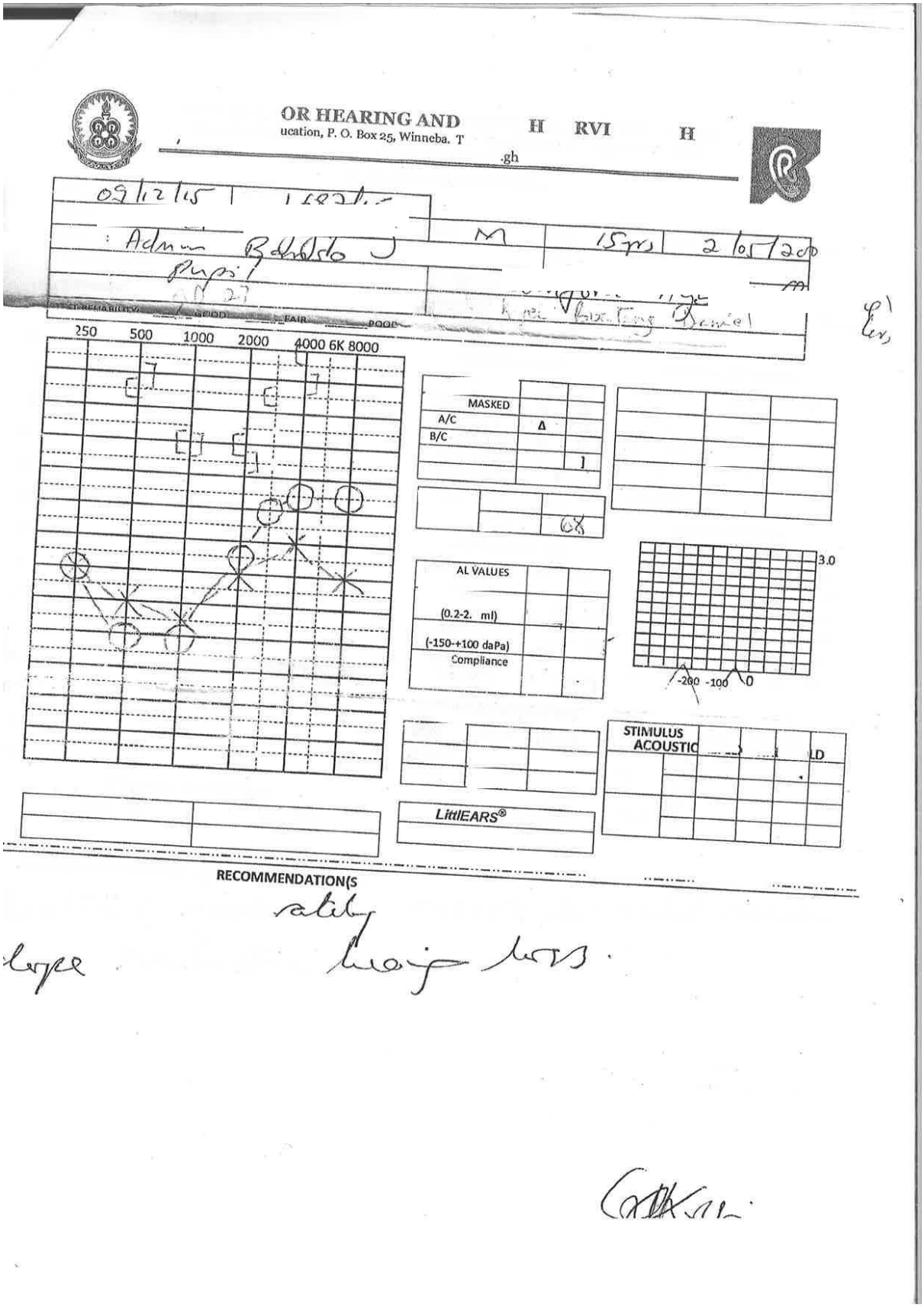

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TYMPANOMETRY

: normal tympanic

①Implications

CO-ORDINATOR

AUDIOLOGIST SERVICE

EA W A

NAME .....

AGE 5years M 30 1-2018

ADDRES .....

HOUSE NO 814/3

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Pure Tone Audiogram

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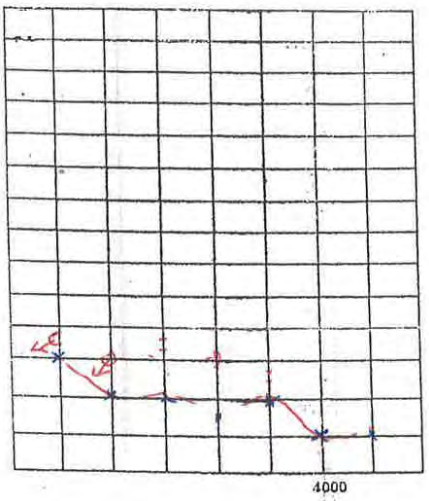

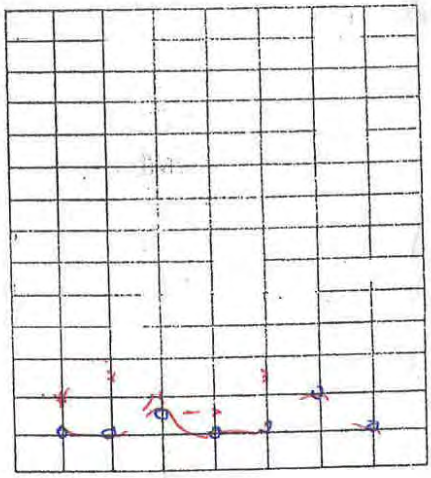

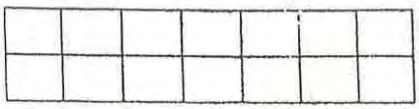

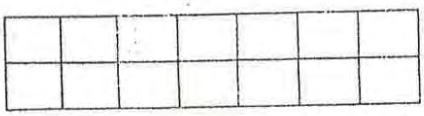

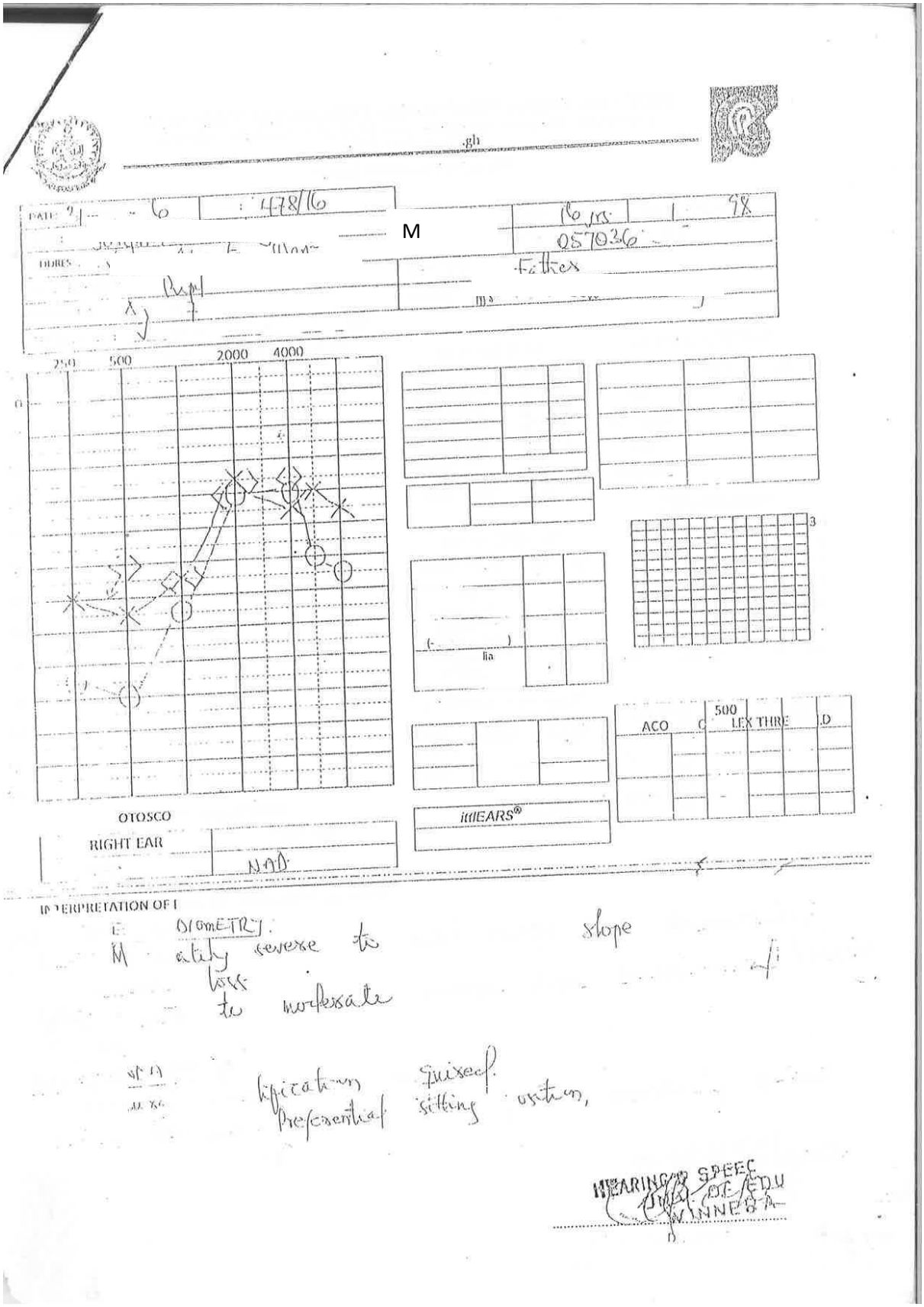

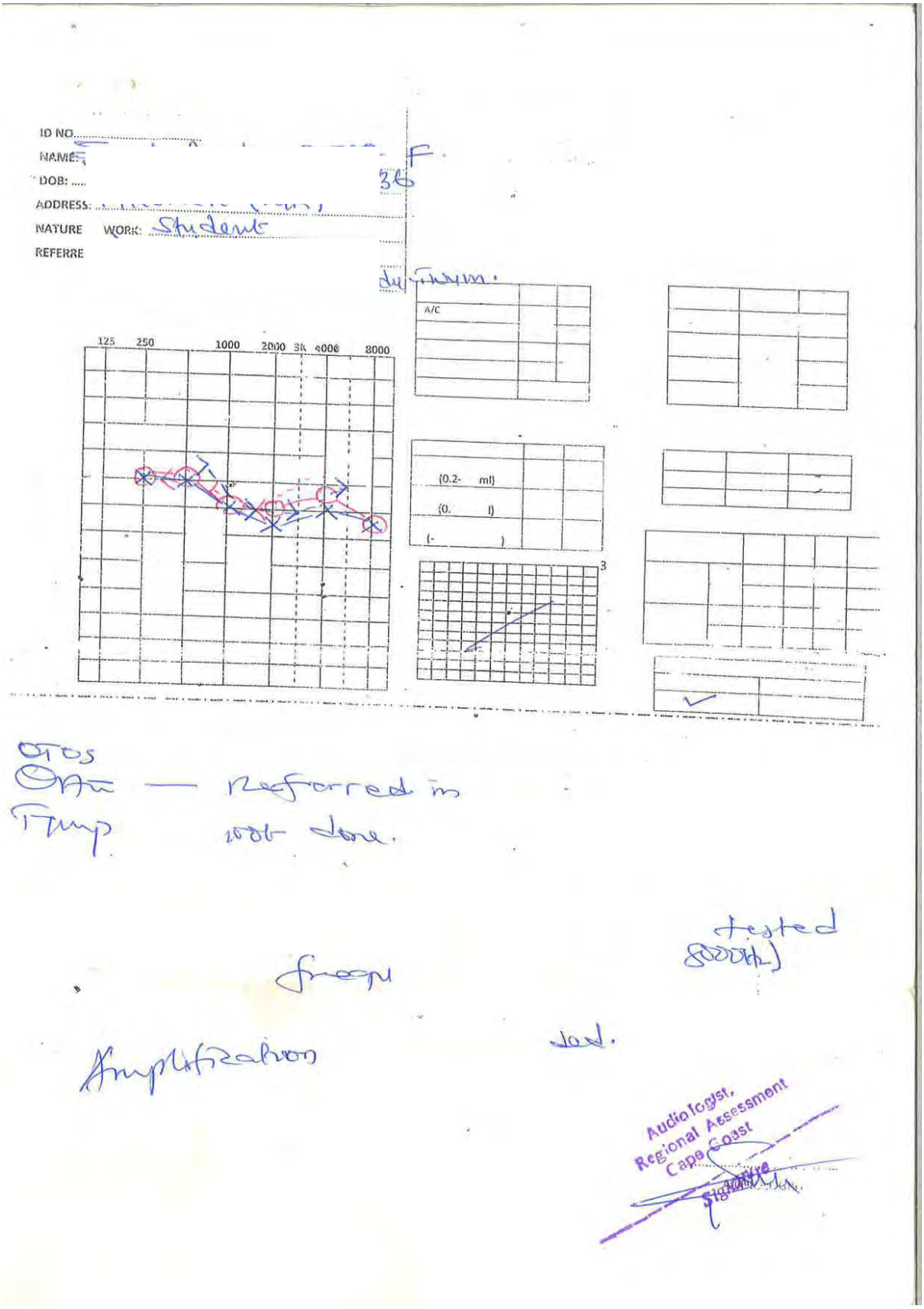

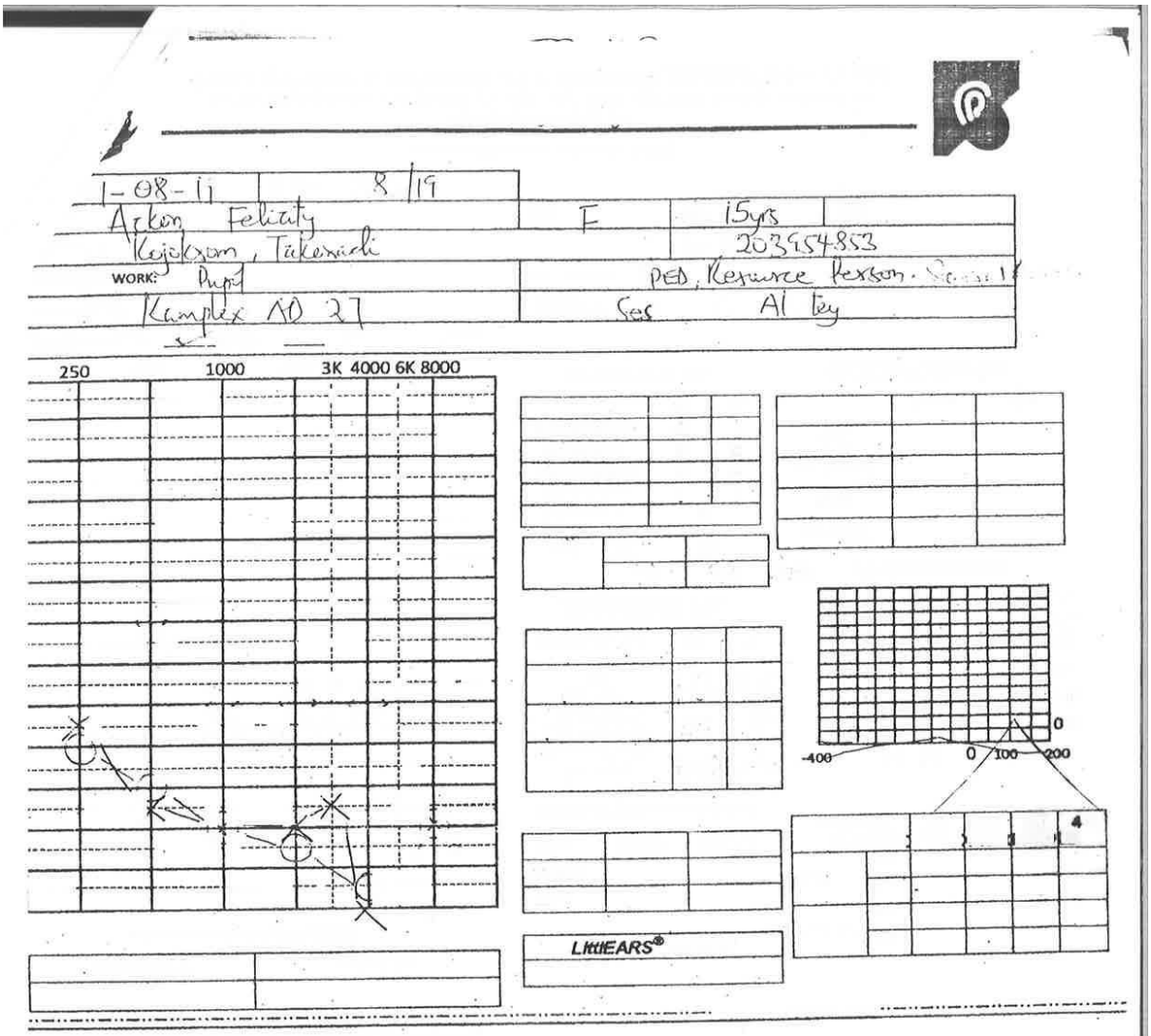

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MARGARET ASABEA

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P.O.BOX 340

NAME: AMIKRAH BRAIDOO AUGUSTINE JOHN

AGE: 36 SEX: MALE DATE: 14 – 12 – 18

ADDRESS: FIRE / SAFETY BOX 282 – 0245826161 – 0208352091

TAKORADI HOUSE NO. 109 / 109 HOUSING – NEW SITE

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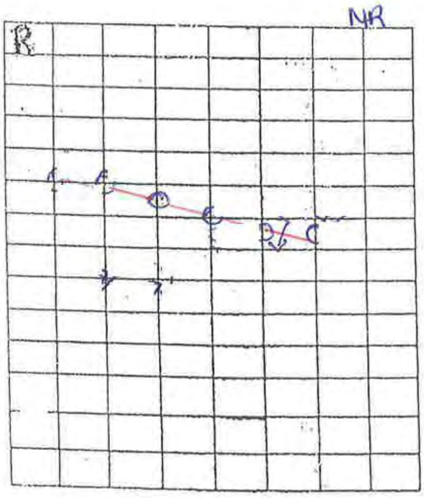

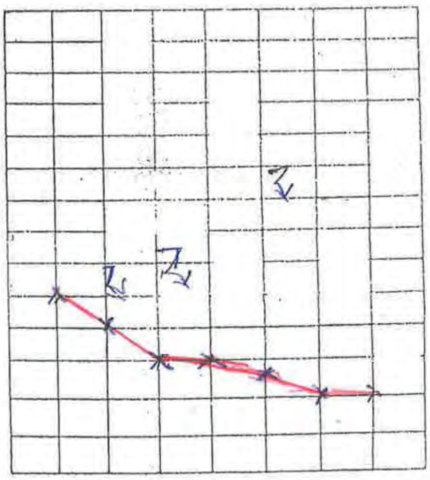

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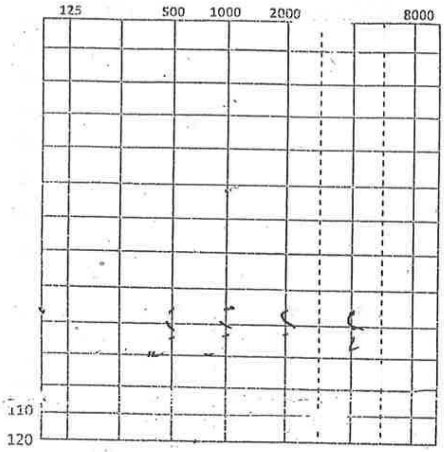

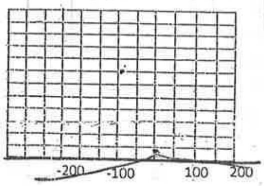

OTOSCOPY

Behaviour responses SSEP2 for better ear responses. Severe profound sensorineural loss.

Tymps: Bilateral normal tympanometry - Type A

OAEs Emissions absent bilateral

Reflexes: Elevated 1kHz 4kHz and absent (500Hz - 2kHz) indicative sensorineural loss - severe to profound.

Recommended for School place

Special School.

AUDIOLOGI

19/08