

UNIVERSITY OF EDUCATION, WINNEBA

**EXPERIENCES OF STUDENTS WITH DEAFNESS TOWARDS LEARNING
AT TAKORADI TECHNICAL UNIVERSITY, GHANA**

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**of the requirements for award of the
Master of Philosophy
(Special Education) degree.**

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DECLARATION

STUDENT'S DECLARATION

I, **Andrews Baze Ackah**, 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, **Professor Grace Yawo Gadagbui**, 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 late father, Mr. Andrews Assuah Ackah whose encouragement has brought me this far.



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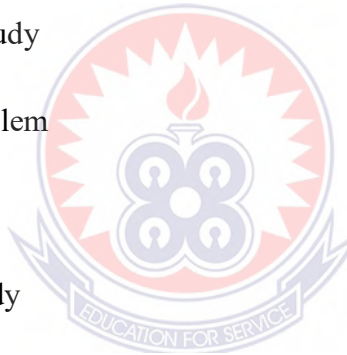
I thank the Lord Almighty for granting me the strength and good health which has brought me this far. To Him be the glory. I am again indebted to my research advisor and supervisor, Professor Grace Yawo Gadagbui for her support, encouragement and patience. Every encounter with her boosted my understanding and professional advancement in research.

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ABSTRACT

This was a qualitative study that explored the learning experiences of all 21 students with deafness at the Takoradi Technical University. The study employed a phenomenological design with a 28-item semi-structured interview instrument that was used to collect data for the study. Findings from the study that impacted negatively on the students' academic performance and social competence included: (a) lecturers having limited knowledge about the needs of students with deafness, and therefore not very supportive to students with deafness; (b) communication barriers, such as inability of lecturers and hearing peers to sign Ghanaian Sign Language, (c) inability of students with deafness to use and understand spoken language; (d) inadequate sign language interpreters and note takers; (e) lack of extended time for students during quizzes and examinations, and (f) hindrances to participate in extracurricular activities such as games, athletics and field trips/excursions. On the positive side, hearing peers related well with students with deafness, and the students were fully involved in group work. Recommendations to improve student learning include alternative supports like proper tutoring and real time captioning, and more support staff, such as sign language interpreters and note takers.



CHAPTER ONE

INTRODUCTION

1.0 Background of the study

In the past, children with disabilities were believed to be inferior to non-disabled peers, so it was deemed essential to teach them in separate special schools where they would not only receive specialist services but also avoid disturbing the learning of others (Green & Engelbrecht, 2007). These authors observed that special education developed as a system parallel to mainstream education and conceptualized those with disabilities as abnormal and in need of the attention of specialists. As the frontiers of ignorance gradually receded, it was realized that it might not be in the best interests of those with disabilities or even society, for them to be separated from the mainstream. Later on, there was a paradigm shift to what Mporu, Mutepfa, and Chataika (2007) described as the expression and promotion of egalitarian societal values of equal opportunity and access to the resources necessary for the acquisition of abilities and skills that enable meaningful societal participation by individuals in their communities.

Disability is defined as a greatly reduced ability to perform a function or some functions due to damage or loss of a body part or organ (Deku & Gyimah, 2015). Disability refers to individual functioning; including physical impairment, visual impairment, hearing impairment, cognitive impairment, intellectual impairment, mental illness and other types of chronic diseases.

(<http://www.disabledworld.com/disability/types>)

Deafness is the inability of a person to understand speech through hearing, even when sound is amplified. In Ghana, there are 35 basic special schools. Out of this number, 14 are schools for the deaf. There is also a secondary technical School for the deaf. Many students with deafness, after completing their basic education, continue to the secondary technical school. The medium of communication and instruction at these basic schools for the deaf and the secondary-technical school for the deaf is sign language. Every teacher uses sign language to teach and communicate with students.

According to Martin (1981), cited in Gadagbui (2018), there are six hearing levels and losses. These are normal limits, mild hearing loss, moderate hearing loss, moderately severe hearing loss, severe hearing loss, and profound hearing loss. Individuals with normal limits detect sound between 0 and 26 decibels (dB). These individuals detect conversational sound, and therefore do not have hearing losses. Persons with mild hearing loss can detect sound between 27 and 40 decibels (dB). Individuals with moderate hearing loss can hear sound between 41 and 55 decibels (dB). Those with moderately severe hearing loss detect sound between 56 and 70 decibels (dB). Persons with severe hearing loss hear sound between 71 and 90 decibels (dB) while those with profound hearing loss can only hear sound above 90 decibels (dB).

Deku and Gyimah (2015) stated that individuals with mild to moderate hearing losses can hear when they use hearing aids. They are referred to as hard of hearing. Hearing aids are equipment which amplify and transmit sound to a miniature loudspeaker to enable the individual who is hearing impaired hear sound from the environment. Hard of hearing is a condition where hearing is possible with the use of

hearing aids. Individuals described as hard of hearing, therefore, have minimal hearing. According to Oppong, Adu, Fobi, and Acheampong (2018), majority of students with deafness and who belong to the Deaf cultural community in Ghana pursue their secondary-technical school education at the Mampong Secondary-Technical School for the Deaf. Oppong et al. further reported that at the Mampong Secondary-Technical School for the Deaf, the official mode of communication and medium of instruction is signing in the form of Ghanaian Sign Language (GSL). Many of such students with deafness who successfully graduate from the Mampong Secondary-Technical School for the Deaf continue at the tertiary level where a sign language interpreter would have to interpret for them during lectures and other social gatherings such as graduation, matriculation and games/sports. This normally creates serious challenges to students with deafness since back at the secondary-technical schools, their teachers used sign language in teaching without interpreters. This is because the teachers themselves were able to communicate with the students using sign language.

In order to accommodate a diversity of learning needs through addressing barriers to learning, educational institutions are required to provide support services and positive life experiences to learners (Mantey, 2011). Support service, in the context of special education, refers to a wide variety of social services, instructional methods, or school resources provided to students with disabilities in the effort to accelerate their learning progress, and catch up with their peers without disabilities in order to succeed in school. Support services include sign language interpreting, guidance and counseling, note taking, tutoring, opportunity to partake in extracurricular activities such as games/sports, fieldtrips/excursions, real time captioning support and so on. Stinson, Mckee and Elliot (2000), reported that real-

time captioning is an information technology where the speaker's message is translated into electronic text as she or he speaks. According to the authors, real-time captioning is useful because some real-time captioning systems display remains on the screen long enough to allow students with deafness check on and fill in information they might have missed from either the interpreter or the lecturer. Also, the exact technical information and specific vocabulary are produced by the captionist. This technique is indeed helpful as students with deafness will be able to concentrate on the lecturer through the interpreter and not worry about missing some of the content.

In Ghana, the Disability Act (2006), Act (715) stresses the right of persons with disability to have access to facilities in educational institutions. Despite all these efforts, students with deafness and hard of hearing at the university level still encounter many difficulties and challenges (Liversidge, 2003). These difficulties and challenges include unavailability of sign language interpreters during lectures and social gatherings resulting to loneliness and frustrations, rejections on the part of hearing colleagues, university staff and lecturers due to communication barriers. However, the number of students with disabilities including, those with deafness, entering tertiary institutions these days in Ghana has increased. This increase is in response to demands made by the government and the constitutional requirement to increase access to the education system.

In an effort to achieve a broad vision of Education for All (EFA), inclusion has been adopted to address the spectrum of needs of learners, including those with deafness. Inclusion refers to the practice of integrating students with disabilities including those with deafness in the general education regardless of their special needs. The Salamanca Statement of 1994 on the principles, policy and practice in

special needs education also provided valuable reference points for inclusive education as it provides a framework for thinking about how to move the policy into practice. The documents are informed by the principles of inclusion, by recognition for the need to work towards “schools for all” institution which include everybody, celebrate differences, support learning and respond to individual needs. As such, they constitute an important contribution to the agenda for achieving Education for All and for making schools educationally more effective. The framework for action on Special Needs Education was adopted by the world conference on special needs education organized by the government of Spain in Co-operation with UNESCO and held in Salamanca in 1994. Its purpose was to inform policies and to guide actions by governments, international organizations, national aids agencies, non-governmental organizations and other bodies in implementing the Salamanca Statement on Principles, Policy and Practice in Special Needs Education. The framework reflected the national experiences of the participating countries, as well as upon resolutions, recommendations and publication of the United Nations system and other intergovernmental organizations especially the standard rules on the equalization of opportunities for persons with disabilities.

TTU is one of the few universities which have included students with deafness in their general educational programme. During the 2002-2003 academic year, TTU, offered admission to the first ever-student with deafness to study HND in Furniture Design and Productions. During the 2015-2016 academic year, another student with deafness was admitted to study HND in mechanical engineering. The number increased to four during the 2016-2017 academic year. Last academic year (i.e., 2017/2018) TTU admitted 9 students with deafness (2 females and 7 males) to study HND in Computer Science, Furniture Design and Productions, Hospitality, Graphics

and Fashion Design. This academic year (i.e., 2018-2019) the number of students with deafness admitted to pursue HND programs at TTU increased to 11 (4 females and 7 males). These programs the students are pursuing include Computer Science, Interior Design, Fashion Design, Graphics, Statistics, and Hospitality. Currently, a total of 21 students with deafness are studying various programmes in HND making TTU the technical university with the highest number of students with deafness as compared to Koforidua Technical University and Cape Coast Technical University with seven students and two students with deafness, respectively. The remaining five technical universities and two other polytechnics do not have students with deafness enrolled in their programmes. In its effort to ensure education for all and to support students with deafness, this academic year employed the services of three sign language interpreters (including the researcher) on part-time basis. Since the services are on part time basis, the interpreters are not always available to assist students during lectures and other social gatherings. Besides, the interpreters are all not certified or trained interpreters, but they rather studied sign language as a course at the undergraduate level. In addition, at the undergraduate level, the interpreters did 156 credit hours in various courses, out of which only 9 credit hours were allocated to sign language.

At TTU, students with deafness live together in the same halls of residence, attend lectures together, partake in educational trips together, go through the same assessment procedures and attend social gatherings such as matriculation, graduation and sports and games together with their hearing counterparts. Students with deafness have unique learning needs, and therefore their experiences at the university level will help provide them with the required support in order that their needs would be met.

A search by the researcher at the main library at the University of Education Winneba found no evidence of research that had been conducted about students with disabilities, including those with deafness, in any of the technical universities in Ghana. This study, therefore, was intended to explore the experiences of students with deafness towards learning at TTU.

1.1 Statement of the problem

Good teaching methods, easy access to school facilities, the effective use of teaching and learning materials, the use of individual learning, co-operative learning, cordial relationships and friendships, participation in extracurricular activities among students with deafness, as well as an accommodative and friendly learning environment which ensures that all students, irrespective of their learning needs and condition participate fully in class activities, will go a long way in ensuring that the unique learning needs of students with deafness are met. However, students with deafness at TTU seem to have challenges such as absence of sign language interpreters during lectures and other social gatherings, communication challenges, negative attitudes from some lecturers, university staff and hearing peers resulting to failure in accessing the full range of learning experiences.

As a sign language interpreter and a part time staff at TTU, I decided to investigate the extent to which students with deafness at TTU were integrated in the general education programme and other social activities, and how they felt in the absence of their sign language interpreters. Students with deafness at TTU seemed not to be fully involved in the university's activities due to communication barriers. The students seemed to be lonely and frustrated during lectures and other social gatherings

in the absence of their sign language interpreters since the interpreters were not always there to support them.

Additionally, an alternative like real time captioning, which is an information technology where the speaker's message is translated into electronic text as she or he speaks for students with deafness to check and fill in information they might have missed from either the sign language interpreter or the lecturer seems not to be available to assist students with deafness. These reasons motivated me, as a part-time sign language interpreter, to conduct a study on the experiences of students with deafness towards learning at TTU, in order to verify the true picture of what these students are experiencing rather than the viewpoint derived from my experiences as a part time teaching staff.

1.2 Purpose of the study

The purpose of the study was to explore the experiences of students with deafness towards learning at TTU in the Western Region of Ghana.

1.3 Objectives of the study

The study specifically sought to:

1. Explore the academic experiences of students with deafness at TTU.
2. Examine the social experiences of students with deafness at TTU.
3. Find out the institutional support services available for students with deafness at TTU.

1.4 Research questions

The following research questions guided the study:

1. What are the academic experiences of students with deafness at TTU?
2. What are the social experiences of students with deafness at TTU?
3. What institutional support services are available for students with deafness at TTU?

1.5 Significance of the study

Findings of the study would reveal the academic experiences of students with deafness towards learning at TTU. This would enable lecturers and the university authorities implement policies to assist students with deafness in order to meet the learning needs of students with deafness. Findings of the study would reveal the social experiences of students with deafness towards learning at TTU. This would enable hearing students, lecturers and other university staff relate positively with students with deafness at TTU thereby enhancing students' self-esteem and social competences. The results of the study would also reveal the institutional support services available for students with deafness at TTU. This would enable the University authorities to provide students with deafness with the necessary supports to improve their experiences at university. Findings of the present study would add to the deaf education literature and existing theories on the experiences of students with deafness towards learning in tertiary institutions.

Finally, results of the study would also serve as a source of reference to researchers who may be interested in conducting similar studies elsewhere.

1.6 Delimitation of the study

The study was delimited to TTU. The study also focused on the academic experiences of students with deafness with regards to their experiences on communication and understanding lectures, experiences on attitudes of lecturers, experiences on participation in lectures, their experiences during quizzes and examinations and experiences on access to library services. These will help meet the students learning needs and improve on their academic performances.

Additionally, the study focused on the social experiences of students with deafness with regards to their experiences on relationships and friendships with their hearing colleagues, experiences on cooperative/group learning and their experiences on participating in extracurricular activities. This will enhance students' self-esteem and social competence and also avoid marginalization, isolation and loneliness.

The study also focused on the institutional support services available for students with deafness with regards to sign language interpreting services, note taking services, tutoring, and real time captioning. These support services when rendered effectively, will limit the challenges faced by students with deafness in the university. The services will also help meet the unique learning needs of the students.

1.7 Limitation

The researcher had challenge getting students for the interview because they were having their end of second semester examination. However, the researcher overcame this challenge by scheduling the interview on Saturday and Sunday afternoons in consultation with the students themselves. Meanwhile, 18 out of the 21 respondents turned up for the audiological (hearing) assessment and case history. Also, the pure tone audiological assessment was not complete because bone

conduction test, speech test and tympanometry assessment were not carried out due to lack of appropriate instruments. Although, the data collection was delayed and the audiological (hearing) assessment was not completely carried out, the findings of the study were not significantly affected.

1.8 Operational definition of terms

Experiences: Experiences are the enlargement of knowledge and skills through vigorous participation in activities or undertakings. Equally, in the context of this study, experiences refer to the activities students with deafness are engaged in over a certain period as university students leading to an increase in knowledge and proficiency or skills.

Students with deafness: These are students whose hearing losses prevent them from perceiving sound and understanding speech.

Hard of hearing: Hard of hearing is a condition or hearing loss where hearing is possible with the use of hearing aids. Similarly, Hard of hearing in the context of this study describes students with mild hearing losses who hear sound but with some amount of difficulties.

Learning: Learning is the process of gaining knowledge and experiences by studying.

1.9 Organization of the study

The report of the study was presented in five chapters Chapter One included background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, delimitation, limitation, operational definition of terms and the general layout of the study. Chapter Two of the study 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 analysis of data collected and discussion of findings, and Chapter Five covered the summary of findings, conclusions, recommendations and suggestions for further research formed the concluding.



CHAPTER TWO

LITERATURE REVIEW

2.0. Introduction

This chapter presents the literature review for the study. The literature was reviewed from research articles, journals, books and research works on the experiences of students with deafness. The review first covered the theoretical framework and the review on the key themes rose in the research questions. The literature also includes empirical studies and the theoretical framework. The areas discussed were:

- Theoretical framework.
- Academic experiences of students with deafness in Tertiary Institutions.
- Social experiences of students with deafness in Tertiary Institutions.
- Institutional support services for students with deafness in Tertiary Institutions.
- Conceptual framework

2.1. Theoretical framework

The study was guided by Allport's (1954) theory of interpersonal contact. Allport explained that positive effects of intergroup contact occur only in situations marked by four key conditions. These conditions are equal group status within the situation; (ii) common goals; (iii) intergroup cooperation; and (iv) the support of authorities, law or custom.

Equal Status: Allport (1954) stressed equal group status within the situation. According to Allport, when people from different backgrounds found in the same environment are made to understand that they are equal irrespective of their differences, they turn to respect each other.

Common Goals: Allport indicated that in order for Prejudice to be reduced through contact among people from varied backgrounds, there must be an active, goal-oriented effort. The author further explained that, in striving to win as athletic teams, inter racial teams need each other to achieve their goal.

Intergroup Cooperation: Allport (1954) stated that in order to attain common goals, there must be a mutually dependent effort without intergroup competition. Intergroup cooperation in schools and other organizations provides the strongest evidence. When people of different ethnic groups attend the same school or church, they cooperate with each other whenever there is a competition between them and another school or church even if they have majority of their ethnic groups" members in the other organizations.

Support of authorities, Law or Custom: According to Allport, (1954), the final condition concerns the contact's backings. With clear social sanction, intergroup contact is more readily accepted and has more positive effects. Authority support establishes norms of acceptance.

Allport's formulation continues to receive support across a variety of situations, groups, and societies. Bigler, Spears, Brown, and Markell (2001), examined whether the presence of implicit links between social groups and high status against low status attributes affects the formation of intergroup attitudes. Ninety-one elementary school children aged 7 to 12 years were given measures of classification skill and self-esteem, and assigned to one of three types of summer school classrooms in which teachers made (1) functional use of different (blue and yellow) social groups that were depicted by prints as varying in status, (2) no explicit use of different social groups that were nonetheless, depicted as varying in status, or (3) functional use of different

social groups in the absence of information about status. After 6 weeks, children completed measures of intergroup attitudes. Results from the study indicated that children's intergroup attitudes were affected by the status manipulation when teachers made functional use of the novel groups. Children who were members of high status but not low status groups developed in-group biased attitudes.

According to Bridges and Tomkowiak (2010), inter-professional education has been defined as members or students of two or more professionals associated with health or social care, engaged in learning with, from and about each other. Ideally, students trained using inter professional education paradigms become inter professional team members who gain respect and improve their attitudes about each other and ultimately improve patient outcomes. However, it has been found that, before inter-professional education can claim its importance and success, its impact must be critically evaluated. The authors suggested that conditions identified in Allport's Contact Theory may be used as a theoretical base in inter-professional education to positively impact attitudinal change of students towards working as an inter-professional team member. The authors concentrated on equal status and common goals as a theoretical base in inter professional education. They went further to explain that utilizing a sound theoretical base in inter professional education may positively impact students' attitudes towards working in inter professional team.

Moreover, establishing Allport's (1954), proposed conditions for optimal intergroup contact significantly predicts stronger contact-prejudice relationships among members of majority status groups, but not among members of minority status groups. Pettigrew and Tropp (2006) examined differences in contact-prejudice relationships among members of minority and majority status groups, using data from a larger meta-analytic study of the effects of intergroup contact. Results of their study

indicated that the relationships between contact and prejudice tend to be weaker among members of minority status groups than among members of majority status groups

2.2. Academic experiences of students with deafness in tertiary institutions

This strand reviewed literature on the academic experiences of students with deafness in tertiary institutions. Five sub-topics were developed out of this strand, including

- (1) Experiences on communication and understanding lectures in tertiary institutions.
- (2) Experiences on attitudes of lecturers in tertiary institutions.
- (3) Experiences on participation in lectures in tertiary institutions.
- (4) Experiences during quizzes and examinations in tertiary institutions.
- (5) Experiences on access to library service in tertiary institutions.

2.2.1. Experiences on communication and understanding lectures in tertiary Institutions

Education of learners with hearing impairments, including the deaf worldwide, has been one of the most controversial topics. This is because it has been difficult to come up with an agreed communication technique that best suits learners with hearing impairments to determine classroom communication on the academic performance. Classroom communication involves interactive communication, language and responses between learners and teachers (Marschark, Convertino, & LaRock, 2006). This implies that classroom communication for learners with hearing impairments should comprise a special education teacher who is capable of communicating in sign language.

Communication plays an important role in ensuring that students with deafness understand lectures. Students with deafness understand what is being communicated at the lecture hall through sign language. Therefore, should it happen that the lecturer cannot communicate in sign language, there should be a mediator, who is the interpreter, to interpret all that are being said by the lecturer to the understanding of the deaf.

According to Ekwama (2003), classroom communication is one of the most important aspects to consider when discussing the successful teaching and learning of learners with deafness. It is important to discuss classroom communication because it is the very aspect where the disability poses the greatest challenge for the learners and teachers. The result of such a challenge is persistent poor academic performance. Realizing that, to some extent classroom communication exists between teachers and learners; it became necessary to determine classroom communication on the academic performance of learners with hearing impairments.

According to Ainscow (2007), communication has to do with acquisition and abstraction of meaningful information processing and storing in short term and long-term memory and retrieval of information. It includes language components of phonology, syntax, morphology, semantics and pragmatics. It can be seen from the above analysis that classroom communication is a very important component in the teaching and learning process of all learners, with or without special educational needs. This is because classroom communication enables learners to understand the content of the lesson and also to communicate effectively with the teacher as well as their fellow peers. Ainscow (2007) reported that classroom instruction that produces positive results acknowledges the need for a liberal use of nonverbal cues, student

involvement and team communication language and learners with hearing impairments. Teachers of the deaf in Africa, most of who are hearing, lack appropriate training and certification to equip them with the knowledge and skills to work effectively with the deaf (Kiyaga & Moores, 2003).

Adekemoyo (2008), conducted a study on classroom communication and placement of learners with hearing impairments in an inclusive class in Nigeria. The outcome of the study revealed that to support improved outcomes of students with hearing impairment including those with deafness, it was important that their direct experiences in the classroom were understood. The classroom environment and activities were what learners experienced directly and were the mechanism through which educational interventions were most likely to produce desired improvements in learner performance. Mittler (2000), suggested that teachers should teach in a way that does not exclude the sensory impaired pupils including those with deafness from tuition. A study carried out in Zambia by Malunga (2007), titled “An investigation on the use of sign language and oral language by regular teachers teaching”, learners with hearing impairment also showed that, in relation to the learning environment, the best possible conditions would need to be in place. For example, quiet place and good lightening. This would allow students with hearing impairment to concentrate and follow what is being lip-read. Lip-reading would be used in line with other communication approaches. While teaching in classrooms, instructors must keep their faces visible especially for hearing impaired students, a preferable sitting place for them would be in the front (Kigotho, 2016). However, left or right side of the room can be selected according to the better ear of the student (Lockwood 2001). Instructors need to learn the effective ways of communicating with hearing impaired

students as well as have guidance about the classroom acoustics and hearing devices used by students with deafness (Lanfer, 2006).

A study by Hyde and Power (2003), revealed that most instructors were reluctant to invest time in training and professional development on how best to accommodate students with deafness, citing the small percentage of these students in their classes. Adu (2016), explored the social and academic experiences of students who are deaf at the University of Education, Winneba. Fourteen students who are deaf were purposively selected from a population of 36 students. Data were gathered through a semi-structured interview guide. Data were coded and analyzed using thematic approach. Results of the study revealed that in the absence of their sign language interpreters, some of the students employed the services of students who could sign. Other students did not see the need to employ the services of their hearing colleagues in the absence of an interpreter. Participants further indicated that they were often given prior notice before their assessment dates and were assessed on subject contents covered. Findings of the study also revealed that some of the students preferred one of the two interpreting types (simultaneous and consecutive interpreting).

Kigotho (2016), investigated the barriers faced by students with hearing impairment in an inclusive learning environment at the University of Nairobi. The participants comprised of 10 students who were hearing impaired at the university and data were obtained through semi-structured interviews and key informant interviews. The study was guided by a conceptual framework, which explained the relationship between institutional and social barriers affecting the hearing-impaired students and the learning outcomes achieved when the barriers were present and when the barriers had been eliminated. Data analysis was done through grounded approach in line with

specific objectives. The outcome of the study revealed that lecture method of teaching to a class that had students with deafness affected their learning outcomes negatively and lecturers were unable to meet the demands of modifying and delivering an appropriate mode of teaching students with deafness. In addition, issues such as rapid rate of instruction and discussion, rapid turn taking and rapid change of topics by lecturers were insensitive to the needs of the students with deafness trying to follow the lecture.

Tsuladze (2015), explored the teaching and learning at the University of Oslo. The Cultural-Historical Activity Theory taking roots from the cultural-historical traditions makes the conceptual framework of the study. The process of education was conceptualized as an interaction of two related activity systems: teaching and learning. The main focus of the study was the means of mediation communication and teaching strategies, as well as the challenges, resources and possibilities of the teaching-learning practice. A qualitative descriptive case-study design was adopted to guide the study. Three students with deafness of the vocational education and their vocational education teachers were selected based on purposeful sampling. A qualitative semi-structured interview was the main method of the data collection. The findings were based on the thematic analysis and interpreted within the conceptual framework of the study. The outcome of the study revealed that the teachers and learners give preference to direct communication in the course of personal interaction, while sign-language mediation was the main means of delivering theoretical content. The sign language interpreting service appears as a vital resource of deaf vocational education. However, the study revealed the need to enhance a sign language-mediated as well as direct teacher-learner communication for the educational benefit of students with deafness.

2.2.2. Experiences on attitudes of lecturers in tertiary institutions

Studies have shown that teacher expectations about the abilities of students with deafness influence the way they achieve in mainstream classrooms. Numerous studies have shown that teachers often have lower academic and behavioral expectations of students with hearing impairment than of their hearing peers (Sari, 2007; Thumann-Prezioso, 2005). Jarvis and Iantaffi (2006) reported that when teachers become more knowledgeable about the needs of students with deafness, their attitudes and expectations are generally more positive, leading to better outcomes for the students. According to Youngs and Youngs (2001), positive teacher attitudes are related to better outcomes for students with deafness.

Cho and DeCastro-Ambrosetti (2005), examined attitudes of pre service teachers towards students with deafness before and after completing a training module in multicultural education. The authors found that prior to training, the majority of teachers believed low academic achievement of students with hearing impairment need is related to family values and did not consider the potential contribution of school factors. With this attitude, teachers would be unlikely to believe that they could make beneficial changes within their classes and they would be less likely to make accommodations for students with hearing impairment.

According to Noddings (2001), a successful and caring teacher–student relationship must be directed and sustained by the educator. Baker (2006), assessed the contribution of teacher–student relationships to student school adjustment by surveying 68 teachers on the social development and behaviour of 1310 elementary students. The results of the study revealed that teacher–student relationships were moderated by student developmental vulnerabilities, learning problems, and other

significant child characteristics. Baker (2006) concluded that a positive teacher–student relationship provided children with the emotional security to fully engage in learning activities and that a protective effect was evident for developmentally vulnerable participants only when they had a close relationship with their teacher. Israel, Ower, and Goldstein (2002), conducted an in-depth interview with seven students with severe and profound hearing loss. The outcome of the study revealed that teachers tend to stereotype and misunderstand the actions and feelings of a hard of students with deafness and that teacher’s attitude strongly influenced their peers’ attitudes at school.

2.2.3. Experiences on participation in lectures in tertiary institutions

Educators readily acknowledge the need to focus on the intellectual development of all students, but equally important is students' social-emotional development. The stigma of being labeled has left many students with disabilities including those with deafness feeling unwanted, insecure, and isolated in classrooms across the nation. According to Lavoie (2007), teachers need to create a classroom environment in which students feel secure and accepted. He stresses the importance of building student confidence and self-esteem through daily classroom routines and rituals. Educators must also teach students with disabilities including those with deafness to build positive relationships with others.

Essential to the search for solutions is the issue of classroom participation of students with deafness. Several research has indicated that active learning, interactive learning, classroom discussions enhance the academic success of students. In a study focusing on learning styles of 100 college students who are deaf, Lang (2002), employed Grasha-Reichmann Student Learning. Styles scales, describing how each student’s profile is made up of six scores representing different styles of learning.

The author found a moderate but significant correlation between the participative learning style and academic achievement as measured by course grades. As with similar studies with hearing students, it appears that the more involved a student with deafness is in the classroom, the better that student's chance will be for learning the course material. Research with a variety of instructional approaches has shown a possible pattern favoring active learning as compared to passive learning. Several studies on instructional approaches that encourage participation and, especially, invocation of relevant active processing of information, have shown improvements in learning by college students who are deaf. On a test of immediate factual recall, low-ability readers involved with the interactive learning strategy performed as well as high-ability readers who had the text without questions. The adjunct questions may have encouraged more thinking about what was being read than the more passive viewing of text, pictures, and signs. In both of these students, the approaches that involved the students more resulted in better retention of knowledge. Unfortunately, there is a larger body of research findings indicating that participation or active engagement by deaf students in higher education is one of the most difficult goals to meet in the mainstreamed classroom environment, which is characterized by instruction through support services.

In a study of the perceptions of academic engagement, Foster, Long, Marron, E., Rasmussen & Sour (2005), reported that deaf and hearing postsecondary students generally viewed their communication ease and engagement as similar. There were many differences, however, in terms of the specific methods or needs for interacting within a class. Students with deafness showed a significantly lower satisfaction than hearing peers with the teacher's pace, for example, expressing concern that teachers often do not make sure that understanding is occurring before proceeding with the

lecture. According to these investigators, participation in discussions was inhibited for many students who are deaf because interpreters were not available, familiar with the content, not visible from where the student was sitting and using a mode of signing similar to the student. Forty eight percent of the students with deafness in this study mentioned interpreting as a factor.

Fuller, Healey, Bradley, and Hall (2004), reported the obstacles faced by students with disabilities including students with deafness at the university level. The results of their study indicated that there were many barriers to inclusive instruction such as the fast rate of teachers' speech during lectures, difficulty in participating in discussions and answering the questions. When teachers expect less or do not encourage full participation in the classroom, this can result in learned helplessness and dependency (Antia, Stinson, & Gaustad, 2002).

2.2.4. Experiences on quizzes and examinations in tertiary institutions

Almost all tertiary educators make assessment choices. For example, when they create an assessment task, design a rubric, or write multiple-choice items. Educators potentially have access to a variety of evidence and materials regarding good assessment practice but may not choose to consult them or be successful in translating these into practice (Norton, 2009).

Globally, higher education sectors are under increased pressure to break away from this cycle of tradition. They are immersed in an era of new academic standards of mass participation of students who want to be active in the learning process and are under increased pressure to develop productive assessment practices (Phillips, 2005).

It is important to consider assessment and the level of learner participation in the assessment as an intrinsic part of learning. By integrating learning and instruction in the assessment process, learners share in the responsibility for determining levels of

understanding and assessment develops as a powerful learning tool (Dochy, Segers, Gijbels, & Struyven, 2007). Self-evaluation, reflection, collaboration and peer-assessment all become key factors in learners thereby making them active assessors of their achievement. This involvement also enables them to become comfortable with any report on achievement shifting away from a single score to a profile (Dochy, Segers, & Gijbels 2007). In addition, through learners experiencing assessment, where a variety of tools offer interesting, meaningful, authentic, challenging and engaging opportunities, the intent of assessment shifts from a single reflection of students' cognitive performances to one that also demonstrates metacognitive, social and affective learning outcomes (Dochy, et al., 2007).

.According to Marschark, et al. (2006), students with deafness and their hearing colleagues should be assessed on the same content areas, since students with deafness learn the same things as their hearing colleagues. However, due to the communication challenges faced by students with deafness, some adaptations can be made in order to meet their learning needs. They need to be given some additional time during examinations and quizzes so that they can have enough time to answer questions.

2.2. 5. Experiences on access to library services in tertiary institutions

According to Zainab (2013), the right to access facilities, sources and services without any limitations is one of the fundamental rights of any society. Ideally, libraries should be accessible to all potential users without regard to any disabling condition. Chima and Eskay (2013) indicated that as depositories of information, libraries constitute a key institution of democratic societies, yet people with hearing impairment often discover that communication difficulties can be a serious barrier to their using the library to its full potential The academic library has traditionally been

seen as the „heart of every university serving the academic community of its parent institution

Brophy (2001), noted that many other commentaries on the academic library as the centre of scholarly activity, neglect the fact that for most university researchers such notions simply do not reflect reality, if they ever did. In this context, there has been a continuous concern about the role and status of the academic library. According to Chima and Eskay (2013), most libraries have not considered focusing particular attention on the provision of library services for students with deafness. Deafness has been called, with good reason, the invisible handicap because people with deafness are not identifiable as deaf by casual observation and they tend to blend into the larger community. Additionally, people who are deaf from birth or from an early age often have difficulty in reading and have a tendency to not use libraries. A substantial portion of the population is deaf and libraries have a responsibility to ensure that their collections and services are accessible to people with deafness, and that people who are deaf are aware of the services libraries can provide them.

Although there have been library services offerings by a good number of libraries overseas, relatively little is available in the way of skilled personnel or adapted facilities to meet the needs of persons who are deaf. Librarians still tend to be unprepared to cope with the special and varied communication needs of the deaf and also to promote action towards making their facilities accessible to them. In spite of the pervasiveness of hearing losses, disability remains a serious barrier to communication in the use of libraries (Chima & Eskay, 2013). Students with deafness communicate with hearing people in a variety of ways. Depending on their background, degree of hearing disability, cultural identity and the situation, people who are deaf may use sign language, speak, write, use gesture, or use any

combination of the above. In the provision of library services, it is essential that library staff is aware of this variety and that they have the training necessary to know what to do in order to understand and to make them understood comfortably. Libraries with a large number of students with deafness should seriously consider ensuring that at least one staff member who has responsibilities for the provision of services to people who are deaf must be at least moderately fluent in sign language and that other public service personnel have experience with basic signing as appropriate. The medium of communication for students with deafness is mostly sign language. Therefore, for these students to communicate effectively, they must express themselves in sign language. Most library staff in tertiary institutions lacks the skills and knowledge in signing. A lot of them lack knowledge about deafness.

Chima and Eskay (2013), suggested that to ensure easy access to library facilities among students with deafness and to ensure effective communication between students with deafness and library staff, the following measures must be put in place:

1. All library staff should receive training on how to communicate effectively with deaf people.
2. A text telephone (TTY) should be available at each main service point such as the reference desk in each library. Additionally, at least one TTY should be available for use by library clientele to make telephone calls from the library if the making of such calls is available to hearing clientele.
3. Telephones for use by library staff should be equipped with amplification.
4. Libraries should ensure that their Internet presence is wholly accessible.

5. Libraries should use the latest advantages in technology for communicating with students with deafness where such technology has proven beneficial within the deaf community.
6. Libraries should have communication aids such as assistive listening systems and equipment that can be used to support computer-assisted real-time captioning or computer-assisted note taking. These services should be available for meetings and programs upon request.
7. Libraries with television viewing facilities should provide closed caption television decoders for use by all students.
8. Libraries should offer to provide sign language and oral interpreters, computer-assisted real-time captioning, or computer-assisted note taking services for all library sponsored programs upon request.
9. Libraries should install visible warning signals in order to alert students with deafness of problems and emergencies.

As with many disabilities, the biggest barrier to service for people who are deaf is often other people's attitude. People who are deaf may use sign language, read lips, use an interpreter, write their communication or use a combination of all of these when they want to access public library services. Service desk staff needs training to understand how best to offer services to people who are deaf or who have a significant hearing loss. The library is required to provide reasonable accommodation to the method which the deaf want to use to communicate

(<https://dpi.wi.gov/pld/yss/resource-guide-2002>).

Soman and Sudhier (2015) investigated the information seeking behavior of students with deafness in school libraries. A questionnaire was used to survey the participants in the study. The analyses of the data revealed that the information needs

of students with deafness were complex and problematic due to the insufficiency of adequate information sources and services, and there were quite a number of challenges that the participants faced in accessing information from the libraries. It was found that, even though assistive technologies played a vital role in the educational aspects of students without disabilities, it did not play similar role in the progress in library services for students who were hearing impaired. Most of the students be situated not aware of the assistive technologies available to assist them in accessing information. The study found that, though the library services provided in the school were useful for the participants, they could not make use of the available technologies because of barriers. The authors recommended the use of assistive technology to improve or increase accessibility of the library facilities for students with hearing impaired students.

2.3. Social experiences of students with deafness in tertiary institutions

In the past, children with disabilities were believed to be inferior to their non-disabled peers, and that it was deemed essential to teach them in separate special schools where they would not only receive specialist services, but also avoid disturbing the learning of others (Green & Engelbrecht, 2007). As the frontiers of ignorance gradually receded, it was realized that it might not be in the best interests of those with disabilities or even society, for them to be separated from the mainstream. There was a paradigm shift to what Mpofu et al. (2007), call the expression and promotion of egalitarian societal values of equal opportunity and access to the resources necessary for the acquisition of abilities and skills that enable meaningful societal participation by individuals in their communities. Green and Engelbrecht stated that, in inclusive education, the emphasis is on provision, within the mainstream school environment, of the conditions and support that will enable diverse

individuals to achieve certain specified educational outcomes which may, or may not be understood to be the same for all learners.

Chakuchichi, Chimedza and Chinez (2003), reported that inclusion is fostering an even learning environment for all children in their beliefs, values and norms. Therefore, inclusion may be seen as a tool for cultivating cultural and social values in hearing children and their peers with deafness. The foregoing seems to suggest the meeting of diverse needs and accommodation of all students in the nearest regular schools.

Martin and Bat-Chava (2003) reported the findings of a study which found that students with hearing impairment in a mainstream setting were neglected by the hearing students in terms of socialization. Experiences of graduates with hearing-impairments from inclusive institutions seem to indicate they were and isolated because they could not communicate easily with their classmates (Angelides & Aravi, 2007). In addition, they might have felt isolated and lonely (Kluwin, Stinson, & Colarossi, 2002; Stinson & Kluwin, 2011). For children with deafness in a co-enrollment programmes, the image of social integration seems somewhat more positive. Co-enrollment classes include both children who are deaf and hearing who are co-taught by a general education and a special education teacher. In theory, co-enrollment programs provide the opportunity for intensive contact between children with deafness and their hearing peers in an environment where they are not the only deaf or hard-of-hearing children (Antia & Kreimeyer, 2003). Kreimeyer, Crooke, Drye, Egbert, and Klein (2000) found that interaction between deaf or hard-of hearing students and their hearing peers increased during the co-enrollment program studied. In the very few co-enrollment programs studied, mostly located in the United States, children who are deaf or hard-of-hearing did not seem to feel lonely or isolated, did

not have a lower self-esteem, and did not differ from their hearing peers in how much their peers liked them (Nunes, Pretzlik, & Olsson, 2001). However, Nunes et al. found children who are deaf or hard-of-hearing to be neglected more often than their hearing peers and to have less friends in the classroom. According to Moeller (2007), students with deafness may have difficulty participating in socially oriented learning opportunities in inclusive educational settings.

Punch and Hyde (2005) reported that social self-concept of young people who are deaf may be particularly vulnerable due to difficulties in the area of social participation with their peers. Kent (2006), suggested a reluctance to self-identify as students with deafness that may adversely impact students' development of a healthy self-concept and sense of competence with peers. In the study by Israelite et al. (2002), participants reported that being deaf is like being trapped between two worlds. They spoke of their efforts to crack the code of unknown rules for communicating with typically hearing peers. These students were caught Students with mild and moderate hearing loss. Punch and Hyde (2005), explored whether or not students with moderate to profound hearing loss avoided occupations demanding social interaction. Sixty-five integrated adolescents, one-third of whom had moderate hearing loss, were surveyed on scales of loneliness, and 12 of the students were also interviewed. Survey results showed no statistical differences on measures of loneliness between students with hearing impairment and typically hearing students. However, the interview data detailed participants' intense sense of social isolation and negative peer experiences culminating in reduced confidence in academic and social interactions. The authors stressed that teachers need to be particularly sensitive to these students' intense desire for normalcy, to their reduced self - confidence, and

must actively facilitate social inclusion with peers, both inside and outside of the classroom.

Miller and Mizrahi (2000), studied how university students with deafness in Israel related with hearing and deaf cultures. They reported how their orientation to these cultures as well as their bicultural identity, immersion identity and marginal identity related to social adjustment and loneliness. Students who are hard of hearing relate more closely to hearing culture than students with deafness. Such an orientation however, was not associated with social adjustment or loneliness among these students. The biggest problem and root cause of the increase in isolation and anxiety is communication difficulties fostered by the mainstreamed setting. A study of mainstreamed students showed that rather than being actively disliked, hearing impaired students were neglected by the hearing students in terms of socialization (Martin & BatChava, 2003).

The experiences of the hearing impaired graduates of inclusive institutions seem to indicate that during their attendance in these schools they encountered feeling of marginalization and isolation because they could not communicate easily with their classmates (Angelides & Aravi, 2007).

This strand reviewed literature on the social experiences of students with deafness in tertiary institutions. Three (3) sub topics were developed out of this strand, these are:

- (1) Relationships and Friendships experiences among students with deafness in tertiary institutions.
- (2) Experiences on cooperative learning among students with deafness in tertiary institutions.

- (3) Experiences on participation in extracurricular activities among students with deafness in tertiary institutions.

2.3.1 Relationships and Friendships experiences among students with deafness in Tertiary Institutions

Children need relationships and friendships to develop social skills. These skills are necessary to develop social relations later on in life. Children with different degrees of peer acceptance, social competence, and friendship relations show differences in their behavioral development. Also, popular children are well liked by many peers and show many pro- social behaviors such as cooperating, helping, and being considerate. They are more sociable, often display behaviors such as associative play, friendly approaches, and social conversation, and they seldom engage in aggressive behaviors. In contrast, rejected children are frequently disliked and infrequently well liked, often display aggressive and antisocial behaviors 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 low social skills. 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 behaviors 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. Children who do not have any friendship networks are not very visible in the classroom and show a high degree of socially withdrawn behavior. 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 children who are deaf Kluwin et al (2002, Nunes et al. (2001), and Johnson, Johnson and Stanna (2000) found no interrelations between these variables.

Opong et al. (2017), explored the social experiences of students with deafness at UEW. Fourteen students with deafness were purposively sampled from a population of 36 students. Data were gathered through a semi-structured interview, and were coded and analyzed using themes that emerged from the interview. Results of the study indicated that, generally, students with deafness had a lot of experiences on communication at the lecture halls. They indicated that their problems were compounded more especially when sign language interpreters were absent. The respondents indicated how they felt left out when their interpreters were absent, and stressed that they were not informed about pertinent issues such a change in venue and time of some lectures when their interpreters were absent. The participants further stated that the practices of some of the lecturers made them feel very uncomfortable at the university. Other hearing students and lecturers were also found to make mockery of the students with deafness. The only study that looked at mutual nominations was the one by Nunes et al. (2001). However, their conclusions were drawn from nominations on inviting a child to play at home, not on whether a child being a friend. Alysha (2018), investigated the social adaptation of nine pupils with deafness in two mainstream schools using three methods: peer ratings, socio metric status and interviews. The average peer ratings received by pupils with deafness were not significantly different from those of hearing pupils. Thus, these pupils who are deaf were not more disliked by their peers. However, they were significantly more likely to be neglected by their peers and less likely to have a friend in the classroom. Hearing pupils who were friends of the deaf described their friendship as involving pro-social

functions whereas many who had no friends who are deaf found communication an obstacle to friendship. The author concluded that, although pupils with deafness were not rejected in mainstream schools, they might feel isolated. It is possible that schools can have a proactive role in helping hearing pupils learn how to overcome communication barriers and develop more positive attitudes towards deaf pupils.

2.3.2 Experiences on cooperative learning among students with deafness in tertiary institutions

According to Sicord and Wiig (2009), teachers of the deaf, are traditionally assigned smaller classes, and within these small classes, many different groups can emerge. It becomes very beneficial for students with deafness with additional learning disabilities to be placed into a smaller group setting. The authors went further to explain that a smaller group of students minimizes the distraction of the classroom and makes concentrating on the task at hand easier for the student. Small group instruction also helps the teacher to teach to the different levels within the classroom. While the teacher is working with one group, other groups can be working with each other to complete an activity. Busch (2012) reported that cooperative/group learning helps students with deafness, who have additional learning challenges to learn within a group of peers. Cooperative learning, according to Busch, also helps promote independence and team building within the classroom.

Marzano, Pickering, and Pollock, (2001), indicated that for students who have hearing loss and additional learning challenges, this teamwork helps to build a basis for social skills that are needed later in life. Marzane et al. further stated that teachers may use cooperative learning to include all students in classroom activities to promote academic and social success, and to teach students to respect themselves

and others. Cooperative groups may also provide the additional support most struggling students and students with disabilities including those with deafness need. By carefully structuring cooperative learning groups, educators can foster interdependence among students, provide peer support for learning, and improve student engagement. Further, assigning and rotating group roles such as group leader, recorder, and time keeper will help cultivate the development and use of organizational skills, as well as foster social-emotional growth.

2.3.3 Experiences on participating in extracurricular activities among students with deafness in tertiary institutions

Extracurricular activities are school based organized student activities typically carrying no academic credit. Participating in extra curriculum activities can lead to the establishment of peer relations, acquirement of socially appropriate conduct, and forming the basis for academic achievement. These skills can be developed in extracurricular activities, which usually offer experiences of teamwork and support the development of many social, cognitive, and physical. Studies in the area indicate that both the type of extracurricular programmes and level of participation may impact the individuals' development. Students' participation in extracurricular activities is not common for children with disabilities including those with deafness. Kleinert, Miracle, and Sheppard-Jones (2007) reported that evidence has been put forward suggesting that extracurricular activities might be particularly beneficial for at-risk populations. The authors went on to say that for children with disabilities who qualify for special education, there is a need to design and provide appropriate academic and appropriate extracurricular and nonacademic activities. These activities, according to Kleinert et al., include the school sports and recreational activities, clubs like mini media, environmental protection, anti-HIV club, and others.

According to Peck, Roeser, Zarrett, and Eccles (2008), participation in voluntary, school-based extracurricular activities increase school participation and achievement as acquisition of interpersonal skills and positive social norms, membership in pro social peer groups, and stronger emotional and social connection. Peck et al further indicated that students' participation in extracurricular activities is not common for children across disability groups.

Kentiba and Asgedom (2017) studied the elements contributing to limited participation of children with disabilities, including those with deafness, in school-based sport extracurricular activities using a descriptive survey design involving 36 purposively-selected participants. Observation using check lists, semi-structured questionnaires and structured interview was administered. The data obtained were analyzed qualitatively and quantitatively. The outcome of the study showed that school-based sport extracurricular activities were unequal among students with disabilities and students without disabilities. This violated the UN Convention on the Rights of Persons with Disabilities (UN, 2007), which required all countries to ensure that children with disabilities have equal access to participation in play, recreation, leisure and sporting activities with other children, including those activities in the school system.

Klinert et al. (2007) offered several ideas for getting students involved in school and community activities and programs. These include:

1. Classes that include extracurricular activities as a part of their requirements, such as drama, dance, band, choir and orchestra.
2. School-sponsored sports
3. School clubs, such as camera club or yearbook
4. Classes or lessons outside of school, such as drama, dance, gymnastics, sports lessons, music lessons, swimming lessons, and horseback riding

5. Spending time together with peers, for example, doing things together or visiting each other on weekends.
6. School-sponsored social activities, including dances, skating parties, sporting events, and overnight class trips.

Educators and families should encourage and support students' active participation in the activities best suited to their interest and strengths.

Kentiba and Asgedom (2017), indicated that high school extra curriculum is one arena in which students of higher socioeconomic standing and greater academic ability have a distinct advantage. Given the differential rates of participation, and specifically the increased rates by various minorities, restricting access to or eliminating specific activities may make student access, and the resulting benefits from participating less equitably distributed among the student population.

2.4. Institution support service for students with deafness in tertiary institutions.

This strand reviewed literature on the measures taken by authorities in tertiary institutions to improve the experiences of students with deafness. Four (4) sub strands were developed from the major strand. These are:

1. Experiences on sign language interpreting support among students with deafness in tertiary institutions.
2. Experiences on note taking support among students with deafness in tertiary institutions
3. Experiences on real time captioning support among students with deafness in tertiary Institutions.
4. Experiences on tutoring support among students with deafness in tertiary institutions.

2.4.1. Experiences on sign language interpreting support among students with deafness in tertiary institutions

Educational interpreters are professionals who play a pivotal role in facilitating communication between students with hearing impairment, their teachers and hearing peers. Educational interpreters have special professional knowledge or skills, and credentials that qualify them for this service.

Mazoue (2011), explained that sign language interpreters play a key role in assisting deaf students in overcoming some of the problems generated by their poor literacy levels. They do not only translate what is said by the lecturer during lectures and act as the voice of deaf students when they want to ask a question or need further explanation, but they make notes of the subject matter in a simplified form of English when necessary, such as when the language in the text book is too difficult for the deaf students to understand. The limitations of their low literacy levels make it necessary for interpreters to have notes in a form which the deaf students can understand, or which can be explained to the students by the interpreters; this is essential as some of the language used in lectures and textbooks is unfamiliar to the deaf students. Without doubt the students with deafness would have to learn the correct vocabulary but the interpreters would have to clarify the meaning of the words. Swift (2012), reported that deaf community began to develop an intense pride which resulted in a rejection of the paternalistic help they were often given and, consequently the interpreter was seen as a neutral professional who just interpreted. To avoid the latter and create harmonious environments, interpreting for students with deafness in an educational setting should be regarded as requiring a unique set of skills, allowing an individual to simplify communication in the auditory and visual channels. Lang (2002) stated that interpreters need to be more aware of the barriers

that students with deafness experience as identified in many studies. Such awareness may enable them to adapt their interpreting and advice teachers and students accordingly.

Marschark et al. (2005), investigated the access to postsecondary education through sign language interpreting in the United States. The study included 23 interpreters, 105 deaf students and 22 hearing students. Students saw two interpreted university level lectures, each preceding by a test of prior content knowledge and followed by a post – lecture assessment of learning. A variety of demographic and qualitative data also were collected. Variables of primary interest included the effects of a match or mismatch between students interpreting preferences (interpreting vs. transliteration) and the actual mode of interpreting, student’s interpreter familiarity and interpreter experiences. Results clarified previous contradictory findings concerning the importance of students interpreting preferences and extend. Earlier studies indicated that students with deafness acquire less than hearing peers from interpreted college-level lectures.

Antia and Kreimeyer (2001) investigated the roles of interpreters in an inclusive classroom through a qualitative, three-year case study of three interpreters in an inclusive school. Interviews were conducted with interpreters, classroom teachers, special education teachers, and administrators. The interview data were supplemented with observations and field notes. Results indicated that in addition to sign interpreting between American Sign Language and speech, the interpreters clarified teacher directions, facilitated peer interaction, tutored the deaf children, and kept the teachers and special educators informed of the deaf children's progress. The interpreter and the classroom teachers preferred this full-participant interpreter role, while the special educators and administrators preferred a translator role. Classroom

teachers were more comfortable with full-time interpreters who knew the classroom routine, while the special educators and administrators feared that full-time interpreters fostered child and teacher dependence.

Marschark et al. (2005) recognized that even with interpreting and note-taking services, students who are deaf at universities receive less information from lectures and tutorials than their hearing peers. In that study, Marschark et al. investigated experiences of students who are deaf on sign language interpreting at Rochester Institute of Technology (RIT) in the United States of America. The results of the study revealed that the students did not acquire as much information from lectures as their hearing peers even with experienced interpreters who were familiar with the students

Oppong et al. (2016) explored perceptions of students who are deaf about the quality of sign language interpreting services they received in a public tertiary institution in Ghana. The study focused on students who were deaf and who used sign language interpreting services. A descriptive survey design was adopted to elicit from respondents their views about the quality of sign language interpreting services they received. A 15-item questionnaire that employed a four point Likert scale was used to gather data. Out of a target population of 34 students with deafness in the institution, 23 were randomly sampled for the study. Among other findings, the study found that the quality of sign language interpreting services was a concern to students who were deaf and who used interpreting services in learning.

Lang (2002), studied the experiences of deaf students who attended bilingual schools and identify with the deaf culture. The starting point was field research with three young women and two young men aged between 21 years old and 27 years old, who had been enrolled in undergraduate courses for at least three semesters. The work

consisted in semi-structured, individual interviews, conducted by a deaf female scholarship-holder and recorded on video; these interviews were later translated into Portuguese and analyzed for their content. The two results showed 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 Libras [Brazilian sign language] interpreter.

2.4.2 Experiences on note taking support among students with deafness in tertiary Institutions

The provision of note taking services is crucial for most students with deafness at the postsecondary level in classes designed for students with normal hearing. Numerous authors have attested to its importance (Wilson & Korn, 2007). Collectively, more deaf and hard of hearing students in mainstreamed postsecondary settings use note taking services than any other available support service (Cawthon, Nichols, & Collier, 2008). It has been said that having an interpreter guarantees equal access to the classroom, but having a note taker guarantees equal access to the information from the class. Like tutors and the use of assistive listening devices in the classroom, each serves its own useful function; they are not redundant.

One of the main characteristics of learning for students with deafness in mainstream universities is the students' dependence on a third party to provide access to information. As pointed out by Lang (2002), the literature on note taking and note review by hearing students assumes that students take their own notes. This is a difficult task for most students with deafness in higher education. Language skills and the challenge of attending to multiple visual tasks (interpreters, teacher

demonstrations) make note taking unproductive. An investigation into the perceptions of students with deafness regarding the use of hard copy printouts from real-time captioning of classroom lectures reported that such notes can be useful for students in general, not only for students with deafness. The researcher strongly agrees as this would serve as a reliable record of information, as nothing that the lecturer says in class would be lost or misinterpreted. Even by interpreting and note taking services, students who are deaf at Universities receive less information from lectures and tutorials than their hearing peers (Marschark, 2005).

According to (www.deafconnected.com.au), a note taker must perform the following responsibilities in assisting students with deafness:

1. A note taker takes notes for deaf students who are not able to take their own notes due to the need to focus on an interpreter or to lip read/listen to the teachers or students.
2. A note taker will include all written and spoken information presented during the class, including group discussion, content written on the whiteboard, in a power point or raised in a video.
3. A note taker will aim to organize this information so it is clear, easy to read and concise. This includes highlighting key terms or any points that have been emphasized.
4. Notes may be written by hand or typed onto a laptop, depending on student and note taker preference.
5. A note taker may sit next to the student, so the student is able to look at the notes as required. However, in some instances, the student may not want to sit next to the note taker, and their preference should be respected.

2.4.3 Experiences on real-time captioning support among students with deafness in tertiary Institutions

According to Stinson, Mckee, and Elliot (2000), real-time captioning is an information technology device where the speaker's message is translated into electronic text as she/he speaks. According to the authors, there are a number of benefits in using real-time captioning, as shared. Firstly, for some real-time captioning systems, the display remains on the screen long enough to allow students to check on and fill in information they might have missed from either the interpreter or the lecturer. Secondly, a hard copy of the complete lecture transcript may be available after class when the captions are stored in a computer's memory. Thirdly, exact technical information and specific vocabulary are produced by the captionist. This technique is indeed helpful as students with deafness will be able to concentrate on the lecturer via the interpreter and not worry about missing some of the content. Although it is an expensive system it would be wise for universities to invest in it, as it will help reduce the barriers to learning for the students.

2.4.4 Experiences on tutoring support among students with deafness in tertiary institutions

The fact that students with deafness do not receive as much information from classroom lectures should be a concern to all of us. Spradbrow and Power (2000) documented that hearing-impaired students in Australian universities also report that they miss information during lectures. Tutoring is one support service offered to accommodate this problem. Regardless of the country, this usually refers to a more individualized direct instructional approach, although group tutoring is also utilized.

Orlando, Gramly, and Hoke (1997) found that students with deafness in higher education seek tutoring in the United States not only to improve their course grades

and study skills but to improve their understanding of lectures, to enhance their reading and writing skills, and to clarify their class notes. These latter reasons for seeking tutoring are direct reflections of deafness. Lang, Biser, Mousley, Orlando, and Porter (2004) examined the perceptions of 73 college students who were deaf about tutoring outcomes and emphases, characteristics of tutors, and responsibilities associated with learning through tutoring. The comparisons revealed that while baccalaureate and sub-baccalaureate students have many similar perceptions about tutoring, there are also some striking differences. In particular, as compared to the sub baccalaureate students, baccalaureate students have a stronger preference for focusing on course content and for working with tutors who actively involve them during the tutoring sessions. In addition, baccalaureate students prefer to decide the focus of the tutoring themselves while sub-baccalaureate students tend to leave the decision to the tutor. Stinson et al. (2000), also found that the students value the additional information they were able to acquire through tutoring and held positive attitudes toward this support service. Lang et al. studied the perceptions of students with deafness, university teachers, and faculty tutors regarding various dimensions. The perceptions about tutoring differed among these groups. The emphases in tutoring also reflected participants' degree levels. For baccalaureate students, the emphasis was primarily on course content, whereas for sub-baccalaureate students, there was more focus in tutoring on the development of independent learning strategies, building confidence, organizing for class, and other general learning skills. Lang et al. also found significant differences between the perceptions of mainstream university professors and students with deafness regarding the expertise tutors should have. Perhaps this difference between students and their professors may be explained partly by the fact that the professors did have little or no training with regard to the special

needs of learners with deafness; and this has implications for how university professors might improve their understanding of the integral nature of and need for tutoring as an adjunct support service. Other than these studies of perceptions, there has been little research on tutoring in the higher education of students with deafness and the impact of tutoring on academic performance, despite the large number of such students receiving this support service. In particular, we know little about the most effective ways to tutor students who are deaf to enhance classroom success. Based on ratings about active learning, for example, Lang et al. recommended that research be conducted on whether tutors should model certain behaviors for students, or lead the students to discover principles.

2.5 Conceptual Framework

The framework below (Fig. 2.1), explains how the academic experiences, social experiences and institutional support services enhance the learning progress and success of students with deafness in schools.

Academically, when lecturers exhibit positive attitudes towards students with deafness and communicate with students effectively during lectures, students understanding of lectures will be achieved, thereby enhancing the learning progress and success of students with deafness. Also, when students with deafness are given the opportunity to participate in lectures, giving extra time during quizzes and examinations, as well as having the opportunity to access library services, their learning progresses and success will be enhanced.

Socially, the learning progress and success of students with deafness will be enhanced when they are accepted by their hearing counterparts, lecturers and other staff of the institution. This will prevent isolation and rejections and ensures that the

self-esteem of students with deafness is improved. When hearing students relate well with the hearing impaired, they will not feel rejected and isolated thereby encouraging them to be friendly with their hearing counterparts without fear. Cooperative or group learning and participation in extracurricular activities among students with deafness when encouraged by lecturers and school authorities, will go a long way in ensuring that the learning progress and success among students with deafness is enhanced.

Finally, the provision of support services, such as sign language interpreting, note taking, tutoring supports, and real time captioning supports for students with deafness in schools will ensure that the learning progress and success among students with deafness are met.



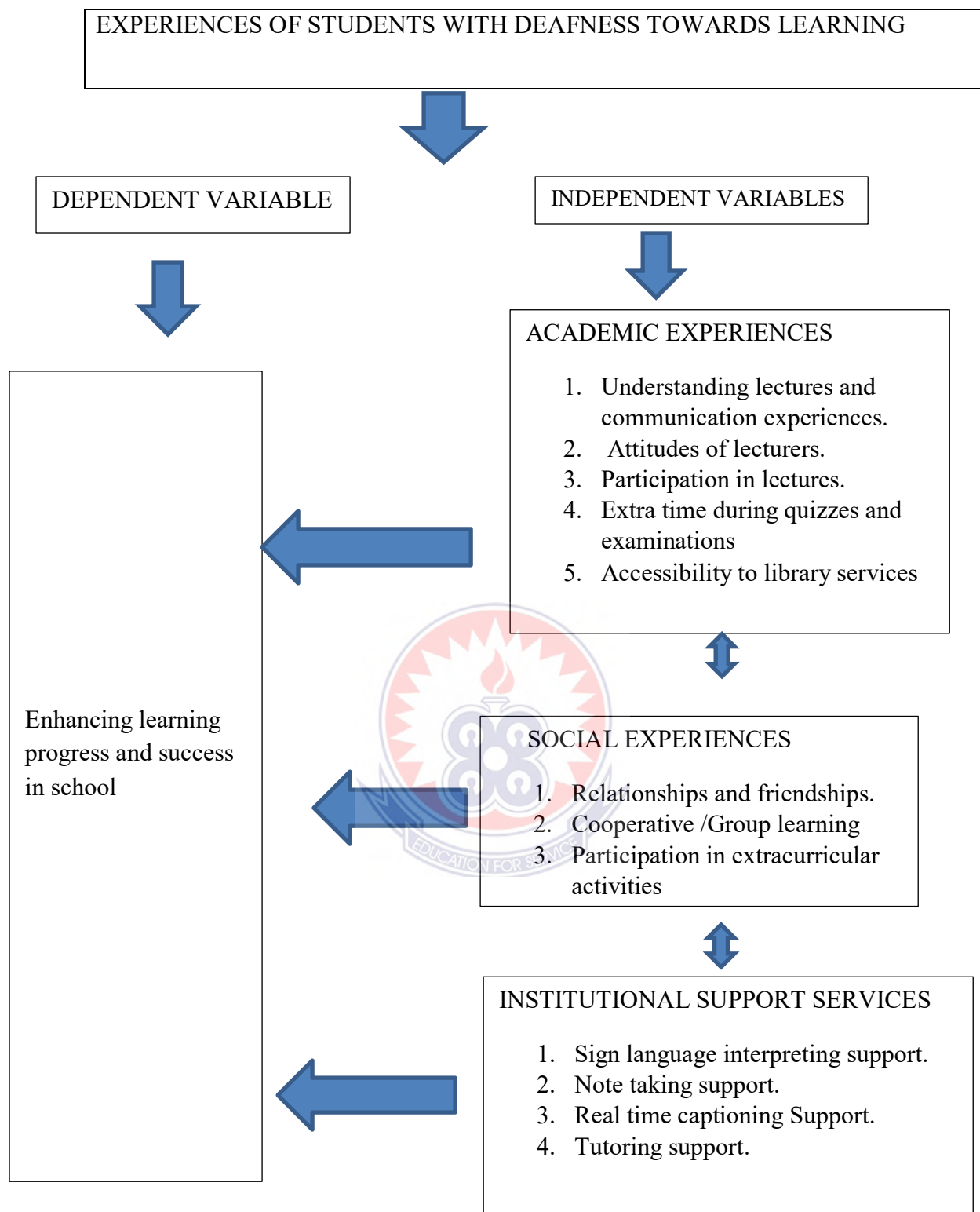


FIGURE 2. 1: Conceptual Framework

2.6 Summary of the literature review

This chapter reviewed related empirical literature on the topic and the theoretical framework. The chapter was discussed under the following areas: a) Academic experiences of students with deafness in tertiary institutions with regards to students experiences on understanding lectures and communication experiences; b) Attitudes of lecturers; c) Experiences on participation in lectures among students with deafness; d) Experiences during quizzes and examinations as well as how students with deafness access library services. Additionally, e) Social experiences among students with deafness in tertiary institutions with regards to their experiences on relationships and friendships with their hearing counterparts; f) Experiences on cooperative learning among students with deafness; and g) Students with deafness experiences on participation in extracurricular activities were also discussed. Discussions about how students with deafness in tertiary institutions are supported in sign language interpreting, note taking, real time captioning and tutoring went on during the literature review. Discussion on the theoretical framework also was covered. Some empirical studies about the experiences of students with deafness towards learning in tertiary institutions were also highlighted.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the methodology for the study. The areas covered were: research approach, research design, population, sample size and sampling technique, instrumentation, validity and reliability, procedure for data collection, method of data analysis, and ethical considerations.

3.1 Research Approach

The study employed the qualitative research approach to explore the experiences of students with deafness towards learning at TTU. According to Kusi (2012), qualitative research involves an interaction between the researcher and the researched in the socio-cultural context of participants of a study. Qualitative approach was necessary for the study because the study explored lived experiences of the students in terms of their experiences towards learning in relation to their academic experiences, social experiences and institutional support services. Findings of the study were arrived at through the exploration of participants' academic and social experiences, as well as institutional support services at TTU using interviews but not by statistical procedures and quantification. Creswell and Creswell (2018) stated that qualitative research approach is an approach used for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. According to the authors, the process of this research involves emerging questions or procedures, with data typically collected in the participant's setting, data analysis inductively building from particulars in general themes, and the researcher making interpretations of the meaning of the data. Creswell (2012) stated that there are five research designs appropriate for qualitative research. These are ethnography,

narrative, grounded theory, case study and phenomenological research. The author explained that, in phenomenological research design, the researcher must use a combination of methods such as conducting interviews, reading documents, watching videos or visiting places. In the present study, the researcher adopted phenomenological research design because in qualitative approach, the researcher gathers information from participants in the participants' own environment through series of questions, data analysis built from general themes and makes interpretations of the meaning of data collected. According to Eladio (2006) the most used instruments for qualitative research are observation, survey, and interview. The researcher adopted the semi-structured interview because, according to Eladio (2006), it is based on flexible topic guide that provides a loose structure of open-ended questions to explore experiences and attitudes. The current study therefore used the qualitative research approach in order to have a comprehensive account of the experiences of students with deafness towards learning from their own point of view.

3.2 Research Design

This study employed phenomenological research design to explore the experiences of students with deafness at TTU. According to Creswell and Creswell (2018), phenomenological research is a design of inquiry coming from philosophy and psychology in which the researcher describes the lived experiences of individuals about a phenomenon as described by participants. This description culminates in the essence of the experiences for several individuals who have all experienced the phenomenon. Phenomenology has strong philosophical underpinnings and typically involves conducting interviews (Giorgi, 2009).

Creswell (2012) stated that when a researcher wants to describe an event, activity or phenomenon, the appropriate research design for qualitative research is

phenomenological research design. Creswell went on to explain that in a phenomenological research, the researcher must use a combination of methods such as interviews, reading documents, watching videos, or visiting places. Phenomenological research design was appropriate for this study because the researcher conducted the semi structured interview on the participants involved in their own setting, took videos during the interview and transcribed the interview into reading documents. To understand the meaning participants' place on whatever is being examined, Creswell suggested that the researcher must rely on participants own perspectives to provide insight into their motivations. Furthermore, Creswell explained that, in phenomenology, interviews are usually conducted on participants of at least 5 and at most 25 for common themes to build a sufficient dataset. Creswell further stated that in phenomenological research design, the focus group must be people who have experienced the phenomenon. Phenomenological research design was appropriate for the current study because the researcher conducted a semi-structured study by interviewing 21 students with deafness at TTU regarding their personal experiences towards learning at the university.

According to Johnson and Christensen (2008) cited in Adu (2015), phenomenological design permits the researcher to discover participants' feelings about their current experiences and to understand their personal meaning. The researcher therefore used focus-group interviews to seek the views of the participants to give them the opportunity to freely express their live academic and social experiences as well as the institutional support services available for them at the university.

3.3 Population

The study population consisted of 21 students with deafness at TTU. They comprised of 12 males and 9 females, from Level 100 to Level 300, who were enrolled in various HND programmes from the Departments of Computer Science, Furniture Design and Productions, Hospitality, Graphics and Fashion Design, Interior Design, Mechanical Engineering, and Mathematics and Statistics.

3.4 Sample size and Sampling technique

The researcher adopted census method because the researcher gathered information from all the 21 participants with deafness from the study population at TTU. Copper and Schindler (2011) stated that the appropriate condition necessary for a census study is when the population is small. The authors explained that when the population is small, any sample drawn may not be representative of the population which was drawn. Census provides the researcher with a high degree of accuracy since all participants are covered and no elements of chance would be left. Census also gives the researcher the opportunity to conduct a comprehensive study about a situation.

3.5 Instrumentation

A semi-structured interview guide was used to elicit data from the participants for the study. According to Eladio (2006), the most appropriate used instruments for qualitative research are observation, survey and interview. The semi-structured interview was adopted because it is based on flexible topic guide that provides a loose structure of open-ended questions to explore experiences and attitudes. Eladio explained further that semi-structured interview has advantage of great flexibility, enabling the researcher to enter new areas and produce richer data. In addition, semi structured interview helps the researcher to have a good rapport with the informants.

It also elicits people's own views and descriptions and has the benefit of uncovering issues or concerns that have not been anticipated by the researcher. Semi-structured interview is commonly used to gain information on the perspectives, understandings and meanings constructed by people regarding the events and experiences on their lives. The themes of research questions raised were guided by the interview questions. Interview questions raised during the interview were guided by the participants' academic experiences, social experiences and institutional support services. The researcher also adopted focus group interview to encourage participants to interact with each other and not merely responding to the researcher. Focus groups interview offer an opportunity for immediate feedback or clarification on one's viewpoint, with the contributions of other group members.

According to Gorman and Clayton (2005), rich qualitative data can be collected with reasonable speed since focus group sessions require only moderate time commitment from both participants and the researcher. Depending on the number of questions and the complexity of the issues, one to two hours are sufficient for most discussions. Participants can see at a glance what is being done, and almost invariably, accept that the method is appropriate.

3.6 Trustworthiness

According to Connelly (2016), trustworthiness of a study refers to the degree of confidence in data, interpretation and methods used to ensure the quality of a study. Connelly found out that trustworthiness of qualitative research and transparency of the conduct of the study are crucial to the usefulness and integrity of the findings. In order to determine the trustworthiness of the findings, the researcher took the major findings back to the participants to determine whether the participants feel that they are accurate. This the researcher did by conducting a follow up interview with

participants in the study and providing an opportunity for them to comment on the findings. Again, the researcher sought the assistance of a lecturer from the Department of Special Education at UEW, who is not familiar with the research to provide objective assessment of the study, including accuracy of transcription, relationship between the research questions and the data, the level of data analysis from raw data through interpretation which enhances the overall trustworthiness of the study.

Additionally, to make sure that the findings of the study are trustworthy, the researcher checked the transcripts to make sure that they do not contain obvious mistakes made during transcription. The researcher also took the interview guide for peer review after which a pre-test interview was conducted on seven students with deafness in order to ensure that weaknesses of the interview guide are identified so as to make the necessary corrections in order that the internal consistency of the instrument is ensured. The interview guide was later given to the researcher's supervisor, who is a professional with special credentials in hearing impairment, to critique, suggest and approve of it.

3.7 Pre-test

The researcher conducted a pre-test on seven students with deafness at Koforidua Technical University in the Eastern Region of Ghana. The test was conducted on students with deafness in another technical university to identify the internal consistency of the interview guide used by the researcher. All seven students with deafness at Koforidua Technical University were interviewed. Under research questions 3, students were interviewed on their satisfaction as far as sign language interpreting service in the university was concerned. Out of the seven students with deafness who were interviewed, only one of the students was a bit satisfied with the

support service they received. The remaining six students saw the service as inadequate and ineffective due to inadequate sign language interpreters. According to the students, the university had employed the service of only one sign language interpreter who was not always available, especially during lectures.

The interview was one-on-one lasting for 30 minutes each which took place for two days. This was to ascertain the efficacy of the interview questions.

After the pre-test, the researcher observed that some of the research questions were too difficult for the participants. The researcher, therefore, simplified the questions to the understanding of the participants. It was also observed that the questions on the interview guide were too many. This observation helped the researcher to reduce the number of questions used for the interview.

3.8 Procedure for Data Collection

An introductory letter was sought by the researcher from the Department of Special Education of the UEW as evidence to help seek permission from the various Heads of Department of participants involved in the study through the Head of the Disability Unit and the Dean of Liberal Studies and languages at TTU. According to Creswell (2005), cited in Mantey, (2011), it is important to respect the site where a research takes place. This respect is shown by obtaining permission before entering the site.

The researcher also pre-visited the Disability Unit to meet the participants to explain the purpose of the study to them. The researcher used the opportunity to give the participants the assurance that information gathered from them would be confidential. Consent was sought from the participants for audiological assessment to be conducted on them to identify their degree and types of deafness. Participants' case history were taken to gather data on the onset and causes of deafness as well as to find

out whether participants have bilateral or unilateral deafness. The researcher took this opportunity to schedule meeting days with the participants. It was agreed that the meeting days would be every Sunday at 1:30pm at the University's premises. Since focus group semi-structured interview was used as a tool to interview the participants, four groups were formed with 6 respondents in group one and five respondents each in the remaining three groups.

In all, 21 students were interviewed. The items in the interview were divided into three sections (namely, Section A, Section B, and Section C) and were centred on the research questions raised. Section A comprised of questions raised under Research Question 1, which was about academic experiences of students with deafness, including experience on communication and understanding lectures, experiences on attitudes of lecturers, experiences on participation in lectures, experiences on quizzes and examinations and experiences on access to library services. Section B comprised of questions raised under Research Question 2 about social experiences of students with deafness, including relationship and friendship experiences among students with deafness, experiences on cooperative learning among students with deafness, and experiences on participation in extracurricular activities among students with deafness. Section C comprised of questions raised under Research Question 3, which addressed issues such as institutional support services available for students with deafness, including experiences on interpreting among students with deafness, experiences on note-taking among students with deafness, experiences on real time captioning among students with deafness and experiences on tutoring among students with deafness. The interview conducted on each group lasted between 50 to 60 minutes. The participants were given the opportunity to express their lived experiences in a relaxed and comfortable manner. Verbatim expressions of some of

the participants were written before being translated into exact English. Students with post-lingual deafness were given the opportunity to use speech during the interview. The consent of the participants was sought for them to be videoed during the interview for onward transcription from sign language to written language for analysis of data.

Additionally, an audiological (hearing) assessment was conducted on 18 of the participants in order to identify their degree of deafness. Case history was also taken on the 18 participants on a one -on-one basis to find out the onset and causes of their deafness.

3.9 Ethical Considerations

In order that the safety and respect of the participants were guaranteed, the researcher sought permission from all students with deafness at TTU. The researcher used took this opportunity to explain to the participants that their participation in the interview was not compulsory but rather voluntary. The researcher also made the participants aware that their names were not required during the interview so as to ensure confidentiality. Prior to the commencement of the interview, the researcher made the participants to understand the purpose for which the study was being conducted. The researcher also sought the consent of the participants before they were videoed during the interview since videoing them would help the researcher gather comprehensive data from the participants. The researcher also assured the participants that they would be given the opportunity to access the findings of the study, and therefore, should they have any problem with the findings, they should not hesitate contacting the researcher.

3.10 Data Analysis

Analyzing the data began with watching the videoed interview in sign language. Data analyzed were derived from narration themes of the research questions. According to Creswell (2012), qualitative data can be analyzed using (i) content analysis, (ii) narrative analysis, (iii) discourse analysis, (iv) framework analysis, and (v) grounded theory. Narrative analysis was chosen by the researcher to analyze the data because it involves the reformulation of stories presented by participants taking into account context of each case and different experiences of each respondent. The researcher chose narrative analysis because the interview was conducted on the personal experiences of the participants. Verbatim responses of the participants, in terms of sign language, were also used where necessary, but were translated into exact English. Simple percentages were also used to analyze the data collected from the participants.

In order to analyze qualitative data, one needs to have a clear understanding of sentences, words and graphics (Creswell & Creswell, 2018). The researcher therefore transcribed the data collected through the interview. Transcription according to Creswell and Creswell (2018), means converting all data into textual form. After the transcription, the researcher then organized the collected data according to the research questions. To ensure that data collected are organized in a visually clear way, the researcher input research questions into a table and assigned data according to each of the three (3) research questions. The researcher also identified the major categories of data collected and the sub strands that came out of the research questions. These included *academic experiences* of students with deafness with specific reference to experiences on communication and understanding lectures, experiences on attitudes of lecturers, experiences on participation in lectures,

experiences on examinations and quizzes and experiences on access to library services. The other was on *social experiences* of students with deafness, which included relationship and friendship experiences among students with deafness, cooperative learning among students with deafness, and experiences on participating in extracurricular activities among students with deafness. Finally, *institutional support services* available for students with deafness, including interpreting experiences among students with deafness, note taking experiences among students with deafness, real time captioning experiences among students with deafness and experiences on tutoring among students with deafness, were also identified.

Data gathered were coded as Section A, Section B, and Section C based on responses from each group under the three research questions. Section A consisted of responses from participants under *academic experiences* of students with deafness in tertiary institutions. Section B consisted of responses from participants under the *social experiences* of students with deafness in tertiary institutions, while Section C consisted of responses from participants under *institutional support services* for students with deafness in tertiary institutions. Roman numerals I – X were also used to code interview data gathered from the participants for groupings to identify the various themes that came up from the research questions and patterns based on responses of the participants.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND DISCUSSIONS OF FINDINGS

4.0 Introduction

This chapter presents the analysis and discussions of findings of the study. The researcher gathered data on the distributions of student respondents by class levels, gender, programmes offered, and degree of hearing losses, onset and causes of deafness. The data gathered was analysed using simple percentages. Pure tone audiological (hearing) assessment was conducted on each respondent. This was done to find out the degree of hearing losses of each of them. The researcher took the Case history of each student respondent and data was gathered on whether or not they have bilateral or unilateral deafness. The case history also gathered data on the onset and causes of the deafness. Semi structured interview guide was the main research instrument in this study and data gathered was supported using narrative analysis. This analysis focused on the themes derived from the three research questions.

Analysis of bio-data of student respondents

The study was carried out at Takoradi Technical University, Main Campus, with a population of 21 students with deafness.

Table 1: Distribution of student respondents by class levels

Class levels		Frequency
Percentage (%)		
Level 100	10	46.6
Level 200	5	23.8
Level 300	6	28.6
Total	21	100

Source: *Author's Computations from field Data, May, 2019*

Table 1 indicates three groups of student respondents who were interviewed. According to the above table, 46% of the respondents were Level 100 students with deafness, 23.8% of the respondents were Level 200 students with deafness while 28.6% of the respondents were students with deafness from Level 300. This shows that the highest number of students with deafness who were interviewed at TTU was from Level 100, followed by Level 300 and then Level 200.

Table 2: Sex distribution of student respondents

Gender	Frequency	Percentage (%)
Male	12	57.1
Female	9	42.9
Total	21	100

Source: *Author's Computations from field Data, May, 2019*

Table 2 shows the gender of the respondents who were interviewed. From the table, out of the 21 students with deafness who were interviewed, 12 of them representing 57.1% were males while 9 representing 42.9% were females. This indicates that there were more male students with deafness than female students with deafness at TTU.

Table 3: Distribution of student respondents by Programmes offered

Programme (%)	Frequency	Percentage
HND Interior Design and Technology	2	9.5
HND Fashion Design and Technology	4	19
HND Graphic Design	3	14.3
HND Information and Communication Technology (ICT)	3	14.3
HND Hotel, Catering and Institutional Management	4	19
HND Maths and Statistics	3	14.3
HND Building Construction	2	9.5
Total	21	100

Source: *Author's Computations from field Data, May, 2019*

Table 3 shows the various programmes offered by students with deafness who were interviewed at Takoradi Technical University. From the table, it can be deduced that, 2 students (9.5%) studying HND Interior Design and Technology and HND Building Construction, 4 students (19%), studying Fashion Design and Technology and HND Hotel, Catering and Institutional Management, 3 students (14%), offering HND Graphic Design, HND Maths and Statistics and HND Information and Communication were interviewed.

The information above indicates that Fashion Design and Technology and Hotel, Catering and Institutional Management had the highest enrolment regarding students with deafness at TTU.

Table 4: Distribution of student respondents by degree of hearing losses.

Range of hearing threshold	Degree of hearing loss	Frequency	Percentage (%)
75dB-90dB	Severe hearing loss (deafness)	14	77.8
93.5dB-107dB	Profound hearing (deafness)	4	22.2
Total		18	100

Source: *Author's Computations from field Data, November, 2019.*

Table 4 indicates the degree of hearing losses of student respondents of Takoradi Technical University after the pure tone audiological (hearing) assessment was

conducted on them. 18 out of the 21 students with deafness took part in the assessment. The pure tone hearing assessment results indicated that 14 out of the 18 student respondents (77.8%) had hearing threshold ranging between 75dB-90dB, which means they had severe hearing loss. The pure tone hearing assessment results also indicated that (4) (22.2%) out of the 18 student respondents with deafness had hearing threshold ranging between 93.5dB- and 107dB, which means that they had profound hearing loss. These are in line with Martin (1981); cited in Gadagbui, (2018) who found that persons with severe hearing loss hear sound between 71 and 90 decibels (dB) while persons with profound hearing loss can only hear sound above 90 decibels (dB). The above findings indicate that all the 18 respondents with deafness at TTU who took part in the pure tone audiological (hearing) assessment are deaf because they cannot benefit from the use of hearing aids.

Table 5: Distribution of student respondents by onset of deafness

Onset of deafness	Frequency	Percentage (%)
Congenital deafness	11	61.1
Acquired deafness	7	38.9
Pre lingual deafness	2	11.1
Post lingual deafness	7	38.8
Bilateral deafness	18	100
Unilateral deafness	–	0

Source: *Author's Computations from field Data, November, 2019.*

Table 5 indicates the onset of deafness of the 18 students out of the 21 students with deafness at TTU whose case history were taken by the researcher. From the table, 11 students out of the 18 students (61.1%) had congenital deafness, which means, they were born deaf while 7 students out of the 18 students (38.9%) had acquired deafness that is, they became deaf after birth. Meanwhile, 2 of the 18 students (11.1%) had pre-

lingual deafness, which means that they became deaf when they had not developed speech. However, seven of the students (38.8%) had post-lingual deafness, which means, they became deaf after they had developed speech. It can also be seen from the table that all the 18 student respondents (100%) had bilateral deafness. This means that they were deaf in both ears. However, none of the students had unilateral deafness, or they did not hear with any of their ears.

From the information above, it could be concluded that the number of respondents in the study with congenital deafness, post-lingual deafness and bilateral deafness were more than those with acquired deafness, pre-lingual deafness and unilateral deafness, respectively.

Table 6: Distribution of student respondents by causes of deafness

Causes of deafness	Frequency	Percentage
Pre natal causes	10	55.6
Post natal causes	8	44.4
Total	18	100

Source: *Author's Computations from field Data, November, 2019.*

Table 6 shows the causes of deafness in terms of pre-natal causes (during pregnancy) and post-natal causes (after delivery) of 18 out of the 21 respondents with deafness at TTU. 10 out of the 18 students (55.6 %) deafness were caused by certain complications and diseases during pregnancy (pre natal causes) while 8 of them (44.4 %) had deafness caused by environmental factors after delivery (post-natal). This indicates that there were more students with pre-natal deafness than those with post-natal deafness at TTU.

4.1 Findings

To answer the three research questions, the data collected during focus group interviews were used. Four (4) groups were formed. Group 1 consisted of six (students while the remaining three groups consisted of five students each.

The research questions were:

- i. What are the academic experiences of students with deafness at TTU?
- ii. What are the social experiences of students with deafness at TTU?
- iii. What institutional support services are available for students with deafness at TTU?

4.1.1 Research Question 1: What are the academic experiences of students with deafness at TTU?

To answer this research question, five themes came out from the collected data. These were:

- (i) Experiences on communication and understanding in tertiary institutions
- (ii) Experiences on attitudes of lecturers in tertiary institutions
- (iii) Experiences on participation in lectures in tertiary institutions
- (iv) Experiences on quizzes and examinations in tertiary institutions
- (v) Experiences on access to library services lectures in tertiary institutions.

i. Experiences on communication and understanding lectures in tertiary institutions

Understanding lectures plays a major role in improving on the academic performances of all students, including those with deafness. When students with deafness are provided with the required supports in the lecture hall, it will help them to understand what they learn. Communication is the exchange of information between two people. Therefore, if there is any barrier hindering effective communication, it normally leads to frustrations, disappointments and boredom. When communication in the lecture hall is ineffective, students with deafness are disadvantaged, thereby preventing them from understanding lectures, which in the end, affects their academic performance. This strand inquired from the students their experiences about communication during and understanding of lectures.

The students indicated that they had serious challenges concerning their understanding of lectures due to communication barrier. Most of the students stated that they had few interpreters who, most of the time, were unavailable, and/or were unable to accurately interpret and communicate their lecturers to their understanding. In such situations, they were denied the opportunity to acquire accurate information in the lecture hall. Two students noted that hearing colleagues who were able to sign felt reluctant to interpret information at the lecture hall to them. However, a student commented that he had no challenges understanding lectures. This was because he had two hearing colleagues who assisted him to understand lectures through sign language.

Some students' responses were in sign language and were translated into exact English:

Three students signed these:

Sign language:

Me not understand lectures if interpreter not come. If me ask hearing friends to help, they not because they know sign language not. Me always sad. (A verbatim expression by a student from group 2).

Translation:

I have difficulties understanding lectures when nobody interprets to me. Sometimes when I ask hearing colleagues to help me, they feel reluctant because they cannot communicate in sign language. This mostly makes me sad.

Sign language:

Me suffer understand lectures more if interpreter not come. Some lecturers good. They try write on board for me understand because they not know sign language. (A verbatim expression by a student from group 3).

Translation:

Sometimes I understand lectures but at times I struggle to understand lectures especially when there is no interpreter. Some of the lecturers are good to me and therefore try to do illustrations on the whiteboard for me to understand because they cannot communicate in sign language.

Sign language:

I not understand lectures because me not have interpreter explain class work to me. (A verbatim expression by a student from group 1).

Translation:

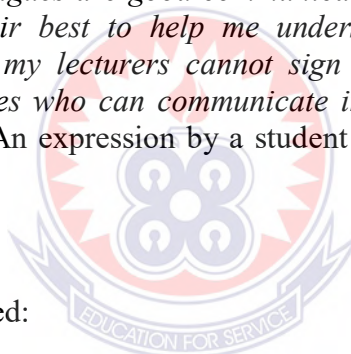
As for me I don't understand lectures at all because I don't have any interpreter to explain information during lectures to me.

Three students stated:

Because the sign language interpreters are not always at lectures, I struggle to understand lectures. Sometimes, the lecturers try to help me understand by writing on the whiteboard but because they cannot communicate in sign language, I find it difficult to understand what they write on the board. (An expression by a student with post lingual hearing loss from group 1).

I only understand lectures when someone interprets to me. Sometimes too if I don't understand something and I ask the lecturers to explain further, some of the lecturers refuse to explain. However, some of the lecturers in my department even though cannot communicate in sign language, they try their best to help me understand what they have taught after lectures. Some of my hearing colleagues can communicate a bit in sign language and because of that they sometimes explain lectures information to me by the help of some of the lecturers. (An expression by a student with post lingual hearing loss from group 4)

Even though my interpreter does not always come to lectures, two of my hearing colleagues are good communicators in sign language and therefore try their best to help me understand information at the lecture hall. All my lecturers cannot sign but they ensure that my hearing colleagues who can communicate in sign language interpret lectures to me. (An expression by a student with post lingual hearing from group 2)



Three students commented:

Most lecturers wished they can communicate with us but because they cannot communicate in sign language, they feel reluctant to do so. Inability to communicate in sign language on the part of lectures hinders me from understanding lectures. (An expression by a student with post lingual deafness from group 4).

My major challenge as a student with deafness in this university is communication with lecturers in both the lecture hall and outside the lecture hall. Initially, it was very difficult to communicate. I find it difficult understanding what lecturers talk about since the only support service we have is Sign Language interpreting service. I sometimes fell that there is no need for me to attend lectures since I do not understand what lecturers teach. I only depend on hand outs. (An expression by a student with post-lingual deafness from group 3).

Although my lecturers are friendly, my major challenge is communicating with them because they cannot communicate in sign language. This affects my academic performance because the interpreters don't normally come to lectures. I always feel unhappy especially when there is no interpreter at lectures because I don't

understand what the lecturers teach. At the secondary school, I was not having any challenge because all the teachers could communicate in sign language. (An expression by a student with post lingual deafness from group 1)

ii. Experiences on attitudes of lecturers in tertiary institutions

Teachers' knowledge about the needs of students with deafness influences their attitudes and expectations positively leading to better outcomes for students. Hence, positive attitudes on the part of lecturers towards students with deafness are related to better outcomes for students with deafness. This strand sought from students their experiences on attitudes of lecturers.

While some students applauded their lecturers for being friendly, caring and supportive, majority of the students indicated that they were being rejected and marginalized by most lecturers both within and outside the lecture hall. These attitudes exhibited by lecturers, according to the students made them lonely and unhappy.

Some students' responses were in sign language and were translated as follows:

Two students signed:

Sign language:

Lecturers more not good here. If me not understand something and ask lecturers after teach, more not teach me. Because me deaf, more lecturers hate me. Me happy not this school. (A verbatim expression by a student in group 4).

Translation:

Most lecturers here do not behave well towards me at all. Whenever I didn't understand something at lectures and I tried to seek clarification immediately after lectures, most of the lecturers don't mind me. Most lecturers reject me because I am deaf and this attitude makes me unhappy being here.

Sign language:

University here lecturers more not behave fine to deaf students. Sometimes, lecturers meet me close school not greet me. Some lecturers funny me in class and after class. We teachers in senior High School are good friends. (A verbatim express by a student from group 2).

Translation:

Most lecturers in this university do not relate well with students with deafness at all. Sometimes when they meet me, they don't even mind me. Some of them even make fun of me within and outside the lecture hall. Our teachers at the Senior High Schools are friendly than them.

Two students commented that:

Most lecturers here are not concerned about my welfare. Most of them fail to give me hand outs of lecture notes after lectures. Because they cannot sign, they always turn deaf hears on me. Most lecturers are not caring at all. (An expression by a student with post lingual deafness from group1).

I don't normally attend lectures because of the attitudes of most of the lecturers. Most of them don't understand me and do not care if there is an interpreter in the lecture hall or not. They don't even ask me questions for me to even respond in writing on the write board. They enter the lecture hall, teach and leave without even attending to students with deafness in the lecture hall. This am confused. (An expression by a student from group 3)

Three students had these to say:

Sign language:

More lecturers sorry me if interpreter not come class. More lecturers funny and friend me. Lecturers good so me always go class.

Translation:

Majority of the lecturers feel sorry for us when there is no interpreter during lectures. Almost all the lectures who teach me are friendly and jovial. Their attitudes encourage me to attend lectures always. (An expression by a student from group 2).

My lecturers are friendly and welcoming. Whenever there is a practical lesson and there is no interpreter, my lecturers try their best to guide me to do the work though they cannot sign. They show love

and care towards me. (An expression by a student with post lingual deafness from group 3).

Lecturers this University are not rude to me at all. They treat me just as they treat my hearing peers. They don't discriminate at all. Most of them try to find out from our interpreters some of the challenges we face as students with deafness. (An expression by a student with deafness from group 4).

iii. Experiences on participation in lectures in tertiary institutions

Class participation is essential to ensuring that all students, including those with deafness, understand what they are taught. Active learning plays an important role in ensuring that all students with disabilities understand what they are taught as compared to passive learning. This strand investigated students' experiences regarding participation in lectures. While some students applauded their lecturers for actively involving them in lectures, others were of the view that their lecturers did not consider them when lecturing, and indicated that their lecturers did not involve them when lecturing.

Some students' responses were in sign language and were translated into exact English: Four students had these to say/sign:

I am given the opportunity by most lecturers to take part in lecture activities especially during practical work. Sometimes, lecturers give me the opportunity to ask questions through me interpreter. But when there is no interpreter at the lecture hall, I find it difficult to express myself to the understanding of the lecturers. Sometimes too if the interpreter is not there, some lecturers ask me to write my questions on the board. (An expression by a student with post lingual deafness from group 3)

In my department, the lecturers are concerned about students with deafness so most of them involve me in class activities. Some of the lecturers ask some of my hearing colleagues to sit by me to guide during lecture activities. Some of the lecturers also ask me questions through my interpreter to find out whether or not I understand what they are teaching. If there is no interpreter, some lecturers ask me questions in a written form and ask me to answer in a written form. (An expression by a student with post lingual deafness from group 1)

Sign language:

Lecturers more ask me answer question class. Sometimes, lecturers want no me understanding teaching so lecturers ask me questions. (A verbatim expression by a student from group 4)

Translation:

Most of the lecturers invite me to ask questions during lectures. Some of them also prefer asking me questions in the process of lecturing to find out if I understand them or not.

Sign language:

If understanding hard for me in class, my lecturers allow me ask questions. (A verbatim expression by a student from group 2)

Translation:

Whenever, I have challenge understanding anything during lectures, and I want to ask a question, my lecturers allow me to do that. .

From the foregoing, it is obvious that students are of the view that they are being given the opportunity to fully participate in lectures. In spite of the fact that some students applauded their lecturers for allowing them to participate in lectures, there were yet other students who thought, they were being relegated to the background and marginalized during lectures. They expressed their views as follows:

Two students signed:

Sign language:

University here lecturers not make deaf students fine. When lecturers teach not add deaf students. Lecturers not ask deaf students if not understand things teach class. (A verbatim expression by a student from group 4)

Translation:

In fact, we the students with deafness are not treated well at all. When our lecturers are lecturing, they don't involve us at all. They don't find out from us whether or not we understand lectures or not.

Sign language:

Me happy not how lecturers behave to deaf students. Lecturers not care deaf students not understanding teaching. Only hearing students lecturers like. Me know lecturers reject me. Me not like university here.

Translation:

I am not happy with the way our lecturers treat us at all. They don't care whether I understand anything or not. They are concern about those who can hear and speak. This makes me feel rejected. I wish I am not in this university. (An expression by a student from group 3)

Three students said:

I only go to the lecture hall to listen to what the interpreter is signing but I am not giving the opportunity to ask questions. If there is no interpreter, I am not allowed to partake in the class discussions. Sometimes, I don't feel like going to lectures because of this. Sometimes too, when I am bored during lectures, I will just leave the lecture hall for my hall of residence to relax because I am not involved in lectures. (An expression by a student with post lingual deafness from group 1)

Lecturers don't involve me in their lectures because I am deaf. No lecturer ask me a question at the lecture hall even if the interpreter is around. The lecturers don't also give me the opportunity to ask questions in the lecture hall. Most of the lecturers do not involve me in class discussions. They only involve students who are hearing. This makes me feel that I am rejected. (An expression by a student with post lingual deafness from group 2)

In my department, only few lecturers encourage me to participate in their lessons. Most lecturers are not concern whether or not I understand anything. They don't even pause to find out whether I understand what they are teaching or not. (A verbatim expression by a student with post lingual deafness from group 4)

iv. Experiences during quizzes and examinations in tertiary institutions

Quizzes and examinations are necessary in determining the success of all students, including those with deafness, in schools and after school. Quizzes and examinations also give lecturers and university authorities information about the academic performance of each student. Since both the hearing students and the students with deafness are taught the same content, it is necessary that they are assessed the same way. However, students with deafness should not be disadvantaged, but should be treated fairly. Besides, students with deafness must be accorded some considerations because of their disability. The strand found out from the students their experiences during quizzes and examinations. Majority of the students indicated that they are not

satisfied with how quizzes and examinations are conducted in the university. The students indicated that they are not given extra time during quizzes and examinations. Some of the students stated that during their BECE and WASSCE examinations, they were given extra time but that is not the case at the university. Others suggested, examination questions must be explained to them in sign language. Some also indicated that their assessment must be different from their hearing peers. However, almost all the students indicated that they are normally given prior information on venue and time for examinations.

Some students' responses were in sign language and were translated into exact English:

Two students signed:

Sign language:

Sometimes me understand exams questions not and nobody explain. Me know cheat me because if me ask question people watch us not know sign language so not look me. (A verbatim expression by a student from group 1)

Translation:

I sometimes do not understand questions during examinations and quizzes and nobody explains to me. I feel cheated because sometimes when I ask the invigilators question, they don't mind me because they do not understand sign language.

Sign language:

Me want deaf students write different exams because we English poor. We deaf students not answer essay question well. So we fail more.. Yes me like to give deaf students add time to write exams. Because BECE and SSSCE exams, we get more time better than hearing students. Time small here for exams and make deaf students not finish exams and fail exams. (A verbatim expression by a student from group 2).

Translation:

I suggest that we are assessed differently from our hearing peers because of our limited grammar. Most of the questions are essay type questions and because we are deaf and our English is poor, we cannot express ourselves well and this makes deaf students fail too much. Yes, I think we must be given extra time during examinations and quizzes because in our BECE and WASSCE examinations, we the deaf are given extra time to help us finish on time. Because it is not done here of this most of us don't finish on time thereby causing most students with deafness to fail in their examinations and quizzes.

Four students remarked:

I wish we are assessed differently from our hearing peers in all the courses because when the lecturers mark our papers, they don't consider us as deaf students. This causes a lot of us to be referred. We are only assessed differently from our hearing peers in the general courses. We answer the same questions with our hearing peers in all our elective courses and no lecturer considers us as deaf. (An expression by a student with post lingual deafness from group 2).

We are giving prior notice before examinations and quizzes and we are assessed differently from our hearing peers but only in the general courses. As for our elective courses, we are assessed the same as our hearing peers. We are not given extra time during quizzes and examinations. (An expression by a student with post lingual deafness from group 3).

Yes, before we do examinations and quizzes, we are informed first. Sometimes too sign language interpreters come to the examination centres to assist us but they don't come there always. Also, we write the same examinations and quizzes with our hearing peers in our elective courses. However, we are assessed differently from our hearing peers in the general courses. I wish we are assessed differently from our hearing peers differently in all the courses. I also suggest that the lecturers should pay much attention to our understanding and responses to questions instead of our grammar. (An expression by a student with post lingual deafness from group 4)

No, we are not given any extra time during examinations and quizzes. We also do the same examinations and quizzes with our hearing peers in our elective courses but we are assessed differently in the general courses. We want to be assessed differently in all our courses but not only the general courses. We have sent our petition to the University authority through the head of disability unit but to no avail. This is very sad. (An expression by a student with post lingual deafness from group 1).

One student commented this way:

Although we are not given extra time during examinations and quizzes but we are assessed differently in all the general courses. This in our view is commendable. However, we are assessed differently in our elective courses during examinations and quizzes. We are sure very soon we will be assessed differently from our hearing peers in all the courses. As for quizzes, we write the same papers. Interpreters come to assist us during quizzes and examinations but they don't come there always. Sometimes, in the absence of interpreters during quizzes and assessments, some invigilators try their best to explain things to us in writings and gestures but we struggle to understand. This normally wastes our time. (An expression by a student with lingual deafness from group 3).

v. Experiences on access to library services in tertiary institutions

Library plays an important role in ensuring the academic success of all students, including students with deafness. Academic libraries have been seen as the heart of every university serving the academic community of its parent institution. Libraries should therefore be available to all potential users, including those with deafness.

Ensuring access to information at the library enables students with deafness to achieve academic success. . The students who participated in the present study collectively stated that they had challenges accessing reading materials at the university library. While some students registered their displeasure on how library staff related with them due to communication barriers, thereby discouraging them from accessing reading materials at the library, others explained that, though were communication barriers, the library staff related cordially with them.

Some students' responses were in sign language and were translated in exact English:

Three students remarked this way:

We the deaf students go the library anytime we like without difficulties but the only challenge we have is the inability of the library staff to communicate with us. During the orientation period, we were taught how to search for books at the library so we don't problem assessing reading materials at the library. Sometimes if we want to make enquiries from the staff at the library, we are forced to write thereby wasting our time. Sometimes too we don't get good responses from

them due to lack of understanding of our English on their part. I suggest, library staffs are taught sign language so that we can communicate with them easily. (A verbatim expression by a student with post lingual deafness from group 1).

I don't have any problem with the library services here but I become sad sometimes because none of the library staff can sign and there is also no sign language interpreter at the library. I library staffs are friendly but the challenge is their inability to communicate in sign language. The university should organize sign language class for all staff at the library. If not, the university should employ the services of a sign language interpreter at the library. (An expression by a student with post lingual deafness from group 4)

I visit the library three times a week without difficulty. Whenever I find it difficult to locate any book, I approach the library staffs to assist me and they don't hesitate to assist me. However, because they don't understand sign language, I struggle to explain to them what I need. Mostly, they let me write the title of the book on a piece of paper and they search for it for me. The University authority should employ more sign language interpreters to assist students with deafness at the library. (An expression by a student with post lingual deafness from group 3)

Two students commented this way in sign language:

Sign language:

Me go library more but me not ask library work people for books because library people not understand sign language. But library work people funny and good friends. Me want university teach all library work people sign language. (A verbatim expression by a student from group 2)

Translation:

I visit the library almost every day without difficulty but whenever I find it difficult to locate a book I most at times don't inform the staff at the library because of communication barriers. However, library staffs are sociable and friendly. The university authority should make the necessary arrangements to teach all staff at the library sign language.

Sign language:

Me go library not hard. Me search find library books easily. If me not see place book, me ask library workers and they help me see books. My problem library staff not know sign language. University must make them learn sign language.

Translation:

Accessing the university library is not a difficult thing to me at all. I find it easy to locate reading materials.. Whenever I encounter any challenge at the library, I approach the staffs at the library and they don't hesitate to assist me. But the only challenge I have is their inability to communicate with me. The staffs must be trained in sign language. (An expression by a student from group 1).

Three students added:

As for me, it has been a long time I visited the library. This is because the library staffs do not care about students with deafness due to communication barriers. Whenever, I make enquiries from them, they do not even mind me. So whenever I need any information, I normally visit the internet instead of going to the library. The university should employ the service of a sign language interpreter to assist students with deafness at the library when the need arises. (An expression by a student with post lingual deafness from group 4)

The university library is too small. Because of this, it prevents a lot of us from assessing the library especially during revision and examinations periods. But when we don't have examination, a lot of students don't go to the library. This makes accessing facilities at the library easy. The library staffs are friendly but they cannot sign and this prevents me from approaching them when I need help. The staff at the library must learn sign language so that they can communicate with the deaf easily. (An expression by a student with post lingual deafness from group 2).

I don't see I need for me to go to the library when I have my mobile where I can search for information. Also, the staffs at the library don't respect students with deafness because they don't understand our language. Whenever I need any help from them, they don't mind. I don't know if it is because they don't understand sign language or what. (An expression by a student with post lingual deafness from group 4).

4.1.2. Research question 2: What are the social experiences among students with deafness at TTU?

The themes derived from Research Question 2 were:

- i. Relationships and friendships experiences among students with deafness in tertiary institutions.
- ii. Cooperative/group learning among students with deafness in tertiary institutions

- iii. Experiences on participating in extracurricular activities among students with deafness in tertiary institutions.

i. Relationships and friendships experiences among students with deafness in tertiary institutions

Children and students who are deaf need relationships to develop social skills. These skills are necessary for social relations later in life. When students with deafness are accepted by their hearing peers, they become more sociable and often display behaviours such as associative play, friendships approach and social conversation. On the other hand, students with deafness, who are rejected by their hearing peers, often display aggressive and antisocial behaviours such as victimizing others, and are seen by peers to be arrogant.

While some of the students saw their hearing peers to be friendly, others indicated that their hearing peers did not have cordial relationships with them; and therefore, considered them as unfriendly. The students collectively indicated that the major challenge they had with their hearing peers was communication barriers. This, in their opinion, prevented their hearing peers from relating well with them. Some of the students explained that their hearing peers gossiped about them and did not care about their feelings. However, a few of the students indicated that their hearing peers were caring and supportive. But since their hearing friends could not sign, the problem communication among them rendered their interactions uninteresting.

Some students' responses were in sign language and were translated in Exact English:

Three students signed:

Sign language:

Me have hearing friends more help me. My hearing good but not know sign language. Me talk with my hearing friends boring. But my hearing friends talk me home sign language. Me too teach my friends sign language small but not good. (A verbatim expression by a student from group 1)

Translation:

I have a lot of hearing friends who have been helping me. My hearing friends relate cordially with me but the only difficulty I have is communicating with them effectively. Most of my hearing friends do not understand sign language and this make communicating with them boring. However, they use gestures and body language to communicate with me. I have taught some of them basic sign language but they are not all that good in signing.

Sign language:

Me have small good hearing friends. No, my hearing friends never reject me. But me problem have my hearing friends not like learn sign language. Me bored because my hearing friends not know sign language. Me like all hearing friends know sign language because all good friends. (A verbatim expression by a student from group 1)

Translation:

I have few hearing friends and they are good. No, I have never felt rejected by my hearing friends but the problem I have with my hearing friends is that they are not ready to learn sign language. Because they cannot sign, communicating with them sometimes is boring. I wish all my hearing friends can sign well because they are friendly.

Sign language:

Me past have hearing friends more but not have now. Hearing students not respect deaf students and gossip and funny deaf students. When we close class, deaf students walk different place and hearing students walk different. Hearing students not come to place we walk and make we sad. (A verbatim expression by a student from group 2).

Translation:

I used to have hearing friends but currently I don't have any because they don't respect students with deafness. Hearing students in this university like gossiping about students who are deaf too much. They also make fun of us. Mostly, when we close from lectures, we the deaf

will just be lonely and sad because none of the hearing students comes to us to socialize or talk or greet us.

Two students pointed out that:

I have never been rejected by any of my hearing friends before. However, because most of them cannot sign, it makes me bored when I am communicating with them. Although my hearing friends cannot sign well, they are jovial, caring and friendly. They make laugh anytime I am with them. (An expression by a student with post lingual deafness from group 2)

Yes, my hearing friends relate well with me and they are always ready to help me. No, I have not been neglected by the few hearing friends I have. However, my greatest challenge is that I hearing friends have difficulty signing and this sometimes makes being with them unexciting. But they treat me well. They are not harsh on me because they understand my condition. (An expression by a student with post lingual deafness from group 3)

Four students indicated:

Most hearing students here are not friendly at all. Because of their attitudes towards the deaf, I don't have any friend who is hearing. Yes, I feel rejected by my hearing peers. They see we the deaf as inferior so they don't allow us to come closer to them. Whenever I need help and I approach a hearing peer, he/she does not mind me. I don't feel happy when I am interacting with hearing students because almost all of them cannot communicate in sign language. This makes interacting with them boring. Some lecturers and hearing peer make mockery of us. (An expression by a student with post lingual deafness from group 4)

I always feel lonely and rejected by hearing peers especially during social gatherings and lectures. Although, I am free with some of the hearing students, they are not my friends. I only greet them but I don't interact with them because they themselves do not show any interest. Besides, majority of my hearing peers cannot communicate in sign language thereby making me feel uninterested to interact with them. Communicating with hearing students here is tiresome. (An expression by a student with post lingual deafness from group 3)

I have realized that hearing students see we the deaf as burden so they always prevent us from approaching them. Yes, I feel rejected by hearing peers because whenever I am in need of help and I approach any hearing student, he/she does not show readiness in assisting me. A lot of the have difficulty communicating in sign language and therefore interacting with them is very tedious. Most of the hearing students don't show interest in learning sign language. (An expression by a student with post lingual deafness from group 4)

I have few hearing friends but they don't make me happy because they cannot sign. They are also not ready to learn sign language. This makes me dull when I am with them. Sometimes they will be talking without explaining to me what they are talking about and this makes me feel isolated and rejected. (An expression by a student with post lingual deafness from group 1).

ii. Experiences on cooperative learning among students with deafness in tertiary institutions

Putting all students including students with deafness in smaller groups makes concentration on the task easier for students and also minimizes classroom distraction. When students with deafness are being put into groups with their hearing peers, it enhances their self-esteem. When students with deafness are given the opportunity to be in groups with their hearing peers, they will be accepted as members of the class and this will go a long way to promote their academic and social success.

The students indicated that most often they were given the opportunity to partake in group work with their hearing peers. They also stated that their hearing lecturers and hearing peers ensured that they contributed during group discussions. The students indicated that, their participation in group activities encouraged them to concentrate thereby enhancing their understanding. The students went further to explain that their major challenge is their hearing peers' inability to communicate in sign language.

Some students' responses were in sign language and were translated in Exact English:

Two students signed these:

Sign language:

If we have practical and discussion, lecturers mix deaf students and hearing students groups together. We happy for hearing students because not reject deaf students group in. But big problem me have that more hearing students not know sign language and make deaf students suffer understand discussion if interpreter not come class. (A verbatim expression by a student from group 4)

Translation:

We are put in groups with our hearing peers most often by our lecturers especially during practical lessons and sometimes class discussions. Our hearing peers do not make us isolated during group work and discussion. However, our major problem is that most of our hearing peers cannot sign thereby making communication and understanding during group discussions unexciting especially in the absence of sign language interpreters.

Sign language:

Lecturers make us small groups with hearing students more. Hearing students allow deaf students do the activities more. Me happy and me know hearing students respect deaf students. Deaf students hard understand hearing students. Hearing students same problem. But if deaf students we use home sign language they understand. (A verbatim expression by a student from group 1)

Translation:

As for putting us into smaller groups to do practical work, our lecturers do it more often. Our hearing peers also allow us to take active in the activities. This makes us happy and we also feel that we are respected by the lecturers and our hearing peers. Meanwhile we struggle to understand our hearing peers and they also find it difficult to get what we are putting across but when we use gestures and facial expressions, they understand us. (An expression by a student from group 1)

Four students commented:

We are often put in small groups with our hearing peers. We are also allowed to participate in the group practical work and discussions and this makes us feel to be part of the class. This .Makes me concentrate on discussions but the only challenge we encounter during group work is communication barrier because the interpreter will have to move from one group to the other to interpret. (An expression by a student with post lingual deafness from group 2)

We are mostly shared among small groups containing a lot of hearing student especially during practical lessons and we are accepted by our hearing peers as members of the group. We are allowed to contribute under the supervision of our lecturers and our views are mostly welcomed. I am always happy as a student who is deaf whenever there is a group discussion or group work but my problem is that most of the hearing peers cannot sign. (An expression by a student with post lingual deafness from group 3)

Because my programme is full of practical lessons, we mostly do practical group learning under the supervision of our lecturers. This gives me the opportunity to learn from my hearing peers and makes me feel happy. However, I have a challenge communicating with hearing students in my group because most of them cannot sign at all. But when they use gestures and I also communicate using gestures, they understand me to some extent. (An expression by a student with post lingual deafness from group 4).

We do a lot of practical work and therefore most often we are put in small containing a lot of hearing students. During group discussions, everybody is allowed to contribute irrespective of your disability. This makes us feel as members of the class and help me to understand lectures properly. (An expression by a student with post lingual deafness from group 3)

iii. Experiences on participating in extracurricular activities among students with deafness in tertiary institutions

When students, especially those who are deaf, participate in extracurricular activities such as games, sports, and cultural display it leads to the establishment of peer relations, development of artistic skills, attainment of socially suitable conduct and the enhancement of academic success. In addition, the foregoing can be attained through team work and support from authorities. Students with disabilities, including those with deafness, have a lot of talents and skills and these must be developed. Universities must therefore ensure that students with deafness take active part in extracurricular activities just as their hearing counterparts.

At TTU, the students with deafness indicated that they were not given the opportunity to take active part in extracurricular activities such as sports, games, drama, and school clubs the students pointed out that only one student with deafness played on the University's volleyball team, despite that were others too who could be on the team. Whiles some of the students indicated that they were always informed of time and venue of almost every extracurricular activity and other social gatherings, a

few of the students complained that the university authority treated them unfairly because they were mostly not aware of the schedules of extracurricular activities.

Some students' responses were in sign language and were translated in Exact English:

Two students signed that:

Sign language:

More deaf students' better sports but university not allows us do sports. Now, one deaf only play school volley ball. Deaf students not in university football people. (An expression by a student from group 4)

Translation:

Although, most of us are good athletes, the university authority does not involve us in sporting activities and other extracurricular activities. Currently, only one student with deafness is a member of the University's volleyball team. None of us is a member of the football team.

Sign language:

We deaf students university here not allow do sports, games and more activities because we disable. Yes, one only deaf student play university volley. But deaf students more better doing more games and different activities better more hearing students. Yes, if students meeting time university tell all deaf students.

Translation:

We the students with deafness here are not given the opportunity to exhibit their skills in sports, games and other extracurricular activities because of our disability. Yes, but only one student with deafness is part of the volleyball team. Meanwhile most of us are better in sports and other extracurricular activities than our hearing peers. Yes, we are always informed of all social gatherings including extracurricular activities. (An expression by a student from group 1)

Five students remarked:

The university authority does not involve us in games, athletics and other extracurricular activities. Many of us are good sports men and women so they should give us the opportunity to exhibit our skills. Sometimes when there is hall week celebration, we are not informed. This makes me feel rejected. (An expression by a student with post lingual deafness from group 1).

When there is any extracurricular activity, it is communicated to us through our whatsapp group page but most of us are not given the opportunity to partake in the activities. Most of my deaf friends are good in sports and games but because they are deaf, they are not given the chance to take part. This is not fair. When you treat students with

deafness this way, you discourage us from encouraging our friends who are deaf to come to the university as students. (An expression by a student with post lingual deafness from group 2)

Many of us are good in sporting activities and other extracurricular activities but we are not given the opportunity to take part. Yes, whenever there is an extracurricular activity and other social gatherings, we are informed but most of us fail to attend because they university does not involve those of us who can to take part. Only one student with deafness is part of the volleyball team. (An expression by a student with post lingual deafness from group 4)

I don't like the way the university treats students with deafness when it comes to sports, games and other extracurricular activities. This is because most of us can perform well in sports and games but the authority does not involve us. This makes me feel rejected. It is not good at all. Only one student with deafness is a member of the volleyball team. Many students with deafness can play good football and volley but they are even given the opportunity to train. Yes, when there is time for games, sports and even hall week celebration, they are communicated to us on our WhatsApp group page. (An expression by a student with post lingual deafness from group 2)

Only one student with deafness is a member of the volleyball team. Meanwhile most of us are good in sporting activities and other extracurricular activities but we are not given the opportunity to take part because we are deaf. Yes, whenever there is any extracurricular activity and other social gatherings, we are informed. Yes, when I am aware, I normally go there to watch. (An expression by a student with post lingual deafness from group 3).

4.1.3. Research question 3: What institutional support services are available for students with deafness at TTU?

The themes that emerged from research question three (3) were:

- i. Experiences on sign language interpreting support in tertiary institutions.
- ii. Experiences on note taking support in tertiary institutions.
- iii. Experiences on real time captioning support in tertiary institutions.
- iv. Experiences on tutoring support in tertiary institutions.

i. Experiences on Sign language interpreting support in tertiary institutions

Sign language interpreting support in tertiary institutions plays a major role in ensuring that students with deafness benefit from lectures just as their hearing counterparts. This kind of support also helps students with deafness to overcome some of the problems generated by their poor literacy levels. Educational interpreters are professionals who play a pivotal role in facilitating communication between students with deafness, their teachers and hearing peers. Educational interpreters need to have special professional knowledge and skills to enable them to translate spoken language into sign language and sign language into spoken language. Incompetence and lack of commitment on the part of educational interpreter will result in poor performance of students with deafness, thereby causing students with deafness to become school dropouts.

At TTU, the students indicated that the university had not done enough to improve the sign language interpreting service in the university. According to the students, the university had employed the services of three sign language interpreters on part time basis. The students noted that this number was not encouraging. In addition, because the service rendered was on part time basis, the interpreters were not always there to support students, and this affected the students' academic performances. A few students indicated that the interpreters were not committed to the service they had been employed to render. Some other students noted that the interpreters were not experienced in signing, thereby compelling them (the interpreters) to sign wrongfully during lectures and other social gatherings.

Some students' responses were in sign language and were translated in Exact English:

Two students signed:

Sign language:

The university not care for deaf students. Now 21 deaf students study here but interpreters three (3) only. Again, Interpreters work another school before come here. Deaf students suffer more (A verbatim expression by a student from group 4).

Translation:

The university authority does not care about the welfare of students with deafness at all. This big University with 21 students with deafness has only 3 sign language interpreters who are working on part time basis. In fact we the students with deafness here are suffering.

Sign language:

Me past senior high school understand teachers teach me because teachers use sign language. Here me not understand lecturers when interpreter not come class. Interpreter not come class always and make deaf students suffer more. If university accept more interpreters to come class always, problem reduce small. (An expression by a student from group 2).

Translation:

When I was in the senior High School, I used to understand everything the teachers teach because the teachers teach in sign language. But as for here, I don't understand what the lecturers teach especially when there is no interpreter. Also, the interpreters too don't come to lectures also and put us the students with deafness at the disadvantage. I suggest, the University should employ the service of full-time sign language interpreters to help minimize the problem.

Three students remarked:

Most often, interpreters absent themselves during lectures and some social gatherings without our notice. Sometimes when I meet the interpreters and I find out from them why they were not at lectures, they will tell me, they were at school at that time teaching. This normally makes me sad. To me, the interpreters are not committed at all because they come to lectures a maximum of two times in the week. Most at times, I don't understand what the interpreters sign. I think they are not good in signing. When the interpreters are absent during lecture, I become bored and frustrated because the lectures cannot sign. (An expression by a student from group 3)

Sometimes when the interpreters sign, I don't understand. This makes me struggle to understand lectures. I see the interpreters to be inexperience. Apart from that, the interpreters are not available always during lectures and some gatherings thereby hindering me from understanding what is being said at the gathering. This is very frustrating and therefore the University authority should try its best to

employ the service of competent full-time interpreters. (An expression by a student with post lingual deafness from group 1)

Although the sign language interpreters are part time workers, I don't see them to be committed to the work they have been employed to do. This is because they don't care about the welfare of students with deafness. Anytime there is an interpreter at lectures, I understand lectures very well as compared to when there is no interpreter. (An expression by a student with post lingual deafness from group 4)

ii. Experiences on note taking support among students with deafness in Tertiary Institutions

Taking notes on behalf of students with deafness in lecture halls designed for students without deafness at the tertiary level is very important. This is because students with deafness in mainstream tertiary institutions depend on a third party to access information during lectures. It is very difficult when students with deafness are asked to take their own notes especially in mainstream tertiary institutions since they depend on interpreters to understand lectures.

At TTU the students noted that they didn't have note takers to write lecture notes for them during lectures. This made them to feel unsupported and caused them to struggle to get information they were expected to have. Some of the students indicated that their hearing peers sometimes felt reluctant to share their lecture notes with them. Also, most of the students indicated that, although they didn't have note takers, their lecturers, through their interpreters, gave them print-out of lecture notes to be photocopied. However, the students stressed that they would be glad if they had note takers.

Some students' responses were in sign language and were translated in Exact English.

Three students signed:

Sign language:

No, nobody write my notes. Me follow hearing students to copy notes after class. But some hearing students refuse give me notes. (An expression by a student from group 3)

Translation:

No, nobody takes notes for me during lectures. Therefore, after lectures I have to chase after hearing peers for lecture notes to copy. Sometimes, when I ask hearing friends to give me their notes to copy, they feel reluctant to do it. (An expression by a student from group 3).

Sign language:

Deaf students not have note people. After class we take hearing students notes copy. (An expression by a student from group 4)

Translation:

We the deaf students here don't have note takers. So, after lectures, we normally depend on hearing colleagues to write lecture notes. (An expression by a student from group 4)

Sign language:

Nobody write deaf students notes. I copy hearing students note after close class. Sometimes lecturers give all students print notes. Note taker not important. . (A verbatim expression by a student from group 1)

Translation:

Nobody takes notes for me during lectures. Sometimes, I depend on my hearing colleagues for lecture notes. Sometimes too, lecturers give out printout of lecture notes to the course reps for us to make photocopies. I don't think having note taker is necessary. (An expression by a student from group 1).

Four students commented:

No, the university has not employed the service of note takers to take notes students with deafness. However, this is not a problem to me because the lecturers normally give print out of lecture notes through the course rep for us all to make photocopies. (An expression by a student with post lingual deafness from group 3)

No, I don't have anybody to take notes for me. But after lectures, the interpreter request for the lecture notes from the lectures for me. If the university give us note takers, I will be happy but I don't have problem if there is no note taker during lectures because after lectures, I am

given the print out of the lecture notes. (An expression by a student with post lingual deafness from group 4)

We the students with deafness in this university do not have note takers. But because we are given hand outs of lecture notes, I don't think the absence of a note taker during lectures will affect our academic performance. (An expression by a student from group 2)

No, I don't have a note taker. So, after lectures I normally go in for the course rep lecture notes to write. Sometimes too, the lecturers give out hand outs of lecture notes for us to make copies. Yes, if the University authority employ the service of note takers, I will be happy because I normally spend a lot of time on writing lecture notes. I can use that period to do learn or do other important things. (An expression by a student with post lingual deafness from group 1).

iii. Experiences on real time captioning support among students with deafness in tertiary institutions

Real time captioning is a technology where information delivered by the speaker or lecturer is translated into words on a device that can be read by students with deafness at lectures and other social gatherings. Real time captioning is very important for students with deafness in mainstream tertiary institutions because information may be left on the screen for a longer period of time to allow students with deafness fill in information they might have missed from either the interpreter or the lecturer. The technology also provides students with deafness the exact technical information and specific vocabulary. The technology also provides students with deafness hard copies of the complete lecture transcript immediately after lectures since the captions are stored on the computer memory. This technology will help students with deafness to concentrate on lectures, even in the absence of an interpreter, thereby improve the academic performance of the students.

At TTU the students indicated that they had not heard of a technology called real time captioning. They explained that they had not been given the opportunity to view information from lecturers on a screen. The students indicated further that they

had never been given the opportunity to have captions of information during lectures on a screen to help them check and fill in what they might have missed from either the interpreter or the lecturer. However, the students collectively remarked that they will be very happy if the university administration will secure a real time captioning device since they did not have enough interpreters. According to some of the students, they will not worry about the absence of sign language interpreters during lectures, and even other social gatherings, when they are provided with real time captionist.

Some students' responses were in sign language and were translated in Exact English:

Two students signed:

Sign language:

No, me not see the device you talking here. We not see what lecture teach on machine. Me think university get some device for deaf students. Because device can help deaf students if interpreter not come class. (A verbatim expression by a student from group 2)

Translation:

No, there is nothing like real time captioning device here to translate exactly what lecturers teach to us. We are also not allowed to have access to information which may not be interpreted by the sign language interpreter. I suggest, the University authority should try their best to get some few captionist for us. This is because it will help those of us who are deaf to understand lectures better even in the absence of interpreters.

Sign language:

University not have device show all lecturers teach for deaf students understand. No, only photocopies of notes we get. If university buy device to help deaf students me happy more because interpreters not come to class more.

Translation:

We don't have any electronic device which translates the exact information from lecturers to the understanding of students with deafness. No, we only get access to hand outs of lecture notes but not exactly what lecturers teach. If the University authority should secure such device, we the deaf students will be happy because the interpreters are not enough and therefore come to lectures once a while. (An expression by a student from group 4)

Three students indicated that:

I have not even heard of real time captioning before. Besides, no device is available to translate what lecturers teach to us. We are not given the opportunity to check and fill information which the interpreter did not interpret to us. No, we are only given full lecture notes but not hard copies of the transcript of information from lecturers. I think when real time captionists are used during lectures, it will be of great benefit to those of us who are deaf. This is because the interpreters are part time and are not always available. (An expression by a student with post lingual deafness from group 1)

No, we have not been provided with any electronic device which display what lecturers teach on a screen for the benefit of students with deafness. Yes, most of the lecturers here provide us with hand outs of what they teach but it is not a transcript of exactly what they say. This University should think of providing every lecture hall with a real time captioning device (captionist). This will help all students especially students who are deaf since the interpreters are not always available at lectures. (An expression by a student post lingual deafness from group 2)

There is no real time captioning device in this University. We also don't get access to the exact information/message delivered by lecturers. We only depend on sign language interpreters who are few and are working part time basis. These interpreters absent themselves from lectures frequently. I will be glad if the lecture halls are provided with such an electronic device. This is because, it will help us (students with deafness) to understand lectures better than when there is an interpreter. (An expression by a student with post lingual deafness from group 3)

iv. Experiences on tutoring among students with deafness in tertiary institutions

Tutoring plays an important role in ensuring that students who are deaf in tertiary institutions benefit from lectures just as their hearing peers. Students with deafness in tertiary institutions miss much information at lectures and other social gatherings. This is due to the fact that sign language interpreters may not be familiar with most of the signs of certain words, and as such, they are unable to provide students with the right information. Since students with deafness do not benefit from lectures as their hearing counterparts due to communication barriers, it would be

prudent for them to be provided with extra tuition on what they were taught after lectures. This will give them in depth understanding of information they might have missed during lectures.

At TTU, the students indicated collectively that they did not have any extra help in the form of tutoring after lectures. Some of the students pointed out that they had been promised severally by their interpreters that they would be briefed on all that they were taught at lectures but nothing of that sort had ever been done. They registered their disappointment for the failure of their lectures and interpreters to take them through all that they were taught during lectures. Some of them indicated that they didn't often understand what they were taught at lectures, and so tutoring would be of great help to them. According to the students, they would benefit from tutoring because it would improve their understanding of lectures and help them to improve on their academic performance. The students went further to explain that they would be glad if the University authority provides them with tutoring support.

Some students' responses were in sign language and were translated in Exact English:

Two students signed that:

Sign language:

No, lecturers no explain class work me after class. Me sometimes not understand class work if interpreter come class. Me think if university give deaf students tutoring after school, deaf students understand lectures more. (A verbatim expression by a student from group 1).

Translation:

No, nobody explains to me what I was taught during lectures after school. I don't normally understand what I am taught at lectures even if there is an interpreter. I suggest that the university authority enforce tutoring service because the service will go a long way to enhance our understanding of lectures to the fullest.

Sign language:

No, not have help teaching after me start school here. Interpreters not come to class more so me not understand lectures. Sometimes me not understand lectures if interpreter come class. Me want lecturer and interpreters meet deaf students Saturday and explain lecture things for deaf student for understand lectures fine. (A verbatim expression by a student from group 2)

Translation:

No, I have not been given extra tuition since I was admitted in this institution. Because the interpreters are not punctual at lectures, I don't normally understand lectures. Even if there is an interpreter at lectures, I don't understand lectures well. I expect lecturers or interpreters to meet my deaf colleagues and myself during the weekends to explain to us what we were taught together with our hearing counterparts. This will help us understand lectures information very well.

Four students had these to say:

I wish I am taught all that I was taught at lectures again during my free time by my interpreter or lecturer. This is due to the fact that I don't understand what I am taught at lectures well. It is unfortunate that this is not happening in this institution. It is not helping my deaf colleagues and myself to get the full understanding of lectures. The interpreter always promises me that he will meet me during the weekends to explain to me all that I was taught during lectures but to no avail. The lecturers and interpreters don't even spend some few minutes after lectures to clarify things to those of us who are deaf. This is not helping us to understand lectures at all. (An expression by a student with post lingual deafness from group 3).

Nobody explains lectures notes to me after lectures even though the interpreters always assure me that they will explain what we were taught by our lecturers. This has affected my academic performance because I don't normally understand information at lectures. If the University authority will put things in place to provide students with deafness with extra tuition (tutoring), it will go a long way to help us understand lectures. (An expression by a student with post lingual deafness from group 4)

I don't benefit from any extra tuition after lectures and this has hindered me from understanding lectures to the fullest because of my condition. I don't normally understand lectures even if an interpreter translates information at lectures to me. Therefore, if my lecturers and interpreters will sacrifice a bit to explain lecture notes to me after lectures, I will be happy. This is because it will me understand lectures well. Sometimes, if I don't understand what is taught at lectures and try to seek clarification from hearing colleagues, they normally feel reluctant to assist me. They are even not ready to assist

me understand lectures properly during our free period. (A verbatim expression by a student with post lingual deafness from group 1)

No, nothing like tutoring support is rendered here. This is because university authority has not made provision for that. I think this service when rendered will benefit all students with deafness because it will help us understand lectures well thereby improving the academic performance of all students with deafness. Whenever I don't understand what is taught at lectures, I find it difficult to understand lecture notes and this has affected my performances in quizzes, mid semester examinations as well as end of semester examinations. (An expression by a student with post lingual deafness from group 2).

4.2. Discussion of findings

The discussion highlighted the major findings of the research and inferences made from them in view of findings from related previous studies. The discussion was also guided by the research questions raised to guide the study.

Research question 1: What are the academic experiences of students with deafness at TTU?

As regards research question 1 which focused on the academic experiences of students with deafness, the following findings were revealed:

The findings on experiences on communication and understanding lectures revealed that although lecturers were concerned about the welfare and success of students, they were handicapped due to communication barrier such as their inability to use and understand spoken language. The students also indicated that, because lecturers lacked the knowledge and skills in teaching the deaf, they lectured without taking into consideration students with deafness. As a result, most times the students were unable to understand lectures due to the fact that they had only a small number of interpreters, and who most times, were unavailable. The findings of the current study are consistent with that of Ekwama (2003) who found that classroom communication is one of the most important aspects when discussing the successful

teaching and learning of learners with deafness, because it is the very aspect where students with disabilities pose the greatest challenge for other learners and teachers. Ekwama further reported that the result of such challenge is persistent poor academic performance. The findings of the current research are also consistent with the findings of Kigotho (2016), who reported that, the lecture method of teaching in a class that includes students with deafness, affected their learning outcomes negatively, and lecturers were unable to meet the demands of modifying and delivering an appropriate mode of teaching students with deafness.

On the issue of students' experiences on attitudes of lecturers, majority of the students indicated that their lecturers' attitudes towards them were not encouraging. The students explained that lecturers rejected and marginalized them during lectures and outside the lecture hall. The students indicated that lecturers considered them to be difficult just because they did not understand their language, and therefore appeared sometimes to be making fun of them. However, a few of the students indicated that their lecturers were concerned about their welfare and were ready to acquire knowledge about their needs. These findings support those of Jarvis and Iantaffi (2006) and Young and Young (2001), who found that when teachers become more knowledgeable about the needs of students with deafness, their attitudes and expectations are generally more positive leading to better outcome. Also, these findings are consistent with Sari (2007), and Cho and DeCastro-Ambrosetti (2005), who also reported that teachers have lower academic and behavioural expectations of students with hearing impairment than their hearing peers, which cause teachers to believe that they are unlikely to make accommodations for students with hearing impairment their lecturers as their major challenge. The findings of this study are also consistent with Baker (2006), who found that a positive teacher-student relationship

provided children with emotional security to fully engage in learning activities, and that a protective effect was evident for developmentally vulnerable participants only when they have close relationship with their teacher. However, the findings are inconsistent with Ower and Goldstein (2002), who found that teachers tend to stereotype and misunderstand the actions and feelings of students with deafness and that teachers attitudes influence their peers' attitudes at school.

Regarding experiences on participation in lectures, the findings indicated that students were given the opportunity to fully participate in lectures. In spite of the fact that majority of the students applauded their lecturers for allowing them to participate in lectures, there were some few students who thought that they were being relegated to the background and marginalized during lectures. The finding is consistent with Lavoie (2007), who suggested that teachers need to create a classroom environment in which students will feel secured and accepted. Lavoie also indicated that educators must build students confidence and self-esteem through daily classroom routines and must teach students with disabilities, including those with deafness, to build positive relationships with peers. The findings of the current study support the findings of Lang (2002), who indicated that the more a student with deafness is involved in classroom activities, the better the student's chances will be for learning the course material. Fuller, Healey, Bradley, and Hall (2004) and Antia, Stinson, and Gaustad (2002) found out that when teachers fail to encourage students with deafness to fully participate in classroom discussion and answering of questions, the results can lead to learned helplessness and dependency. The findings of Fuller et al., and Antia et al. are consistent with the responses from the few students in the current study who indicated that they were relegated to the background and marginalized during lectures.

In the case of experiences on quizzes and examinations, majority of the students indicated that although, they were assessed on areas they were taught, they were not satisfied with how examinations and quizzes were conducted in the university. The students revealed that they were not given extra time during quizzes and examinations. Some of the students stated that during their BECE and WASSCE examinations, they were given extra time but that was not the case at the university. Others suggested, examination questions must be explained to them in sign language. Some also indicated that their assessment must be different from their hearing peers. However, almost all the students indicated that they were normally given prior information on venue and time for examinations. These findings support that of Adu (2016), who found out that students with deafness were assessed on content areas they were taught, but assessment became challenging when sign language interpreters were not present at the examination halls. The current finding is inconsistent with that of Marschark et al. (2006), who revealed that students with deafness and their hearing colleague must be assessed on the same content area since they learn the same thing as their hearing colleagues. However, the current study is consistent with Marschark et al. that, due to communication challenges, some adaptations can be made to meet the learning needs of students with deafness. In addition, the students must be given additional time during quizzes and examinations so that they can have enough time to answer questions.

On the issue of experiences on access to library services, the students collectively stated, they did not have challenges accessing reading materials at the library. However, some students registered their displeasure on how library staff related with them due to communication barriers, which discouraged them from accessing reading materials at the library. Other students explained that they had

cordial relationships with library staff, but the main challenge they encountered was communication barrier. The current findings are consistent with Chima and Eskay (2013), who found out that persons with hearing impairment often discover that communication difficulties can be a serious barrier to their using the library to its full potential and most libraries have not considered focusing particular attention on the provision of library services for students with deafness. However, disputing the findings of the current study that communication is the only barrier to access library services, Soman and Sudhier (2015), revealed that the information needs of students with deafness has become complex and problematic due the insufficiency of adequate information sources and services and there are quite a number of challenges faced by the students in accessing information from the libraries.

Research question 2: What are the social experiences of students with deafness at TTU?

The findings regarding Research Question 2, which focused on the social experiences of students with deafness at TTU, are addressed below.

In the case of relationships and friendships experiences among students with deafness, it was clear that majority of the students considered their hearing peers to be friendly. A few of the students indicated that their hearing peers sometimes neglected them and were therefore unfriendly. The students collectively indicated that the major challenge they had with their hearing peers was communication barriers. This prevented their hearing peers from relating well with them. Some of the students explained that their hearing peers gossiped about them, and mocked them, and did not care about their feelings as well. However, a small number of the students indicated that their hearing peers were caring and supportive, but the inability of their hearing

friends to sign made them feel rejected. A study by Nunes, Ursula and Olsslo (2007), confirmed the findings of the my study which indicates that pupils with deafness were not disliked by their hearing peers but they were more likely to be neglected by their hearing peers and less likely to have friends in the classroom. The findings by Nunes et al., are consistent with the current findings which found out that hearing pupils who were friends of pupils with deafness described their friendships as involving pro-social functions whereas many who have no friends with deafness found communication as an obstacle. This study is also consistent with the findings by Oppong et al. (2017), who revealed that some students and lecturers were found making mockery of students with deafness. The current study confirms that of Miller and Mizrahi (2000), who found out that the biggest problem and root cause of the increase in isolation and anxiety is communication difficulties fostered by mainstreamed setting. The findings of the current study is also consistent with Angelides and Aravi (2007), who revealed that hearing impaired graduates of inclusive institutions seem to indicate that during their attendance in these schools, they encountered feeling of marginalization and isolation because they could not communicate easily with their classmates.

With regards to cooperative learning among students with deafness at TTU, the students indicated that they were given the opportunity to partake in group work with their hearing peers most often. They also stated that their hearing lecturers and hearing peers ensured that they could contribute during group discussions. These, the student explained, helped them to concentrate and understand lectures properly. The students further explained that their major challenge was their hearing peers' inability to understand sign language and communicate in sign language. Consistent with these findings are the results of a study conducted by Secord and Wiig (2009), who found

out that minimizing the distraction of the classroom makes concentrating on the task easier for the students. The findings of the current study confirmed that of Perigoe (2006), who revealed that cooperative learning helps promote independence and team building within the classroom. The study also confirmed the findings by Israelite et al. (2002), who stated that students with deafness reported that being deaf is like being trapped between two worlds and, therefore, the students“ spoke of their efforts to crack the code of unknown rules for communicating with typically hearing peers.

On the issue of experiences on participating in extracurricular activities among students with deafness at TTU, the students indicated that they were not given the opportunity to take active part in extracurricular activities such as sports, games, drama, and school clubs. The students pointed out that only one student with deafness played on the University’s volleyball team despite that many of them were good athletes. While some of the students indicated that they were normally informed of time and venue of almost every extracurricular activity and other social gatherings, a few of the students were of the view that the university authorities did not treat them fairly, because they were mostly not aware of the schedules of extracurricular activities in the institutions. The findings of the current study supports that of Kentiba and Asgedom (2017), who reported that children in school-based sport extracurricular activities are unequal among disabled and non-disabled.

Research question 3: What are the institutional support services available for students with deafness at TTU?

In terms of interpreting experiences among students with deafness at TTU, the students indicated that the university had not done enough to improve the sign language interpreting service for students in the university. According to the students,

the university had employed the service of three sign language interpreters on part time basis, but the number was too small to meet the needs of the students. Additionally, because the service rendered was on part time basis, the interpreters were not always there to support them and this affected their academic performances. Some students indicated that the interpreters were not committed to the service they had been hired to render. Some other students noted that the interpreters were not experienced in signing, thereby compelling them (the interpreters) to sign wrongfully during lectures and other social gatherings. These findings support that of Adu (2016), who found out that sign language interpreters were sometimes absent. Consistent with the current study is that of Oppong et al. (2016), who revealed that the quality of sign language interpreting services was a major issue of concern to students who are deaf and who use interpreting services in teaching and learning. The current findings are consistent with that of Marshark et al. (2005), who revealed that students with deafness do not acquire as much information from lectures as their hearing peers, even with experienced interpreters who were familiar with the students. Similar to the findings of the current study, is that of Harrington (2000) who also reported that most interpreters lack the skills or training necessary to interpret at the university level.

On the issue of note taking experiences among students with deafness at TTU, the students noted that they did not have note takers to write lecture notes for them during lectures. According to some few students, this made them felt unsupported and as well caused them to struggle to get the required information expected of them. Some of the students indicated that their hearing peers sometimes felt reluctant to hand over their lecture notes to be copied. Meanwhile, most of the students indicated that although they did not have note takers, their lecturers, through their interpreters gave them print out of lecture notes to be photocopied. However, the students stressed

that they would be glad if they were given note takers. Inconsistent with the findings of the current study is that Cawthon, Nichols and Collier (2008), who found out that most students with deafness and/or hard of hearing in mainstream postsecondary settings use note-taking services than any other available support services. The current study is inconsistent with the findings by Marschark et al. (2005) who revealed that even with interpreting and note taking services, students in universities who are deaf receive less information from lectures and tutorials than their hearing peers.

As regards to real-time captioning experiences among students with deafness at TTU, the students indicated that they had not heard of a technology called real time captioning. They explained that they had not been given the opportunity to view information from lecturers on a screen. The students went further to indicate that they had never been given the opportunity to have captions of information during lectures on a screen to help them check and fill in what they might have missed from either the interpreter or the lecturer. However, the students collectively remarked that they would be very happy if the university authority would consider securing real time captioning devices since they did not have enough interpreters. According to some of the students, they would not worry about the absence of sign language interpreters during lectures and even other social gatherings when they are provided with real time captionist. The current findings support that of Stinson et al. (2000), who revealed that real-time captioning technique is indeed helpful as students with deafness will be able to concentrate on the lecturer via the interpreter and not worry about missing some of the content.

Regarding experiences on tutoring among students with deafness at TTU, the students indicated that they did not receive extra tutoring after lectures. Some of the

students pointed out that they had been promised severally by their interpreters that they would be briefed on all that they were taught at lectures but nothing of that sort had ever been done. They registered their disappointment for the failure of their lectures and interpreters to take them through all that they were taught during lectures. Some of them indicated that they did not normally understand what they were taught at lectures, and therefore, tutoring would be of great help to them. According to the students, they would benefit from tutoring because it would help them to enhance their understanding of lectures, and eventually, their overall academic performance. The students went further to explain that they would be glad if the university authorities provided them with tutoring support. Consistent with the findings of the current study is the study conducted by Stinson et al. (2000) that students with deafness value additional information they were able to acquire through tutoring and held positive attitudes towards this support service. The current findings are supported by Spradbrow and Power (2000), who also found out that students with hearing impairment in Australia universities miss information during lectures and therefore tutoring is one support service when offered, will accommodate this problem.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This study explored the experiences of 21 students with deafness at TTU, and in this chapter a summary of the findings, conclusions, and recommendations made are presented. . Three research questions were formulated from the objectives to serve as a guide for the study. The 21 students with deafness were interviewed using focus group interview. Data from the interviews were analysed using the themes derived from the responses of the participants.

5.1 Summary of Findings

Regarding the academic experiences among students with deafness at TTU, The study results revealed that although lecturers were concerned about the welfare and success of the students, they were handicapped due to communication barrier. The study further revealed that students with deafness were not given extra time during quizzes and examinations. Further analysis of the data revealed that the students did not have challenges accessing reading materials at the library. It was also found out that library staff related well with students with deafness but the students saw communication to be a barrier.

In terms of the social experiences among students with deafness, it was revealed that students with deafness at TTU had few hearing friends but had challenges communicating with them. The findings of the study further the students were fully involved in group work but were not fully involved in extracurricular activities such as sports, games, drama and excursions.

In expressing their views on institutional support services available for students with deafness, results of the study revealed that the sign language interpreters were very few and worked on part time basis and were not committed to the work making them unavailable mostly. The findings further revealed that the interpreters were not experienced in signing which compelled them to sign wrongfully during lectures and other social gatherings. The findings of the study further revealed that note taking support was not rendered students but most lecturers gave them handouts. Findings of the study revealed that real time captioning was required since it will go a long way to provide the students with the right information even in the absence of sign language interpreters. In addition, it was found out that students with deafness were not supported or tutored after lectures by lecturers and sign language interpreters.

5.2 Conclusion

The study concluded that lecturers' mode of instruction and attitudes towards students with deafness will influence their academic performance positively. However, other factors such as extra time during quizzes and examinations, involvement in extracurricular activities, positive attitudes from hearing counterparts as well as students' support services such as sign language interpreting, note taking, tutoring and real time captioning also enhance students' social competences and academic performances positively.

From the results of the study, I can conclude that the experiences of students with deafness towards learning in the university are not up to expectation because the students to sign language interpreter ratio is below expectation. Additionally, support

services such as note taking, tutoring and real time captioning are not available at the University

5.3 Recommendations

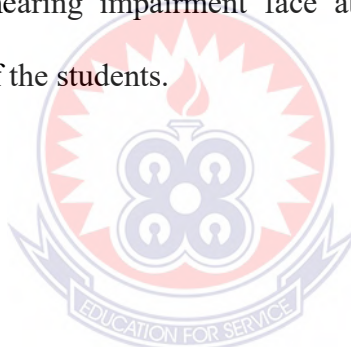
Based on the findings of the study, the researcher made the following recommendations:

- The university authorities should ensure that lecturers, administrative staff, library staff and hearing students are provided with some basic skills in sign language and knowledge about the needs of students with deafness to help them communicate with the deaf to some extent. This will also ensure that their attitudes and expectations are generally more positive since positive attitudes are related to better outcomes.
- The Disability Unit should occasionally educate lecturers on how to adapt their instruction to meet the needs of all students with disabilities including those with deafness.
- Students with deafness must be given extra time during quizzes and examinations.
- The university authorities should ensure that all students with disability including those with deafness who have the potentials fully participate in extracurricular activities.
- TTU should recruit more staff to render support services, including sign language interpreting, note taking and tutoring, in order to close the gap regarding the student sign language interpreter ratio.

- Students with deafness should be encouraged to read English books and use dictionaries more often to increase their vocabularies so as to improve their academic performances.
- The University could also secure enough real time captionists to support students with deafness to help students get the right information from lecturers especially when there is no interpreter during lectures and other social gatherings.

5.4 Suggestions for further research

The study only looked at the experiences of students with deafness towards learning at TTU in the Western Region of Ghana. Further studies could look at barriers students with hearing impairment face at TTU and their effects on the academic performance of the students.



REFERENCES

- Abrizah, A., Zainab, A. N., Kiran, K., & Raj, R. G. (2013). LIS journals scientific impact and subject categorization: A comparison between Web of Science and Scopus. *Scientometrics*, 94(2), 721-740.
- Adekemoyo, J. A. (2008). Classroom communication and placement of the deaf child in an inclusive class. Ibadan: Agbo Areo.
- Adoyo, P. O. (2007). Educating children in inclusive setting: Challenges and considerations. *International Journal of Deaf Studies*, 22(1), 51-58.
- Adu, J. (2016). *Social and academic experiences of students who are deaf at the University of Education, Winneba*. Unpublished Masters Dissertation, University of Education, Winneba, Ghana.
- Ainscow, M., (2007). *Teaching for diversity: the next big challenge: The handbook of 7 curriculum and instruction*. New York: Sage Publications
- Alahbabi, A. (2009). K-12 special and general education teachers' attitudes toward the inclusion of students with special needs in general education classes in the United Arab Emirates (UAE). *International Journal of Special Education*, 24(2), 42-54.
- Allport, F. H. (1954). The structuring of events: Outline of a general theory with applications to psychology. *Psychological Review*, 61(5), 281.
- Alysha, P. S. (2018). *Memahami narasi komunikasi penyesuaian diri anak tunarungu di sekolah inklusi*. Doctoral dissertation, Diponegoro University, Tembalang, Indonesia.
- Andew, J. (2000). *The inclusive Classroom: Educational Exceptional Children*. (2nd ed.) U.S.A: Canadian Publisher Company.
- Angelides, P., & Aravi, C. (2007). The development of inclusive practices as a result of the process of integrating deaf/hard of hearing students. *European Journal of Special Needs Education*, 22(1), 63-74.
- Antia, S. D., & Kreimeyer, K. H. (2001). The role of interpreters in inclusive classrooms. *American Annals of the Deaf*, 146, 355-365.
- Antia, S. D., & Kreimeyer, K. H. (2003). *Peer interactions of deaf and hard-of-hearing children*. New York: Oxford University Press.
- Antia, S. D., Stinson, M. S., & Gaustad, M. G. (2002). Developing membership in the education of deaf and hard-of-hearing students in inclusive settings. *Journal of Deaf Studies and Deaf Education*, 7(3), 214-229.

- Baker, J. A. (2006). Contributions of teacher–child relationships to positive school adjustment during elementary school. *Journal of School Psychology, 44*(3), 211-229.
- Bigler, R. S., Spears Brown, C., & Markell, M. (2001). When groups are not created equal: Effects of group status on the formation of intergroup attitudes in children. *Child Development, 72*(4), 1151-1162.
- Borland, J., & James, S. (1999). The learning experience of students with disabilities in higher education. A case study of a UK university. *Disability & Society, 14*(1), 85-101.
- Bridges, D. R., & Tomkowiak, J. (2010). All port's intergroup contact theory as a theoretical base for impacting student attitudes in inter-professional education. *Journal of Allied Health, 39*(1), 29-33
- Brophy, P. (2001). The historical context of eLib: practice- based library research in the UK. *Library management*.
- Burgard, W., Cremers, A. B., Fox, D., Hähnel, D., Lakemeyer, G., Schulz, D., & Thrun, S. (1998, July). The interactive museum tour-guide robot. In *Aaai/iaai* (pp. 11-18).
- Busch, S. N. (2012). Students who are deaf/hard of hearing with learning challenges: Strategies for classroom instruction. *Independent Studies and Capstones*. Paper 649. Program in Audiology and Communication Sciences, Washington University School of Medicine. https://digitalcommons.wustl.edu/pacs_capstones/649.
- Cawthon, S. W., Nichols, S. K., & Collier, M. (2008). Facilitating access: What information do Texas postsecondary institutions provide on accommodations and services for students who are deaf or hard of hearing? *American Annals of the Deaf, 153*(5), 450-460.
- Chakuchichi, D. D., Chimedza, R. M., & Chinez, M. M. (2003). *Including the excluded issue in disability and inclusion*. Harare, Zimbabwe Open University.
- Chataika, T. (2009). Inclusion of disabled students in higher education in Zimbabwe. In *Cross- Cultural Perspectives on Policy and Practice* (pp. 130-145). Routledge
- Chima, J. N., & Eskay, M. (2013). Library and information service delivery for the blind and physically challenged in University of Nigeria Nsukka Library. *European academic research, 1*(5), 625-635.
- Creswell, J. W. (2005). *Educational research planning, conducting and evaluating qualitative and quantitative research*. Ohio: Pearson and Merrill Prentice – Hall.

- Cho, G., & DeCastro-Ambrosetti, D. (2005). Is ignorance bliss? Pre-service teachers' attitudes toward multicultural education. *The High School Journal*, 89(2), 24-28.
- Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg Nursing*, 25(6), 435+.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th Ed.). Thousand Oaks, CA: Sage.
- Crewell, W. J., & Crewell, D. J. (2018). *Research Design, quantitative, qualitative and mixed method approaches* (5 ed.). SAGE Publications: Inc. USA.
- Disability Act (2006), Act (715) of the Republic of Ghana. Accra: Ghana Publishing.
- Dochy, F., Segers, M., & Gijbels, D. (2007). Assessment engineering: Breaking down barriers between teaching and learning, and assessment. In D. Boud & N. Falchikov (Ed.), *Rethinking assessment in higher education* (pp. 97-110). New York: Routledge.
- Ekwama, M. B. (2003). Communication systems used with the hearing-impaired for effective educational practices in special education. *The Special Educator*, 3(1), 46-51.
- Eladio, Z. O. (2006). *Asise Investiga*. Santa Tecla: Clasicos Roxil.
- Foster, S., Long, G., Marron, E., Rasmussen, S., & Sour, R. (2005). *Deaf participation in Tertiary Education: an approach to the adaptation of the teaching*. International Conference Proceedings "Deaf Participation in Education and Society: International Perspectives, University of Patras, Department of Primary Education.
- Fuller, M., Healey, M., Bradley, A., & Hall, T. (2004). Barriers to learning: a systematic study of the experience of disabled students in one university. *Studies in Higher Education*, 29(3), 303-318
- Gadagbui, G. Y. (2018). Screening for hearing and speech impairment in children (2nd ed.). Winneba: Department of Special Education, UEW.
- Giorgi, A. (2009). *The descriptive phenomenological method in psychology: A modified Husserlian approach*. Ann Arbor, MI: Duquesne University Press.
- Goette, L., Huffman, D., & Meier, S. (2006). The impact of group membership on cooperation and norm enforcement: Evidence using random assignment to real social groups. *American Economic Review*, 96(2), 212-216
- Gorman, G. E., Clayton, P. R., Shep, S. J., & Clayton, A. (2005). *Qualitative research for the information professional: A practical handbook*. Facet Publishing

- Green L., & Engelbrecht, P. (2007). *An introduction to inclusive education*. Pretoria: van Schaik Publisher.
- Harrington, F. (2000). Sign language interpreters and access for deaf students to university curricular: The ideal and the reality. *Benjamins Translation Library*, 31, 219-42.
- <http://www.deafconnected.com.au>
- <http://www.disabledworld.com/disability/types>
- <https://dpi.wi.gov/pld/yss/resource-guide-2002>
- Howell, C. (2006). *Disabled students and higher education in South Africa: Disability and social change*. Cape Town: Human Sciences Research Council (HSRC) Press.
- Hyde, M., & Power, D. (2003). Characteristics of deaf and hard of hearing students in Australian regular schools: Hearing level comparisons. *Deafness and Education International*, 5(3), 133-143.
- Israelite, N., Ower, J., & Goldstein, G. (2002). Hard-of-hearing adolescents and identity construction: Influences of school experiences, peers, and teachers. *Journal of Deaf Studies and Deaf Education*, 7(2), 134–148.
- Jarvis, J., & Iantaffi, A. (2006). „Deaf people don't dance“: challenging student teachers' perspectives of pupils and inclusion. *Deafness & Education International*, 8(2), 75-87.
- Johnson, D. W., Johnson, R. T., & Stanne, M. B. (2000). *Cooperative learning methods: A meta-analysis*. Minneapolis: University of Minneapolis.
- Johnson, R. B., & Christensen, L. B. (2008). *Educational research: Quantitative, qualitative, and mixed approaches* (3rd Ed.). Thousand Oaks, CA: Sage.
- Kent, B. (2006). They only see it when the sun shines in my ears: Exploring perceptions of adolescent hearing aid users. *Journal of Deaf Studies and Deaf Education*, 11(4), 461–476.
- Kentiba, E., & Asgedom, T. (2017). Elements Contributing to limited participation of disabled children in school-based sport extracurricular activities. *Austin Sports Medicine*, 2(3), 1021.
- Kigotho, L., W. (2016). *Barriers faced by students with hearing impairment in inclusive learning environment, A case of the University of Nairobi*. Unpublished Masters Dissertation, University of Nairobi.
- Kiyaga, N. B., & Moores, D. F. (2003). Deafness in Sub-Saharan Africa. *American Annals of the Deaf*, 18-24.

- Kleinert, H. L., Miracle, S. A., & Sheppard-Jones, K. (2007). Including students with moderate and severe disabilities in extracurricular and community recreation activities: Steps to success. *Teaching Exceptional Children*, 39(6), 33-38.
- Kluwin, T. N., Stinson, M. S., & Colarossi, G. M. (2002). Social processes and outcomes of in-school contact between deaf and hearing peers. *Journal of Deaf Studies and Deaf Education*, 7(3), 200-213.
- Kreimeyer, K. H., Crooke, P., Drye, C., Egbert, V., & Klein, B. (2000). Academic and social benefits of a co-enrollment model of inclusive education for deaf and hard-of-hearing children. *Journal of Deaf Studies and Deaf Education*, 5(2), 174-185.
- Kusi, H. (2012). *Doing qualitative research: A guide for researchers*. Accra: Emmpong Press.
- Lanfer, E. (2006). *A resource guide: Mainstreaming a child with a hearing impairment: What teachers need to know*.
- Lang, H. G. (2002). Higher education for deaf students: Research priorities in the new millennium. *Journal of Deaf Studies and Deaf Education*, 7, 267-280
- Lang, R. M. (2005). Recommendations for chamber quantification: A report from the American Society of Echocardiography's guidelines and standards committee and the chamber quantification writing group, developed in conjunction with the European Association of Echocardiography, a branch of the European Society of Cardiology. *Journal of the American Society of Echocardiography*, 18, 1440-1463.
- Lang, H. G., Biser, E., Mousley, K., Orlando, R., & Porter, J. (2004). Tutoring deaf students in higher education: A comparison of baccalaureate and sub-baccalaureate student perceptions. *Journal of Deaf Studies and Deaf Education*, 9(2), 189-201.
- Lavoie, R. (2007). *Motivating the Child with Attention Deficit Disorder*.
- Liversidge, A. G. (2003). *Academic and social integration of deaf and hard of hearing students in a Carnegie research university*. Unpublished doctoral thesis, New York: University of Maryland.
- Lockwood, H. (2001). *Hearing impaired children in the mainstream classroom: The effects on literacy and learning. Differentiation and diversity in the primary school*. London: Routledge, Taylor & Francis.
- Malunga, T. (2007). *An investigation on the use of sign language and oral language by regular teachers teaching hearing impaired children: A study at one of the inclusive schools in Lusaka, Zambia*. (Unpublished master's thesis). University of Oslo. Norway.

- Mantey, K. A. (2011). *Experiences of pupils with post lingual hearing impairment at the Unipra South Inclusive School, Winneba*. Unpublished Master's Thesis, University of Education, Winneba, Ghana.
- Marschark, M., Convertino, C., & LaRock, D. (2006). *Optimizing academic performance of deaf students: Access, opportunities, and outcomes. Deaf learners: Developments in curriculum and instruction*. Washington, D.C.: Gallaudet University Press.
- Marschark, M., Sapere, P., Convertino, C., & Seewagen, R. (2005). Access to postsecondary education through sign language interpreting. *Journal of Deaf Studies and Deaf Education*, 10(1), 38-50.
- Martin, D., & Bat- Chava, Y. (2003). Negotiating deaf-hearing friendships: *Coping strategies of deaf boys and girls in mainstream schools. Child: Care, Health and Development*, 29(6), 511-521.
- Marzano, R., Pickering, D., & Pollock, J. 2001. *Classroom instruction that works*. Alexandria, VA: ASCD.
- Mazoue, P. (2011). *The academic challenges facing deaf students at Durban university of Technology*. A doctoral dissertation, Faculty of Education, University of Kwa Zulu Natal, South Africa.
- Miller, E., & Mizrahi, M. (2000, July). Loneliness, social adjustment & sociocultural affiliation of deaf and hard of hearing students in postsecondary education in Israel. In *19th ICED Congress, Sydney, Australia, July -----*.
- Mittler, P. (2000). *Working towards inclusive education: The social context*. London: David Fulton Publications Ltd.
- Moeller, M. P. (2007). Current state of knowledge: psychosocial development in children with hearing impairment. *Ear and Hearing*, 28(6), 729-739.
- Mpofu, E., Mutepfa, M. M., & Chataika, T. (2007). Inclusive education in Zimbabwe: Policy, curriculum, practice, family, and teacher education issues. *Childhood Education*, 83(6), 342-346.
- Mullen, B., Brown, R., & Smith, C. (1992). In group bias as a function of salience, relevance, and status: An integration. *European Journal of Social Psychology*, 22(2), 103-122.
- Noddings, N. (2001). The caring teacher. *Handbook of research on teaching* (4th ed). Washington, DC: American Educational Research Association.
- Norton, L. (2009). Assessing student learning. In H. Fry, S. Ketteridge, & S. Marshall (Eds.), *A handbook for teaching and learning in higher education: Enhancing academic practice* (pp. 132-1490). London: Routledge.
- Nunes, T., Pretzlik, U., & Olsson, J. (2001). Deaf children's social relationships in mainstream schools. *Deafness & Education International*, 3(3), 123-136.

- Obi, F. B., & Mensah, A. (2005). Inclusive education: The challenges of the 21st century. Nigerian-Ghanaian teacher. *African Journal of Special Education*, 4(1), 19-27.
- Oppong, A. M., Fobi, D., & Fobi, J. (2016). Deaf students' perceptions about quality of sign language interpreting services. *International Journal of Educational Leadership*, 7(1), 63-72.
- Oppong, A. M., Adu, J., & Fobi, D. (2017). Social experiences of deaf students at the University of Education, Winneba. *NASET Special Educator e-Journal*, 10(5), 18-33.
- Orlando, R., Gramly, M. E., & Hoke, J. (1997). Tutoring deaf and hard of hearing students: A report of the national task force on quality of services in the postsecondary education of deaf and hard of hearing students. Rochester, NY: Northeast Technical Assistance Center, Rochester Institute of Technology.
- Peck, S. C., Roeser, R. W., Zarrett, N., & Eccles, J. S. (2008). Exploring the roles of extracurricular activity quantity and quality in the educational resilience of vulnerable adolescents: Variable- and pattern- centered approaches. *Journal of Social Issues*, 64(1), 135-156.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90(5), 751.
- Phillips, R. (2005). Challenging the primacy of lectures: the dissonance between theory and practice in university teaching. *Journal of University Teaching Learning Practice*, 2(1), 1-12.
- Punch, R., & Hyde, M. (2005). The social participation and career decision-making of hard-of-hearing adolescents in regular classes. *Deafness & Education International*, 7(3), 122-138.
- Richardson, J. T., Long, G. L., & Foster, S. B. (2004). Academic engagement in students with a hearing loss in distance education. *Journal of Deaf Studies and Deaf Education*, 9(1), 68-85.
- Richardson, J., Long, G., & Woodley, A. (2004). Students with undisclosed hearing loss: A challenge for academic access, progress and success? *Journal of Deaf Students and Deaf Education*, 9(4), 427-441.
- Sari, H. (2007). The influence of an in-service teacher training (INSET) programme on attitudes towards inclusion by regular classroom teachers who teach deaf students in primary schools in Turkey. *Deafness & Education International*, 9(3), 131-146.

- Sicord, W.A., & Wiig, E. H., (Eds.). (2009). *Proceedings from 101 ways to help children communicate and learn in school*. New Orleans, LA: ASHA Convention.
- Soman, V. M., & Sudhier, K. P. (2015). Awareness and use of Internet resources by visually-impaired students in Kerala: Case study of Thiruvananthapuram district. *DESIDOC Journal of Library & Information Technology*, 35(2).
- Spradbrow, G., & Power, D. (2004). *Slipping through the cracks? The support needs of hard of hearing students in a university program*. Paper presented at the 19th ICED Congress, Sydney, Australia.
- Stinson, M. S., & Kluwin, T. N. (2011). *Educational consequences of alternative school*. New York: Oxford University Press
- Stinson, M., McKee, B., & Elliot, L. (2000). Development and implementation of the C-print speech-to-text support service. Retrieved from *Nekar-Verlag*. <https://scholarworks.rit.edu/article/939>.
- Swift, T., Martin, M., & Shellback. (2012). I knew you were trouble (Recorded by Taylor Swift) *On Red* [CD]. Nashville, TN: Big Machine Records.
- Thumann-Prezioso, C. (2005). Deaf parents' perspectives on deaf education. *Sign Language Studies*, 5, 415-440.
- Tsuladze, M. (2015). *Teaching and learning of deaf students in ordinary vocational education setting: The Georgian case*. A Master of Philosophy in Special Needs Education, Department of Special Needs Education; Faculty of Educational Sciences - University of Oslo, Norway.
- UNESCO, (1994). *The Salamanca Statement and Framework for action on special needs education: adopted by the World Conference on Special Needs Education; Access and Quality. Salamanca, Spain, 7-10 June 1994*.
- United Nations Children's Fund. (2007). *Promoting the rights of children with disabilities*. Innocent Digest No. 13. Florence, Italy: UNICEF Innocenti Research Centre
- Whitburn, B. (2013). The dissection of paraprofessional support in inclusive education: You're in mainstream with a chaperone". *Australasian Journal of Special Education*, 37(2), 147-161.
- Wilson, K., & Korn, J. H. (2007). Attention during lectures: Beyond ten minutes. *Teaching of Psychology*, 34(2), 85-89.
- Yabbi, O. P. J. (2013). *Influence of socio-economic and cultural factors on academic performance for pupils in Kakamega*. Unpublished Master's Thesis from Catholic University of Eastern Africa.

Youngs, C. S., & Youngs Jr, G. A. (2001). Predictors of mainstream teachers' attitudes toward ESL students. *Tesol Quarterly*, 35(1), 97-120.

Zainab, A. N. (2013). Open Access repositories and journals for visibility: Implications for Malaysian libraries. *arXiv preprint arXiv:1301.53*



APPENDIX A



April 30, 2019

Dear Sir/Madam,

LETTER OF INTRODUCTION

I write to introduce to you Mr. Andrew Osei-Akaho as a Ph.D student of the Department of Special Education of the University of Education, Winneba, with registration number 0173150022.

He is currently working on his thesis on the topic: "Empowerment of Students with Deafness towards learning at Taworadi Technical University".

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

Thank you

Yours faithfully,

DR. DANIEL S. O. DOGBE
As. Head of Department

UNIVERSITY OF EDUCATION, WINNEBA
P.O. BOX 235
WINNEBA
GHANA



APPENDIX B

SEMI-STRUCTURED INTERVIEW GUIDE FOR STUDENTS WITH DEAFNESS AT TAKORADI TECHNICAL UNIVERSITY ON THEIR EXPERIENCES TOWARDS LEARNING AS STUDENTS IN THE UNIVERSITY

Time: **Venue:** **Date:** **Duration:**

Bio data of Students

This interview was meant to collect information from students with deafness on their experiences at the University of Education, Winneba. The items were developed on the themes in the research questions.

Type of hearing loss:

Hall of Residence:

Age:

Department:

Gender:

Level:

Onset of Disability:



Research Question 1: What are the Academic Experiences of students with deafness in Tertiary Institutions?

Question: Tell me some of your academic experiences at the university?

Prompts:

1. How well do you understand lectures?
2. How satisfied are you as regards your participation during lectures?
3. How do you access information at the lecture hall?

4. How would you like to be assessed?
5. Do you think you must be given extra time during quizzes and examinations?
6. What other experiences have you gained during quizzes and examinations?
7. How well do lecturers communicate to your understanding during lectures?
8. How well do lecturers relate with you in the lecture hall?
9. How accessible are reading materials at the library to you?
10. How well do library staff relate with you?

Research question 2: What are the Social Experiences of students with deafness in Tertiary Institutions?

Question: Tell me some of your social experiences at the university?

Prompt:

1. How many friends do you have?
2. How do your hearing friends treat you?
3. Have you ever felt rejected by hearing peers?
4. How well do your hearing friends communicate in sign language?
5. How do you feel as you interact with hearing peers?
6. How often are you involved in group work and discussions?
7. How do you access information about games, sports and other extracurricular activities?
8. How involved are you in games, sports and other extracurricular activities?

Research question 3: what institutional support services are available for students with deafness in tertiary institutions?

Question: Mention some of the institutional supports available at the university?

Prompt:

1. How available are sign language interpreters during lectures and other gathering?
2. How committed are the interpreters?
3. How well do you understand your interpreters when they sign?
4. How do you feel when there is no interpreter during lectures and other gatherings?
5. Do you think you need a note taker?
6. How often does someone take notes for you during lectures?
7. How often are lecturers speech translated into electronic text as they speak?
8. How often are you given hard copies of lecture transcript after lectures?
9. How committed are lecturers in assisting you after lectures?
10. What do you suggest must be done by the university authority to improve the support services?

APPENDIX C

University of Education, Winneba
Department of Special Education
Box 25, Winneba.

7th May, 2019.

Dear Madam/Sir,

INFORMED CONSENT TO PARTICIPATE IN RESEARCH

I am a student at the University of Education, Winneba pursuing a Master's programme in Special Education. I am to conduct research in your university as one of the requirements for the course. The focus of my research is to explore the experiences of students with deaf deafness towards learning at Takoradi Technical University.

This university was specifically selected for the study to explore the experiences of students with deafness. The students will be interviewed. However, individuals may choose to participate or not, and to withdraw from the study voluntarily. All information provided will solely be used for research purposes and shall be treated with confidentiality.

On your part, you are requested to decide voluntarily by signing below if you accept to be a participant in this research. Please do not write your name in this letter.

Thank you.

.....

Research Participant

APPENDIX D

CASE HISTORY OF STUDENT RESPONDENTS WITH DEAFNESS AT TAKORADI TECHNICAL UNIVERSITY

Name of student:

Age:

Sex:

Programme:

Number of siblings:

Birth Order:

ONE ON ONE INTERVIEW

1. Which ear do you hear with?
.....
2. Were you born deaf?
.....
3. If no, when did you become deaf?
.....
.....
4. What was the cause of your deafness?
.....
.....

APPENDIX E

CENTER FOR HEARING AND SPEECH SERVICES - CHSS

AUDIOLGICAL EVALUATION

DATE: 8-12-19 ID NO:


NAME: _____ SEX: Male AGE: 24 DOB: _____

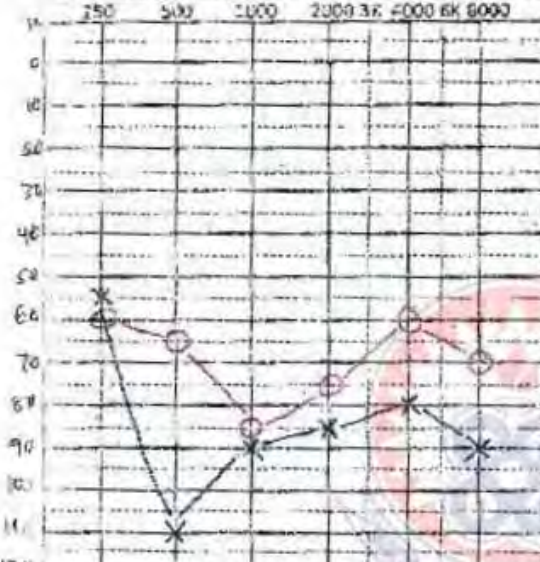
ADDRESS: HND Interior Design & Technology L-2011 TEL: _____

NATURE OF WORK: Student REFERRED BY: _____

AUDIOMETER: AN 27 EXAMINER: Godwin Nyarko

TEST ABILITY: GOOD FAIR POOR





OTOSCOPIC EXAMINATION

RIGHT EAR	LEFT EAR
-----------	----------

AUDIOGRAM KEY

	RT	LT
A/C UNMASKED	O	X
A/C MASKED	o	x
B/C UNMASKED	<	>
B/C MASKED		
SOUND FIELD	S	

PTA RT LT
77 86 86

TYMPANOMETRY

NORMAL VALUES	RT	LT
ECV		
E-2.0 mm		
Peak Pressure		
(150-250 daPa)		
% of Conf. Values		
(0-2.0 mm)		

OTOCOUSTIC EMISSIONS

OAE	PASS	REFER
RIGHT		
LEFT		

LINEAR SCORE

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

$$\begin{array}{r} 77 \\ + 95 \\ \hline 172 \div 2 = 86 \text{ dB HL} \end{array}$$

AUDIOLOGIST

CENTER FOR HEARING AND SPEECH SERVICES - CISS



AUDIOLOGICAL EVALUATION

DATE: 4-12-19 ID NO: _____

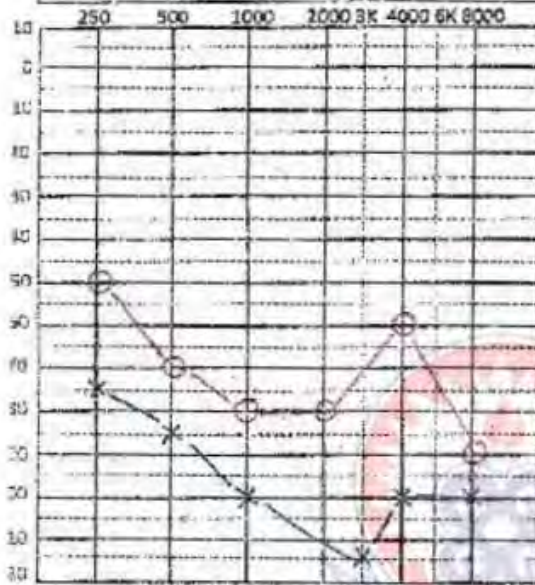
NAME: _____ SEX: Female AGE: 25 DOB: _____

ADDRESS: N/A Hotel Catering & Institutional Mgt L-100 TEL: _____

NATURE OF WORK: Student REFERRED BY: _____

AUDIOMETER: AB 27 EXAMINER: Godwin Nyarko

TEST RELIABILITY: GOOD POOR



AUDIOGRAM KEY

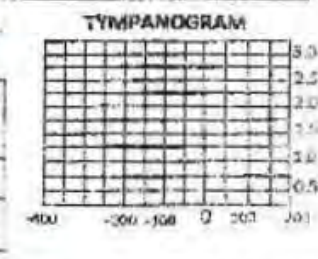
	RT	LT
A/C UNMARKED	O	X
A/C MARKED	Δ	▽
B/C UNMARKED	<	>
B/C MARKED	!	!
SOUNDFIELD	S	S

SPEECH AUDIOMETRY

	RIGHT	LEFT
SAL		
SRT / AAST		
SRS		
UCL/MCL		

TYMPANOMETRY

NORMAL VALUE	RT	LT
ECV (0.2-2.0 ml)		
Peak Pressure (-150 to 0 daPa)		
Peak Compliance (0.2-2.0 ml)		



OTOACOUSTIC EMISSIONS

	OAE	PASS	REFER
RIGHT			
LEFT			

STIMULUS ACOUSTIC REFLEX THRESHOLD

	500	1K	2K	4K
WDR				
CONTRA	RT			
	LT			

OTOSCOPIC EXAMINATION

RIGHT EAR	LEFT EAR

LINEARS[®] SCORE

--

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

$$\begin{array}{r}
 77 \\
 + 100 \\
 \hline
 177 - 2 = 88.5 \text{ dB HL}
 \end{array}$$

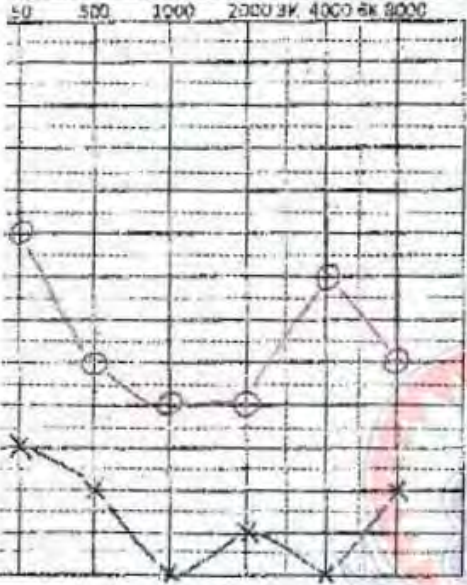
CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDIOLOGICAL EVALUATION

4-12-19 ID NO: _____ SEX: Female AGE: 28 DOB: _____
 HNS Hotel Catering and Institutional Mgt L105
 RE OF WORK: Student REFERRED BY: _____
 OMEGA: AD 27 EXAMINER: Godwin Nyarko

HEARING: GOOD FAIR _____ POOR _____



AUDIOGRAM KEY

	RT	LT
A/C UNMASKED	O	K
V/C UNMASKED	S	J
B/C UNMASKED	<	>
B/C MASKED	I	I
SCOUT FIELD	∞	∞

SPEECH AUDIOMETRY

	RIGHT	LEFT
SAI		
SRT / RAST		
SRS		
UCL/MCL		

PTA: RT _____ LT _____
 ITD: RT _____ LT _____

TYMPANOMETRY

	RT	LT
NORMAL RANGE		
ECV		
Peak Pressure (100-1000 Hz)		
Peak Compliance (100-1000 Hz)		



OYDACOUSTIC EMISSIONS

	OAE	PASS	REFER
RIGHT			
LEFT			

ACUSTIC REFLEX THRESHOLD

	STIMULUS	500	1K	2K
IMP	RT			
	LT			
CONTRA	RT			
	LT			

OTOSCOPIC EXAMINATION

RIGHT EAR: _____ LEFT EAR: _____

LINEARS[®] SCORE: _____

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

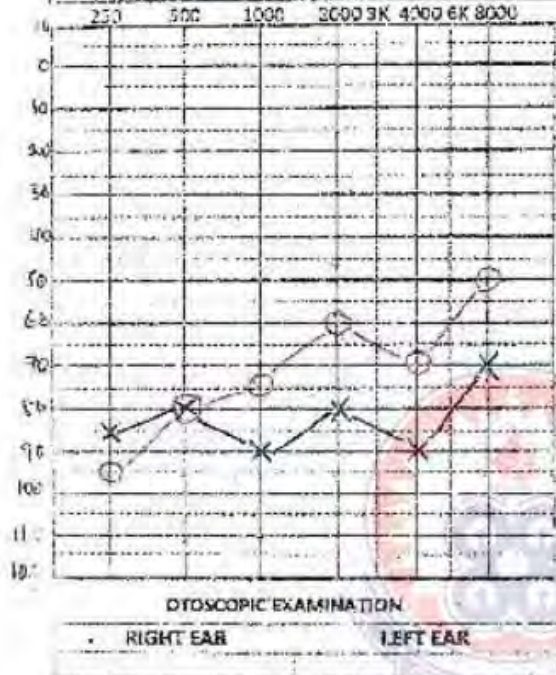
$$\frac{77}{110} \times 187 - 2 = 93.5 \text{ dB HL}$$

CENTER FOR HEARING AND SPEECH SERVICES - CISS



AUDIOMETRICAL EVALUATION

DATE: 4-12-19 ID NO: _____
 NAME: _____ SEX: Male AGE: 24 DOB: _____
 ADDRESS: HND ICT L-100 TEL: _____
 NATURE OF WORK: Student REFERRED BY: _____
 AUDIOMETRIST: AD 27 EXAMINER: Godwin Nyarko
 TEST RELIABILITY: GOOD FAIR POOR



AUDIOGRAM KEY

	RT	LT
A/C UNMASKED	O	X
A/C MASKED	⊖	⊖
B/E UNMASKED	◁	▷
B/E MASKED		
SOUND-FIELD	S	

SPEECH AUDIOMETRY

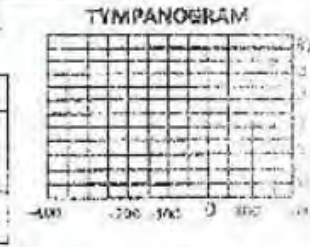
	RIGHT	LEFT
SAL		
SRT / AAST		
SRS		
I/CL/MCL		

PTA

RT	LT
<u>72 dB HL</u>	<u>83 dB HL</u>

TYMPANOMETRY

NORMAL VALUES	RT	LT
BCV (0.2-2.0 ml)		
Peak Pressure (-150 to 100 daPa)		
Max Compliance (0.2-2.0 ml)		



OYOACOUSTIC EMISSIONS

OAE	PASS	REFER
RIGHT		
LEFT		

STIMULUS ACOUSTIC REFLEX THRESHOLD

	500	1K	2K
RT			
LT			
CONTRA	RT		
	LT		

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

72
+ 83
155 - 2 = 77.5 dB HL

AUDILOGIST

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDIOTOLOGICAL EVALUATION

DATE: 3-12-19 ID NO: _____

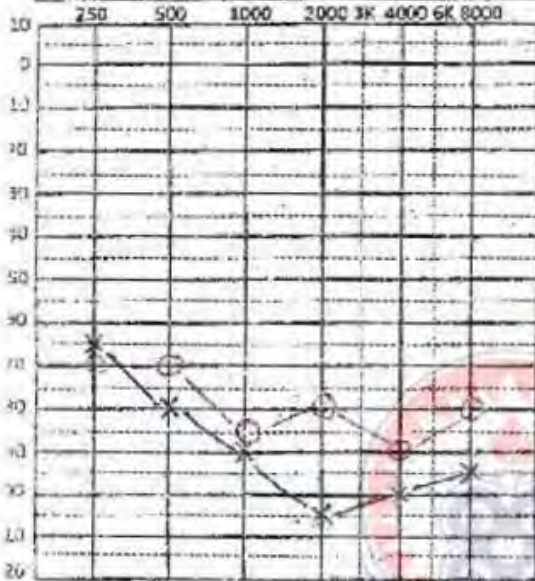
NAME: _____ SEX: Male AGE: 26 UOOR: _____

ADDRESS: HND Interior Design & Tech. L-300 TEL: _____

NATURE OF WORK: Student REFERRED BY: _____

AUDIOMETER: AD 27 EXAMINER: Godwin Nyarko

TEST RELIABILITY: ✓ GOOD FAIR POOR



AUDIOGRAM KEY

	RT	LT
A/C UNMASKED	O	⊗
A/C MASKED	⊕	⊙
E/C UNMASKED	<	>
E/C MASKED	[]
SOUND FIELD	S	

SPEECH AUDIOMETRY

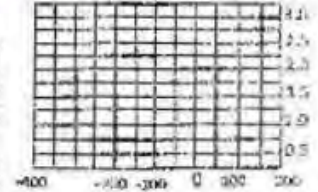
	RIGHT	LEFT
SAL		
SRT / AAST		
SRS		
UCL/MCL		

PTA RT LT
35 35 35

TYMPANOMETRY

NORMAL VALUE	RT	LT
ECV (0.2-0.6 ml)		
Peak Pressure (-150 to 100 daPa)		
Peak Compliance (1.2-2.0 ml)		

TYMPANOGRAM



OTOACUSTIC EMISSIONS

OAE	PASS	REFER
RIGHT		
LEFT		

STIMULUS		500	1K	2K	4K
ACOUSTIC REFLEX THRESHOLD					
RW	RT				
	LT				
CONRA	RT				
	LT				

OTOSCOPIC EXAMINATION

RIGHT EAR	LEFT EAR

LINEARS[®] SCORE

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

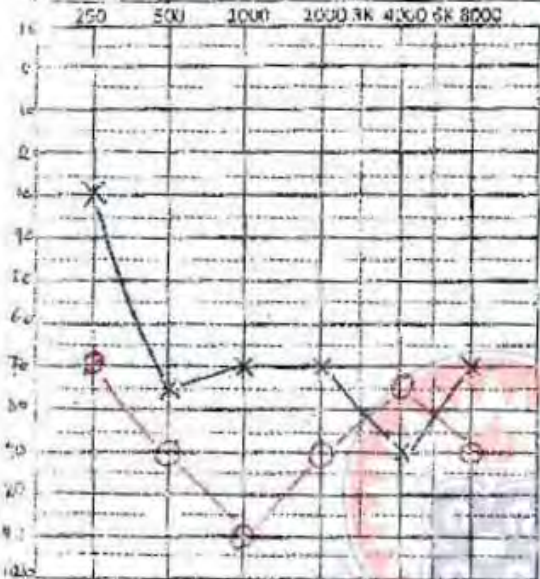
$$\begin{array}{r}
 78 \\
 + 92 \\
 \hline
 170 \div 2 = 85 \text{ dB HL}
 \end{array}$$

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDIOLOGICAL EVALUATION

DATE: 3-12-19 ID NO: _____
 NAME: _____ SEX: Female AGE: 23 DUBI: _____
 ADDRESS: HND Graphic Design L. 100 ZI: _____
 NATURE OF WORK: Student REFERRED BY: _____
 ALLOMETER: AD 27 EXAMINER: Godwin Nyarko
 TEST RELIABILITY: GOOD FAIR POOR



AUDIOGRAM KEY

	RT	LT
A/C UNMASKED	O	X
A/C MASKED	o	x
B/C UNMASKED	<	>
B/C MASKED		
SO (HRS)	S	

SPEECH AUDIOMETRY

	RIGHT	LEFT
SAL		
SRT / AAST		
SPS		
UCL/MCL		

PTA RT: 46 LT: 72

TYMPANOMETRY

NORMAL VALUES	RT	LT
ECV (0.3-2.0 ml)		
Peak Pressure (-250-100 daPa)		
Peak Compliance (0.2-2.0 ml)		



OTOACOUSTIC EMISSIONS

OAE	PASS	REFER
RIGHT		
LEFT		

STIMULUS ACOUSTIC REFLEX THRESHOLD

	300	1K	2K
RIGHT			
LEFT			
CONTRA	RT		
	LT		

OTOSCOPIC EXAMINATION

	RIGHT EAR	LEFT EAR
Observations		

LINEAR SCORE

Score	
-------	--

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

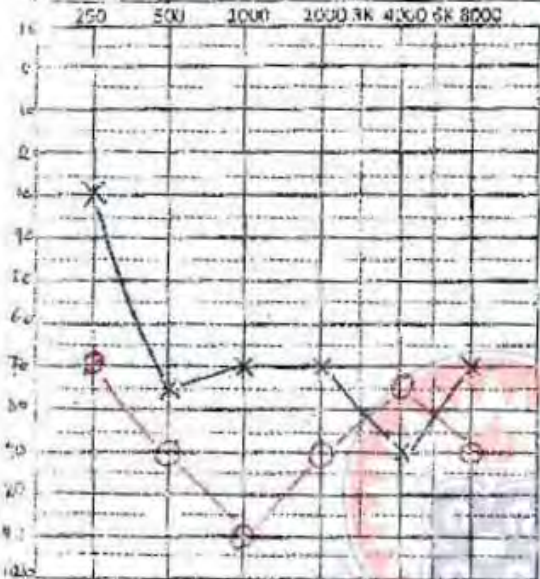
$$\begin{array}{r}
 96 \\
 + 72 \\
 \hline
 168 \div 2 = 84 \text{ dB HL}
 \end{array}$$

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDIOLOGICAL EVALUATION

DATE: 3-12-19 ID NO: _____
 NAME: _____ SEX: Female AGE: 23 DUBI: _____
 ADDRESS: HND Graphic Design L. 100 TEL: _____
 NATURE OF WORK: Student REFERRED BY: _____
 ALLOMETER: AD 27 EXAMINER: Godwin Nyarko
 TEST RELIABILITY: GOOD FAIR POOR



AUDIOGRAM KEY

	RT	LT
A/C UNMARKED	O	X
A/C MARKED	o	x
B/C UNMARKED	<	>
B/C MARKED		
SO (HRS)	S	

SPEECH AUDIOMETRY

	RIGHT	LEFT
SAL		
SRT / AAST		
SPS		
UCL/MCL		

PTA RT: 66 LT: 72

TYMPANOMETRY

NORMAL VALUES	RT	LT
ECV (0.3-2.0 ml)		
Peak Pressure (-250-100 daPa)		
Peak Compliance (0.2-2.2 ml)		



OTOACOUSTIC EMISSIONS

	PASS	REFER
RIGHT		
LEFT		

STIMULUS ACOUSTIC REFLEX THRESHOLD

	300	1K	2K
RIGHT			
LEFT			
CONTRA	RT		
	LT		

OTOSCOPIC EXAMINATION

	RIGHT EAR	LEFT EAR

LINEAR SCORE

--

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

$$\begin{array}{r}
 96 \\
 + 72 \\
 \hline
 168 \div 2 = 84 \text{ dB HL}
 \end{array}$$

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDIOLOGICAL EVALUATION

DATE: 4-12-19 ID NO:

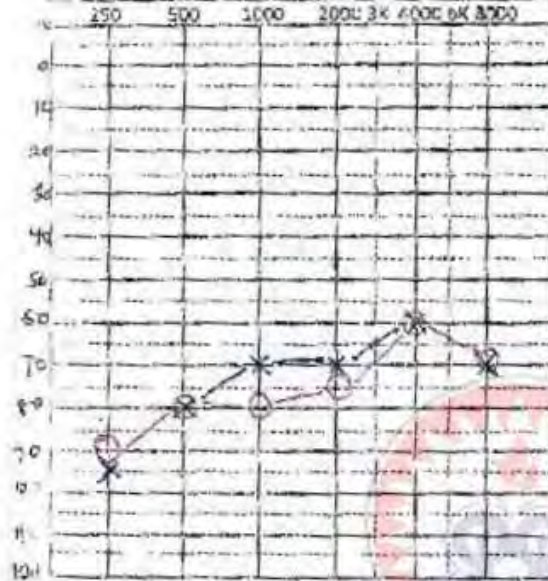
NAME: SON Male AGE 24 SEX:

ADMITT: Halls Fashion Design & Tech 1-300 TEL:

NATURE OF WORK: REFERRED BY:

A. / HOMEVER: EXAMINER: Godwin Nyarko

TEST RELIABILITY: 5000 FOUR FOUR



AUDIOGRAM KEY		SPEECH AUDIOMETRY		
	RT	LT	RIGHT	LEFT
A/C UNMASKED	0	X	SAL	
B/C UNMASKED	0	0	SRT / AAST	
A/C MASKED	0	0	SPS	
B/C MASKED	0	0	UCL/MCL	
SCOUTED	0	0		

TYMPANOGRAM		TYMPANOGRAM	
	RT	LT	
PTA	75dB HL 72dB HL		
NORMAL VALUES	RT	LT	
LCV			
Peak Pressure			
Peak Compliance			
(0.2-0.2 ml)			

OTOLACUSTIC EMISSIONS			ACUSTIC REFLEX THRESHOLD			
OAE	PASS	REFER	STIMULUS	500	1K	2K
RIGHT			RT			
LEFT			LT			
LINEARS ² SCORE			CONTRA	RT		
			LT			

OTOSCOPIC EXAMINATION

RIGHT EAR: _____

LEFT EAR: _____

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

$$\begin{array}{r}
 78 \\
 + 73 \\
 \hline
 151 \div 2 = 75.5 \text{ dB HL}
 \end{array}$$

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDIOLGICAL EVALUATION

DATE: 3-12-19 / 0000

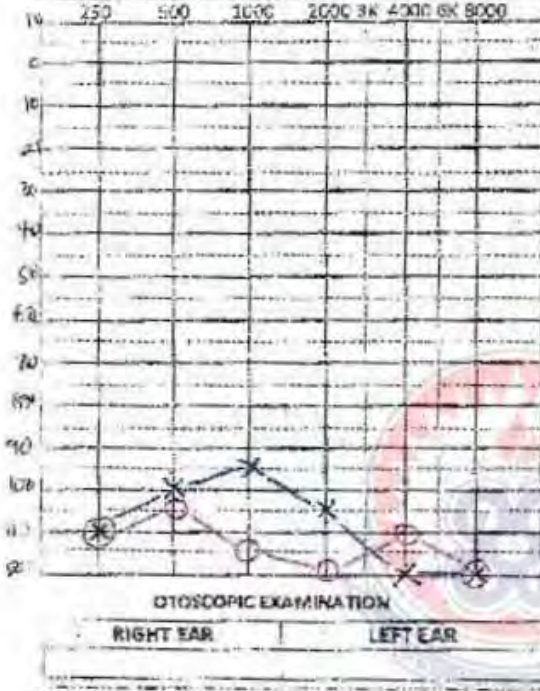
NAME: _____ SEX: Female AGE: 23 DOB: _____

ADDRESS: HNS Fashion Design and Tech. L. 200 TEL: _____

NATURE OF WORK: Student REFERRED BY: _____

ALDIOME TR: _____ EXAMINER: _____

TEST AFFILIATION: SCCH X.S POSE



AUDIOGRAM KEY

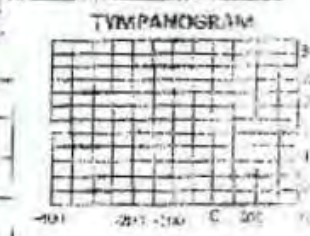
	RT	LT
A/C UNMASKED	O	X
A/C MASKED	⊖	⊖
B/C UNMASKED	<	>
B/C MASKED	[]	[]
SOUND FIELD	S	

SPEECH AUDIOMETRY

	RIGHT	LEFT
SAL		
SRT / AAST		
SRS		
UCL/MCL		

TYMPANOLOGY

	RT	LT
NORMAL VALUES		
TCV (0.2-2.0 ml)		
Peak Pressure (270-1000 daPa)		
Peak Compliance (0.2-2.0 ml)		



OTOACOUSTIC EMISSIONS

OAE	PASS	REFER
RIGHT		
LEFT		

STIMULUS ACOUSTIC REFLEX THRESHOLD

	500	1K	2K
RT			
LT			

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

$$\begin{array}{r}
 113 \\
 +100 \\
 \hline
 213 - 2 = 107.5 \text{ dB HL}
 \end{array}$$

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDIOLOGICAL EVALUATION

DATE: 3-12-19 | ID NO. _____

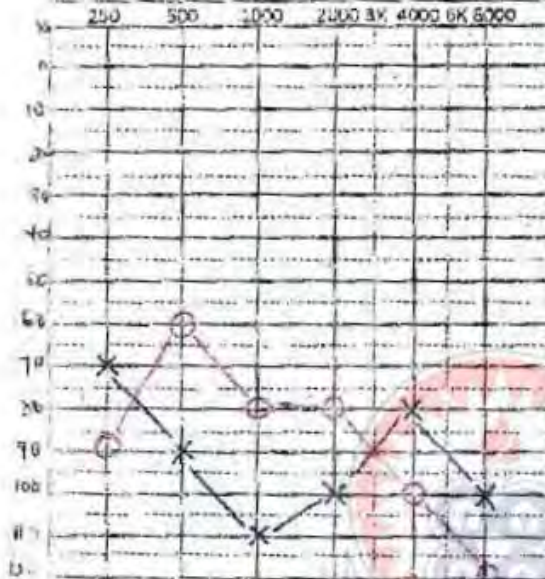
NAME: _____ SEX: Female AGE: 22 DOB: _____

ADDRESS: HND Fashion Design and Tech L 100 TEL: _____

NATURE OF WORK: Student REFERRED BY: _____

AUDIOMETER: AD 2T EXAMINER: Godwin Nyarko

PTA: RIGHT LEFT



AUDIOGRAM KEY

	RT	LT
A/C UNMASKED	0	X
A/C MASKED	A	D
B/C UNMASKED	+	+
B/C MASKED		
SOUND FIELD	S	
PTA	RT	LT
	73	100

SPEECH AUDIOMETRY

	RIGHT	LEFT
SAL		
SRT / AAST		
SPS		
UCL/MCL		

TYMPANOMETRY

MEAN VALUES	RT	LT
ECV (0.1-0.6ml)		
Peak Pressure (-250-+100 dPa)		
Peak Compliance (0.2-0.8ml)		



OTOACOUSTIC EMISSIONS

OAE	PASS	REFER
RIGHT		
LEFT		

STIMULUS ACOUSTIC REFLEX THRESHOLDS

	RT	LT
SPH		
OSQWA	RT	LT

OTOSCOPIC EXAMINATION

RIGHT EAR	LEFT EAR

LINEAR SCORES

--

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

$$\begin{array}{r}
 73 \\
 + 100 \\
 \hline
 173 \div 2 = 86.5 \text{ dB HL}
 \end{array}$$

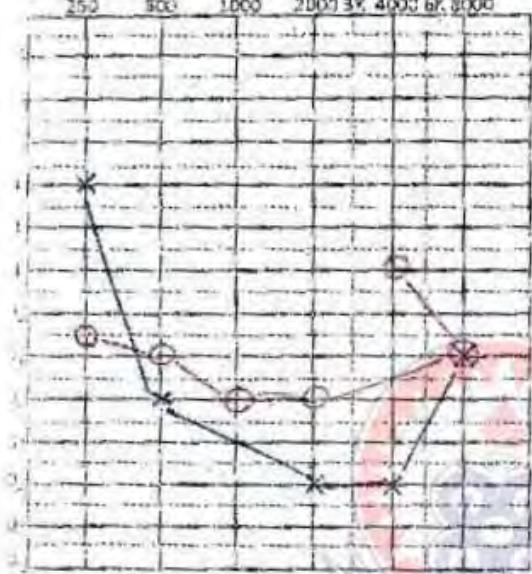
AUDIOLOGIST

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDIOLOGICAL EVALUATION

DATE 3-12-19 ID NO. _____
 NAME: _____ SEX: Female AGE: 22 DOB: _____
 ADDRESS: HND Graphic Design L. 100 TEL: _____
 TYPE OF WORK: Student REFERRED BY: _____
 AUDIOMETER: AN 27 EXAMINER: Godwin Nyarko
 HEAR. ABILITY: _____ GOOD FAIR _____ POOR _____
 250 500 1000 2000 BY 4000 BY 8000



AUDIOPHON KEY

A/C UNMASKED	○	○
A/C MASKED	△	△
B/C UNMASKED	<	>
B/C MASKED	?	?
SOUND FIELD	S	

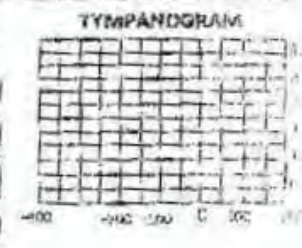
SPEECH AUDIOMETRY

SAL	RIGHT	LEFT
SRT/AAS		
SPS		
UCL/MCL		

PTA: RT 76 LT 93

TYMPANOMETRY

NORMAL VALUE	RT	LT
ECV		
TE P. SLOPE		
Peak Pressure		
E-50-100 dF		
Peak Compl. Rate		
(0.2-2.0 cm)		



OTOACOUSTIC EMISSIONS

OAE	PASS	REFER
RIGHT		
LEFT		

ACUSTIC REFLEX

STIMULUS	500	1K	2K
ACUSTIC REFLEX			
RT			
LT			
RT			
LT			

OTOSCOPIC EXAMINATION

RIGHT EAR	LEFT EAR

LINEARS[®] SCORE

--

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

$$\begin{array}{r}
 76 \\
 + 93 \\
 \hline
 169 \div 2 = 84.5 \text{ dB HL}
 \end{array}$$

CENTER FOR HEARING AND SPEECH SERVICES - CUSS



AUDIOLGICAL EVALUATION

DATE: 4-12-19 ID NO:

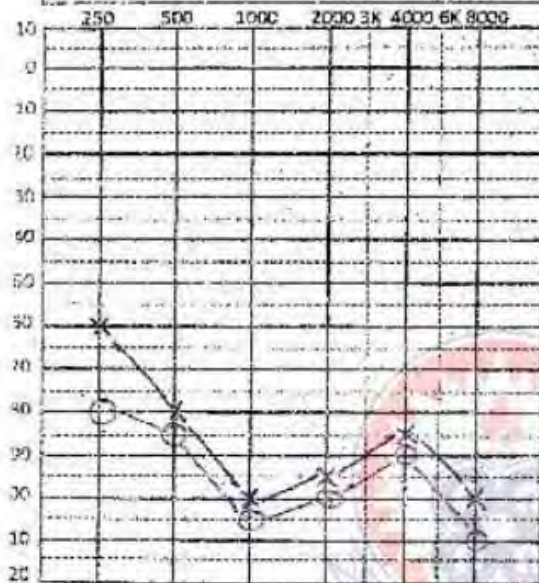
NAME: _____ SEX: Male AGE: 26 DOB: _____

ADDRESS: HND Maths and Statistics L-200 TEL: _____

NATURE OF WORK: Student REFERRED BY: _____

AUDIOMETRIST: AN 27 EXAMINER: Godwin Nyankoro

TEST RELIABILITY: GOOD FAIR _____ POOR _____



AUDIOTRAN KEY

	RT	LT
A/C UNMASKED	O	X
A/C MASKED	Δ	□
B/C UNMASKED	<	>
B/C MASKED		
SOUND FIELD	S	

SPEECH AUDIOMETRY

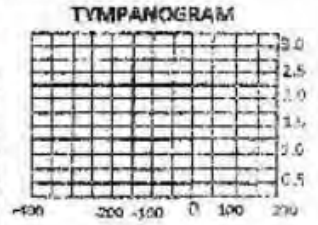
	RIGHT	LEFT
SAL		
SRT / AAST		
SRS		
UCL/MCL		

PTA

RT	LT
97	92

TYMPANOMETRY

NORMAL VALUES	RT	LT
BCV (0.2-2.0 ml)		
Peak Pressure (-150 +100 daPa)		
Peak Compliance (0.2-2.0 ml)		



OYDIACOUSTIC EMISSIONS

OAE	PASS	REFER
RIGHT		
LEFT		

STIMULUS ACOUSTIC REFLEX THRESHOLD

	500	1K	2K	4K
IPR				
CONTRA				

OTOSCOPIC EXAMINATION

RIGHT EAR	LEFT EAR

LINEARS[®] SCORE

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

$$\begin{array}{r}
 97 \\
 + 92 \\
 \hline
 189 \div 2 = 94.5 \text{ dB HL}
 \end{array}$$

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDILOGICAL EVALUATION

DATE: 4-12-19 ID NO: _____

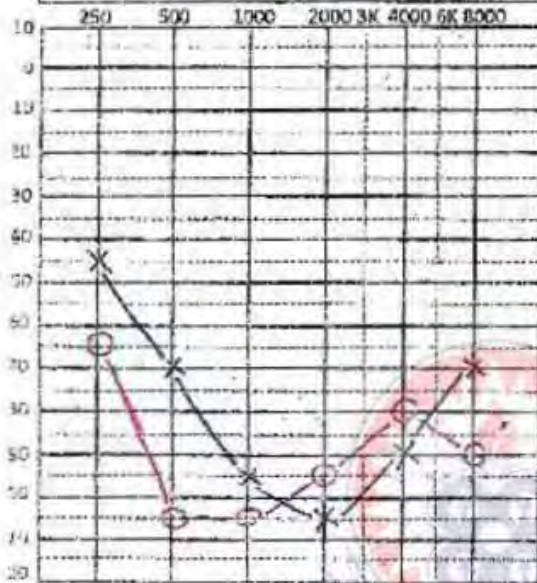
NAME: _____ SEX: Male AGE: 27 JOB: _____

ADDRESS: HND Building Construction L-200 TEL: _____

NATURE OF WORK: Student REFERRED BY: _____

ALDIOMETER: AD 27 EXAMINER: Godwin Nyarko

TEST RELIABILITY: GOOD FAIR POOR



AUDIOGRAM KEY

	RT	LT
A/C UNMASKED	O	X
A/C MASKED	B	□
B/C UNMASKED	<	>
B/C MASKED	[]
SOUNDFIELD	S	

PTA: RT 45, LT 45

SPEECH AUDIOMETRY

	RIGHT	LEFT
SAL		
SRT / AAST		
SRS		
UCL/MCL		

TYMPANOGRAM

NORMAL VALUES	RT	LT
SCV (0.2-3.0 ml)		
Peak Pressure (-350 to 200 mmHg)		
Peak Compliance (0.2-3.0 ml)		



OTOACOUSTIC EMISSIONS

OAE	PASS	REFER
RIGHT		
LEFT		

STIMULUS ACOUSTIC REFLEX THRESHOLD

	500	1K	2K	4K
RT				
LT				
CONTRA				
RT				
LT				

OTOSCOPIC EXAMINATION

RIGHT EAR	LEFT EAR

LINEARS[®] SCORE

--	--

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

100
+ 90

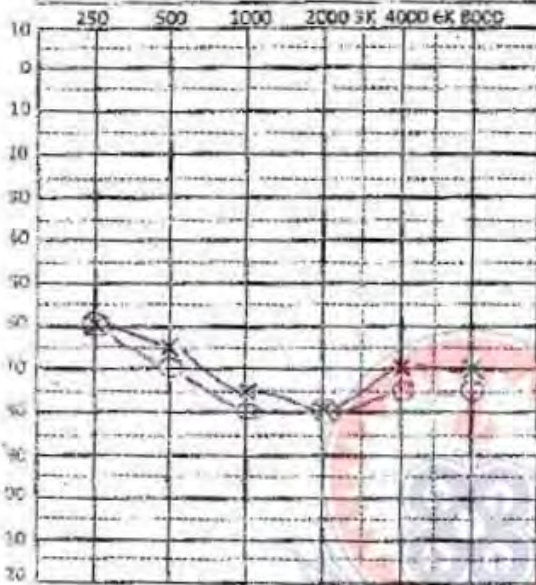
192 ÷ 2 = 96 dB HL

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDIOLOGICAL EVALUATION

DATE: 4-12-19 ID NO. _____
 NAME: _____ SEX: Male AGE: 22 IDB: _____
 ADDRESS: HNA Maths and Statistics L:100 TEL: _____
 NATURE OF WORK: Student REFERRED BY: _____
 AECOMETER: AD 27 EXAMINER: Godwin Nyarko
 TEST INABILITY: GOOD FAIR POOR



AUDIOGRAM KEY

A/C UNMASKED	○	×
A/C MASKED	⊗	⊙
B/C UNMASKED	◀	▶
B/C MASKED		
SOUNDFIELD	S	

SPEECH AUDIOMETRY

	RIGHT	LEFT
SAL		
SRT / AAST		
SRS		
UCL/MCI		

PTA RT: 77 dB HL LT: 73 dB HL

TYMPANOGRAM

NORMAL VALUES	RT	LT
CCV		
Peak Frequency (-150 to 150 dB Pa)		
Peak Compliance (0.2 to 0 ml)		



OTOACOUSTIC EMISSIONS

OAE	PASS	REFER
RIGHT		
LEFT		

STIMULUS ACOUSTIC REFLEX THRESHOLD

	500	2K	2K	8K
RT				
LT				
CONRA				
RT				
LT				

OTOSCOPIC EXAMINATION

RIGHT EAR	LEFT EAR

LINEARS[®] SCORE

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

77
 + 73

 150 - 2 = 148 dB HL

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDIOLOGICAL EVALUATION

DATE: 4-12-19

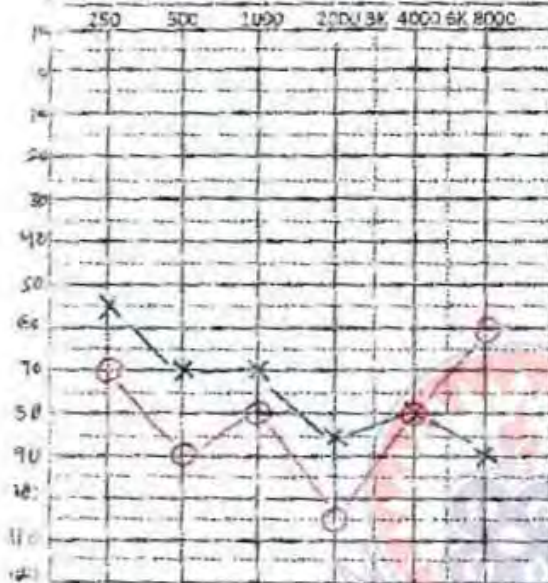
NAME: _____ SEX: Female AGE: 21 JOB: _____

COURSE: HND Fashion Design & Tech. I. 2001 FEI: _____

STATUS: Student REFERRED BY: _____

AUDIOMETER: AD 27 EXAMINER: Godwin Nyarko

TEST AFFILIATION: SPOI ASR FODR



AUDIOGRAM KEY

A/C UNMASKED	○	×
A/C MASKED	△	□
B/C UNMASKED	<	>
B/C MASKED		
SOUND FIELD	S	

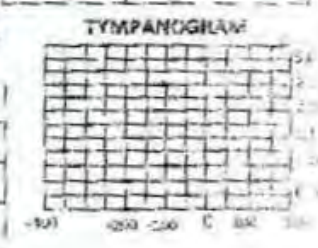
PTA: 90 90

SPEECH AUDIOOMETRY

SAL	
SRT / AAST	
SRS	
UCL/MCL	

TYPANOMETRY

NORMAL VALUES	RT	LT
TCV		
Peak Pressure		
Real Impedance		
Admittance		



CYCOACOUSTIC EMISSIONS

OAE	PASS	REFER
RIGHT		
LEFT		

ACUSTIC REFLEX

STIMULUS	500	1K	2K
ACUSTIC REFLEX			
RT			
LT			

OTOSCOPIC EXAMINATION

RIGHT EAR: _____

LEFT EAR: _____

LINEAR SCORE

RT	
LT	

INTERPRETATION OF RESULTS / RECOMMENDATION(S):

$$\begin{aligned}
 &90 \\
 &+ 75 \\
 \hline
 &165 \div 2 = 82.5 \text{ dBHL}
 \end{aligned}$$

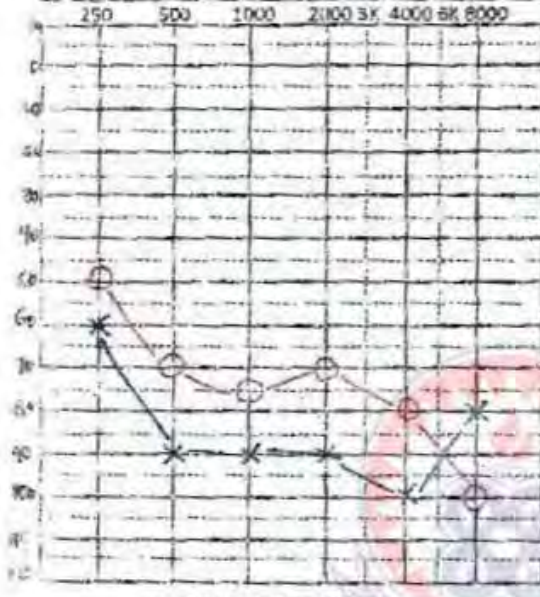
Audiologist

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDIOLOGICAL EVALUATION

DATE: 4-12-19
 NAME: [Blank] SEX: Male AGE: 21
 ADDRESS: HND ICT L-100
 NATURE OF WORK: Student REFERRED BY:
 AKA/NUMBER: AN 27 EXAMINER: Godwin Nyirko
 TEST RE: [Blank] LEFT: [Blank] RIGHT: [Blank] PAIR: [Blank] FOCUS: [Blank]



AUDIOGRAM KEY

A/E UNMASKED	RT	LT
A/E MASKED	O	X
E/C UNMASKED	C	D
E/C MASKED	I	J
SCHEPPEL	S	

SPEECH AUDIOMETRY

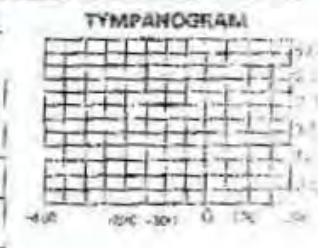
	RIGHT	LEFT
SAL		
SRT / AAST		
SRS		
UCL/MCL		

TYPANOMETRY

PTA	RT	LT
	32	32

TYPANOMETRY

NORMAL VALUES	RT	LT
SCV		
10-20 ml		
Peak Compliance		
100-150 cm ²		
Peak Compliance		
10-20 ml		



OTOACUSTIC EMISSIONS

OAE	PASS	REFER
RIGHT		
LEFT		

ACOUSTIC REFLEX THRESHOLD

STIMULUS	500	1K	2K
ACOUSTIC REFLEX THRESHOLD			
RT			
LT			

OTOSCOPIC EXAMINATION

RIGHT EAR	LEFT EAR

LINEARS[®] SCORE

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INTERPRETATION OF RESULTS / RECOMMENDATION(S)

$$\begin{array}{r}
 72 \\
 + 90 \\
 \hline
 162 \div 2 = 81 \text{ dB HL}
 \end{array}$$

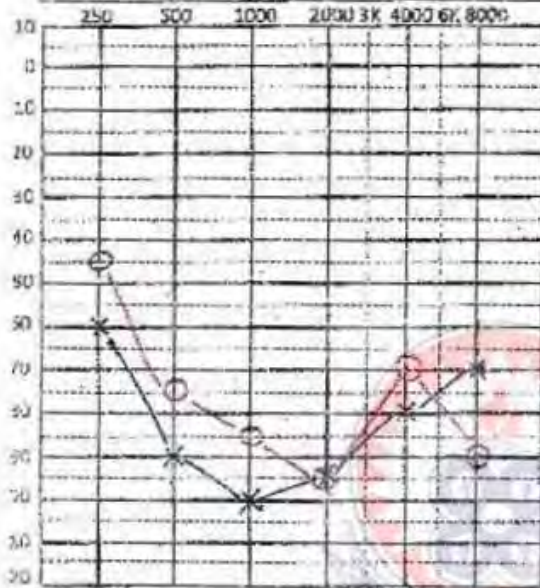
AUDIOLOGIST

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUTOLOGICAL EVALUATION

DATE: 4-12-19	ID NO:	SFC: female	AGE: 23	DOB:
NAME:	ADDRESS: HND Hotel, Catering & Institutional Mgt L-107	TEL:	REFERRED BY:	EXAMINER: Godwin Nyarko
NATURE OF WORK: Student	AUDIOMETER: AD 27	TEST SENSITIVITY: GOOD	FMR:	HAIR:

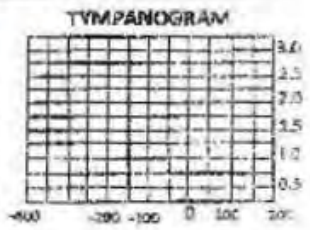


	RT	LT
A/C UNMASKED	O	X
A/C MASKED	Δ	□
B/C UNMASKED	<	>
B/C MASKED	()
SOLIDFIELD	S	

	RIGHT	LEFT
SAL		
SRT / MAST		
SRS		
UCL/MCL		

	RT	LT
	85	95

NORMAL VALUES	RT	LT
ECV (0.2-2.0 ml)		
Peak Pressure (-150 to 100 dzPa)		
Peak Compliance (0.2-2.0 ml)		



OAE	PASS	REFER
RIGHT		
LEFT		

STIMULUS	500	1K	2K	4K
RT				
LT				
CONTRA				

RIGHT EAR	LEFT EAR

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INTERPRETATION OF RESULTS / RECOMMENDATION(S):

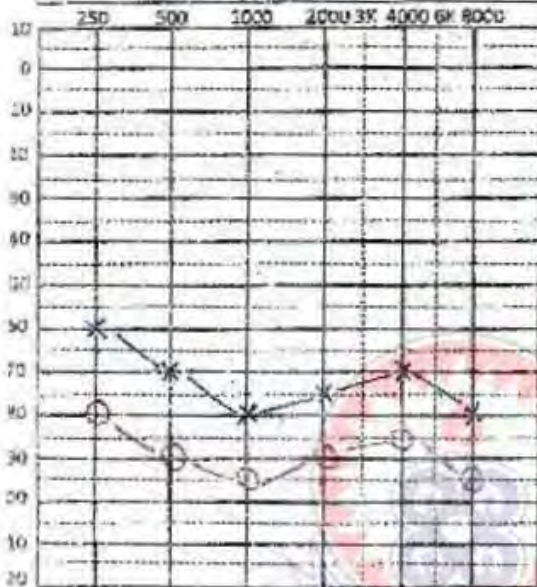
$$\begin{array}{r}
 85 \\
 + 95 \\
 \hline
 180 - 2 = 90 \text{ dB HL}
 \end{array}$$

CENTER FOR HEARING AND SPEECH SERVICES - CHSS



AUDIOLOGICAL EVALUATION

DATE: 4-12-19	ID NO:	SEX: Female	AGE: 22	DOB:
NAME:		ADDRESS: HNS Hotel Catering & Institutional Mgt L-100		
NATURE OF WORK: Student		REFERRED BY:		
AUDIOMETRY: AD 27		EXAMINER: Godwin Nyarko		
TEST RELIABILITY: GOOD <input checked="" type="checkbox"/> FAIR <input type="checkbox"/> POOR <input type="checkbox"/>				

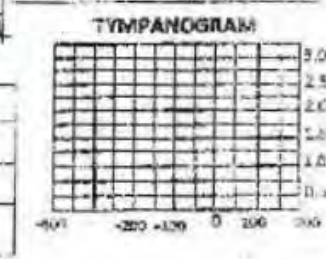


	RT	LT
A/C UNMASKED	0	X
A/C MASKED	⊖	⊖
B/C UNMASKED	<	>
B/C MASKED	[]	[]
SOUND FIELD	S	

	RIGHT	LEFT
SAL		
SRT / AAST		
SRS		
UCL/MCL		

	RT	LT
92 dB HL		

NORMAL VALUE	RT	LT
ECV (0.3-2.0 ml)		
Peak Pressure (-150 +100 daPa)		
Peak Compliance (0.3-2.0 ml)		



	OAE	PASS	REFER
RIGHT			
LEFT			

	500	1K	2K	4K
RT				
LT				

	RIGHT EAR	LEFT EAR

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INTERPRETATION OF RESULTS / RECOMMENDATION(S):

$$\begin{array}{r}
 92 \\
 + 75 \\
 \hline
 167 - 2 = 83 \text{ SdBHL}
 \end{array}$$