Role of interpreting in the inclusion of deaf students in tertiary education in Ghana

Daniel Fobi

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The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

Dedication

I dedicate this work to Joyce, Nhyira and Nhyiraba. Thank you for the sacrifices that you have to make because I was away. I hope to make up for the lost time. I also dedicate to my parents Mr and Mrs Fobi who have always been there for me throughout my life. My final dedication is to my uncle, Mr Wilberforce Oduro who accommodated, sheltered and fed me throughout my study in Leeds. God bless you all.

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Abstract

This study takes a sociocultural approach to the examination of how interpreters mediate interaction between deaf students and lecturers in tertiary classrooms in Ghana. The majority of deaf students educated in these classrooms underachieve in all courses when compared with their hearing colleagues. However, there is globally a dearth of research investigating the role of interpreters in mediating the interactions in these contexts.

This study adopted a mixed-methods approach to investigate participants' understandings of inclusion and interpreting. Sixty-six deaf students were surveyed and 33 deaf students, lecturers, interpreters and heads of departments were interviewed one-to-one to provide the context for the study. Ten interpreters were interviewed to ascertain the challenges of interpreting and the management strategies employed in the classrooms. Additionally, videos of interpreters mediating the interaction between deaf students and lecturers in the classrooms were multimodally analysed to establish the participants' enactment of inclusion for deaf students in tertiary classrooms.

The findings of this study indicated that deaf students had positive expectations and were ready to learn through interpreting in tertiary classrooms. Again, the participants expressed good understandings of inclusion based on their expectations and practices in these contexts. The study also found that interpreters encountered various forms of challenges and employed varied management strategies. Furthermore, lecturers who involved themselves in interpreting promoted more positive classroom interactions than those who didn't engage in interpreting. Again, interpreters who worked as a team could manage their challenges better and had fewer omissions than interpreters who worked alone irrespective of their proficiencies. Based on these findings recommendations are made for future studies, and a model of inclusion for deaf students is proposed.

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CODAS	Children of Deaf Adults
DC-S	Demand Control Schema
DHH	Deaf and Hard of Hearing
EHI	Education for the Hearing Impaired
ELAN	EUDICO Linguistic Annotator
GhSL	Ghanaian Sign Language
JHS	Junior High School
LMIC	Low and Middle Income Countries
RCSSN	Resource Centre for Students with Special Needs
SpEd	Special Education
SHS	Senior High School
UEW	The University of Education, Winneba

Chapter 1

Introduction

1.1 The rationale for the study and research questions

The overarching aim of this study is to examine how sign language interpreters mediate interaction between deaf students and lecturers in tertiary classrooms. It analyses deaf students, lecturers, interpreters, and heads of departments socio-cultural understandings of inclusion and interpreting in tertiary classrooms; the demand and control option considerations of interpreting in the classrooms; and the nature of interactions between deaf students, lecturers and interpreters within the multimodal (Norris, 2004) communicative context of the classrooms. Mediation is conceptualised in this study as a complex communicative complex process of interpreting the interaction between deaf students and lecturers in tertiary classrooms (Oppong et al., 2016). Demands are the challenges interpreters encounter in tertiary classrooms (as well as other interpreting settings) whilst interpreting, and control options are the resources that interpreters employ to manage those demands (Dean and Pollard, 2013).

The study draws on the social-cultural approach that stresses the significance of social interactions in achieving learning outcomes (Cole and Engeström, 1994, Lave and Chaiklin, 1993, Vygotsky, 2012, Vygotsky, 1978). In the socio-cultural theory, learning occurs when a more knowledgeable person mediates the interaction between the learner and what needs to be learned (Snowman et al., 2012). Thus, mediation happens when an experienced person interprets a child's learning behaviour and assists the child in transforming the behaviour into internal symbolic representations that have the same meaning to everyone (child and others). Learning in this study is conceptualised as a communicative process through which knowledge is co-constructed through the collaborative supports of all the actors involved using available resources and expertise (Heo et al., 2010, Vygotsky, 2012, Zhang et al., 2007). Though the socio-cultural theory usually is associated with early development,

ideas from it could be used to analyse the mediation role of interpreters in tertiary classrooms for deaf students and lecturers (César and Santos, 2006, Daniels, 2001).

In the tertiary classrooms for deaf learners, interpreters play an integral role in mediating the classrooms' interactions. For example, lecturers often interact with the students using spoken languages, and interpreters convert these spoken languages into sign languages for deaf students and vice versa. So, in this context the notion of mediation does not rely only on the experienced (lecturers and interpreters) for learning to occur, but also the student must be ready and supportive of the classroom activities, and the environment within which the learning occurs should also embrace the students' diversities and be made conducive for learning. Therefore, a collaboration between the deaf students, lecturers and interpreters in the classroom will facilitate the mediation of the interaction between the deaf students and the lecturers and ultimately help the student to achieve their learning outcomes (César and Santos, 2006, Kugelmass, 2006). This implies that, though all the actors in tertiary classrooms are autonomous and come from different socio-cultural backgrounds, they are required to work together because their expertise put together will help support the deaf students achieve their learning outcomes (Vygotsky, 1978). Deaf students who are the centre of inclusion in these contexts need not only be familiar with how to use interpreting services (Maroney et al., 2020, Maroney et al., 2018a, Maroney et al., 2018b, Maroney et al., 2016), they also need to be academically ready for learning in tertiary classrooms (de Wit and Sluis, 2014, Leeson, 2012). Lecturers who are the leaders of the courses taught in tertiary classrooms, also need to know about teaching learners of diverse learning needs (Darroch and Marshall, 1998, Marschark et al., 2005, Napier, 2002) to support the students in reaching optimal learning outcomes. Interpreters on the other hand need not only understand their professional ethics of interpreting, but they also need to be familiar with inclusion and their roles in supporting deaf students achieve their learning outcomes (Bontempo, 2012, Leeson, 2012). The institutional settings should also be responsive to the diverse learning needs of the students and be supportive of their inclusion to facilitate learning in these contexts (Russell and McLeod, 2009, Winston, 2004).

The roles of interpreters who serve as mediators of the interaction in these contexts have been explained using different paradigms ranging from helpers, machines and bi-lingual bi-cultural models (Napier, 2002, Wilcox and Shaffer, 2005). These models focus on the roles interpreters play in their assignments; however, they do not present a way of analysing interpreting in tertiary classrooms. A framework that considers the way interpreters execute their assignments is developed by Dean and Pollard (2013) who proposed the demands and control schema (DC-S) based on the work of Karasek Demand-Control Theory (Karasek, 1979, Karasek et al., 1990). The DC-S suggests that, based on the demands interpreters encounter in their assignments, interpreters choose control options to manage those demands in their contexts (Dean and Pollard, 2001, Dean and Pollard 2005, Dean and Pollard, 2011, Dean and Pollard, 2004, Dean and Pollard, 2013). This framework has been used to analyse interpreting in different settings such as conferences, court, television and student viva defenses (Bentley-Sassaman and Dawson, 2012, Bontempo, 2012, De Meulder et al., 2018, Moody, 2011, Nicodemus et al., 2014, Trine, 2013), but little has been done with the framework to analyse the inclusion of deaf students in tertiary classrooms where interpreting plays an integral mediating role. In analysing the role of interpreting in mediating the interaction between deaf students, lecturers, and interpreters, Roy (1999) did a discourse analysis which did not focus on developing the understanding of inclusion and the mediating role of interpreters in these contexts. A theoretical gap that exists in the inclusive education literature is that there has not been a framework that explains tertiary inclusion for deaf students considering the central role of interpreting in the process in the presence of different cultural and social dynamics.

This study examines the existing research through the socio-cultural lens to identify various roles the actors can play to support inclusion for deaf students in tertiary classrooms. From this viewpoint, the research questions that will be addressed in this study are:

1. How do interpreters mediate interaction between deaf students and lecturers in tertiary classrooms?

a. What expectations do deaf students have on interpreting, and what are their readiness for learning through interpreting in tertiary classrooms?
b. What understandings do deaf students, interpreters, lecturers, and heads of departments have on inclusion?
c. Given the actors' understandings of inclusion, what are the demands and control considerations of interpreting in the classrooms?
    i. What are the demands of interpreting in the classrooms?
    ii. What control options are employed to manage those demands?
d. What is the nature of the classroom interactions between deaf students, lecturers and interpreters?
    i. What collaboration exists between the deaf students, lecturers and interpreters in facilitating the classroom interactions?

My motivation for this study has emerged from my experience as a teacher for the deaf, and an interpreter in different settings including tertiary classrooms in Ghana. I had taught and interpreted for deaf students at the basic and tertiary levels for over 12 years. This exposure gave me a wide range of experiences involving deaf students learning and interpreting. During this period, the deaf students, lecturers, interpreters, and heads of departments (actors) expressed various concerns about the students' academic achievements. A worry of the actors was that most deaf students performed at a level which was not comparable to their hearing colleagues at the tertiary level. Though some deaf students succeeded in line with their hearing peers within these settings, as a cohort they were consistently failing to achieve the same academic levels as the general population (Salter et al., 2017, Salter, 2015). For example, in a staff meeting at the Department of Special Education, University of Education, Winneba (UEW) on 16th December 2016, the Dean of Faculty of Educational Studies, Head of Department, lecturers, and interpreters raised concerns about the challenges deaf students encounter in matching their hearing colleagues academically. They stressed how lecturers of other departments in the university had expressed worries about the academic achievements of the deaf students, and apparently concluded that the students' inability to perform was as a result of the inadequate proficient interpreters mediating the interactions between the students

and their lecturers. However, there was less emphasis on the need for an empirical study to establish what might account for the low academic achievements of deaf students at the tertiary level.

I came into this study with the aim of analysing the predicting factors of deaf students' academic achievements in tertiary institutions. As I developed my thinking through literature reading, supervision meetings, workshops, seminars, and audited research and deaf education modules, I observed that there were global concerns about the learning of deaf students in mainstream classrooms (Marschark et al., 2005, Marschark et al., 2004, Salter, 2015). However, there is a paucity of studies that examined interpreters mediating the interaction between deaf students and lecturers in tertiary classrooms. Few studies in the literature had examined the perspectives and experiences of deaf students (Adu, 2016, Magogwa, 2008, Mantey, 2011, Mertens, 1989, Oppong et al., 2018, Schick et al., 2012), interpreters (Edwards et al., 2005, Fatahi et al., 2005, Johnson et al., 2009, Schwenke, 2012), teaching assistants (Farrell et al., 2010, Johnson et al., 2009, Salter et al., 2017, Schwenke, 2012), and teachers (Lampropoulou and Padeliadu, 1997). However, no single study had examined the actors' socio-cultural understandings of tertiary inclusion, the demands and control options of interpreting, and subsequently ran a multimodal analysis of the interactions between deaf students, lecturers and interpreters in the classrooms in these contexts. This study will develop a new knowledge in the literature on inclusion for deaf students in tertiary classrooms, and the central role of interpreting in this process. The next section of this chapter describes my role as a hearing researcher researching about deaf people.

1.1.1 My position as a hearing researcher conducting studies on the Deaf community

It is important that in conducting studies with, and about the Deaf community, I make my position clear (Graham and Horejes, 2017, Napier and Leeson, 2016, Young and Temple, 2014). This study was developed based on my axiological position as an interpreter, teacher of the deaf and a hearing researcher. Though as an interpreter and a teacher of the deaf I had an understanding of interpreting in tertiary institutions

in Ghana that could help me access information from the participants, however my familiarity with the context could have led to biasness in data collection and interpretation. A researcher's position enabled me to objectively use research procedures and ethics to study deaf students, lectures, interpreters and heads of departments to examine issues that I would have overlooked because they seemed "normal", and gave explicit expositions and reports on such information (Sarkar, 2010). As an interpreter who had worked in the context of the study for a while, I was quite familiar with the roles of interpreters in the study. Since I had taught deaf students in the tertiary contexts for over nine years, I was also familiar with some of the issues the lecturers in this study raised. However, during the time of this study, I was a post-graduate researcher who did not know much about current situation among the interpreters and lecturers involved in the study, and so I followed ethical research procedures to reduce my biasness that could emerge in the data collection and interpretations.

I was a hearing researcher among the deaf students since I had no lived experiences of being deaf (Napier and Leeson, 2016, Young and Temple, 2014). Among the heads of departments, I was a researcher since I had never served as a head of department. Being a hearing researcher could potentially affect the way I viewed deaf students and how I conducted the study although I had been a hearing person who has learned about the Deaf community in Ghana and shared their ideas, language, and culture (Napier and Leeson, 2016, O'Brien and Emery, 2014, Young and Temple, 2014). Deaf community refers to a community of individuals who are deaf and use a common language (Ghanaian Sign Language), and culture (way of life which includes marrying among themselves and attending special schools for the deaf) (Napier, 2002, Napier and Leeson, 2016, Oppong, 2003, Oppong, 2006).

To avoid the potential biases on my part in researching the participants, I made sure I allowed each participant to freely express their views and used the views for the analysis. This allowed the participants to express their understanding of tertiary inclusion and the resulting demands and control options that interpreters encounter in

the classrooms. I also did a multimodal analysis of the classroom interactions to investigate the participants' enactments of their understandings of inclusion.

My position influenced my thinking about deaf students. My understanding, borne out of my position within the Deaf community, was that deaf students irrespective of their hearing status (mild, moderate, severe, or profound), have the right to belong to the Deaf community. Belonging to this community means that deaf students have culturally accepted norms of behaviour and values based on their experiences in the Deaf community. Such students may have hearing assistive devices and other communication preferences, but once they see themselves as part of the Deaf cultural group, they learn to communicate using sign language (Graham and Horejes, 2017, Kusters, 2015, Napier, 2002, Napier and Leeson, 2016, O'Brien and Emery, 2014, Young and Temple, 2014). My position had also shaped my understanding of what inclusion for deaf students is. My understanding is that though deaf students belong to a cultural group, they are heterogeneous individuals with different learning goals and needs. So, to consider their diversity in tertiary classrooms, there should be educational plans and supports that aim at developing and helping each learner achieve their set educational goals and outcomes through the collaborative supports of the actors in these contexts using available resources and expertise. I think that every actor plays an important role in the inclusion of deaf learners; however, looking at their roles as a teacher of the deaf and an interpreter alone will not allow certain pertinent information, which is often overlooked because of familiarity with such phenomenon, and the thought that such information is common sense to come out well. A researcher's role helped in bringing out such information and highlighted its relevance to the research community. Again, being an interpreter and teacher of the deaf gave the sense of direction on "where" to look to get relevant information. A researcher's position guided me on "how" to look, "what" to look for, and "who" to look for to get data that considered every perspective that counts.

1.2 Significance of the study

This study is significant in four ways:

1. In the low and middle income countries (LMIC) context, particularly in Ghana none of the studies reviewed had analysed the role of interpreting in tertiary classrooms. This study examines new questions concerning the role of sign language interpreting in the inclusion of deaf students in tertiary classrooms in Ghana, where the development of interpreting in higher education is a new practice. This makes a new contribution to understandings of educational interpreting in the LMICs.
2. This study developed a methodology that enabled the participants to present their understandings of inclusion (in theory), and the enactment of those understandings in the classrooms (practice) so that a broader perspective could be generated from findings of the study to reflect the holistic tertiary inclusion.
3. This study examines and adds the demand control considerations of interpreting in tertiary classrooms in Ghana to the existing body of knowledge in the literature from the LMIC contexts.
4. Findings of this study revealed the nature of interactions between deaf students, lecturers, and interpreters in tertiary classrooms which constituted best practice to serve as a blueprint for other actors in a similar contexts.

1.3 Operational definition of terms

The following terminologies were used throughout this study, and their meanings have been explained below:

1.3.1 Deaf students

According to the social model of disability, the societies within which deaf individuals find themselves create a disabling environment to them and when such challenges or barriers are catered for, they will achieve in life just like any other hearing person (Napier, 2002, Napier and Leeson, 2016, Young and Temple, 2014). In this study, the

use of "D" and “d” deaf align with linguistic and social perspectives on deafness as a disability, Deaf community and identity of young deaf people and learners. The uppercase “D” Deaf will be used for the community of deaf individuals and the lowercase "d" deaf will be used to refer to individuals who belong to this community. To conceptualise deafness in this study, I adapted the perspective of the social model by adding that deaf students belong to a cultural group that has their values and culturally accepted norms. So, if the societies accept deaf people and offer the necessary support and right to education in the form of helping them reach their educational goals, they will excel in the same way that any student does. In this study deaf students will be used to refer to tertiary students who belong the Deaf community and have accepted norms of behaviour and values based on shared experiences and learn through interpreting. Such a student may choose to have a hearing assistive device but once they see themselves as part of the Deaf cultural group and learn through interpreting, they are considered to be part of this study.

1.3.2 Inclusion

Inclusion as a concept in education has been widely defined in different ways. It has been explained to mean a "complete acceptance of a student with a disability or other marginalized students in a regular class, with appropriate changes being made to ensure that the student is fully involved in all class activities." (Ashman and Elkins, 2009, p. 41). Van Kraayenoord et al. (2000, p. 89), defined inclusion as "the practice of providing for students with a wide range of abilities, backgrounds, and aspirations in regular school settings". Furthermore, inclusion is "the classroom in which new pedagogical approaches place learners at the centre of educative process and facilitate the process of learning to enable all students to flourish and reach their maximum potential" (Liasidou, 2015, p. 89). The learners should be placed at the centre of inclusion, and all available resources and expertise should be utilised to help them achieve their educational goals based on their unique learning needs. Inclusion should be seen as a method of educating all learners of diverse needs in the same classroom but not as an approach that attends to the needs of a particular cohort of students. Such a method should aim at helping individual students to reach

their unique educational outcomes by providing appropriate support and strategies to meet their unique learning needs.

1.3.3 Interpreting

Interpreting is used to refer to the process whereby sign language interpreters convert spoken languages in tertiary classrooms into sign language and vice versa. Spoken languages from lecturers and hearing students are interpreted into sign language for deaf students. In the same way, sign languages from deaf students are interpreted into spoken languages for hearing consumers in the classroom. Therefore, in the context where deaf students learn through interpreting with hearing students in the same classroom, interpreting plays a mediation role between the deaf students and the hearing actors. Vygotsky (1978) conceptualised mediation as the process whereby an experienced adult (mediator) facilitates children's language development in the social-cultural context (Pathan et al., 2018, Turuk, 2008, Vygotsky, 1978). By Vygotsky's explanations of mediation, no child is able to develop language without the guide of an experienced adult. This description from Vygotsky is true to some extent; however, irrespective of the adult's experience, if the child is not ready for learning language, and is unable to collaborate with the adult in the process, no language development will occur (Matusov and Hayes, 2000, Piaget, 1995). The idea of mediation from the Vygotskian perspective was borrowed and extended in this study. Interpreting is analysed as a tool for mediating inclusion for deaf students in tertiary classroom. The deaf students, mediators (interpreters), and lecturers in tertiary classrooms work together to achieve their shared goal. In tertiary classroom settings, when the hearing person speaks (encode) their message in English (or other Ghanaian languages), interpreters breakdown the content of the message in the spoken languages (decode) and find appropriate signs and signing styles to carry the same content in sign language to the deaf students (Ingram, 1974, Wilcox and Shaffer, 2005). The process is the same but in a reversed way when the deaf person takes a turn. This means that interpreting serves as a mediator for facilitating inclusion for deaf students in the tertiary level.

Interpreters are required to be experienced and proficient to help achieve the desired goal of learning for deaf learners in tertiary classroom (Bontempo, 2012, Leeson, 2012, Napier, 2011, Oppong et al., 2018, Vygotsky, 1978), and can accurately transform one form of language into the other whilst keeping the meaning and content of the messages intact (Fobi and Oppong, 2019, Leeson, 2012, Napier, 2011). However, irrespective of the experiences of the interpreters who mediate inclusion in tertiary classrooms, the deaf students, and lecturers have collaborative roles to play to set up the best practices in the classroom to ensure that the learning outcomes of the students are accomplished. The deaf students and lecturers need to be ready for interpreting in the classrooms and should provide the necessary support which promotes inclusion.

1.3.4 Multimodal analysis

Multimodal analysis is a methodological framework that allows for the combined analysis of the verbal and nonverbal expressions of deaf students, lecturers, and interpreters in tertiary classrooms (Norris, 2004). In this study I used it to analyse the interactions of deaf students, lecturers and interpreters in tertiary classrooms. I focussed on the synchronicity of each of the participant's behaviours in the interactions, collaborative support, team interpreting and interpreters' omissions and lag times[1].

1.4 Thesis outline

This thesis was written in ten chapters. Chapter 1 of the study presents the introduction to the study. It focusses on the rationale for the study, background to the study, and the significance of the study. Chapter 2 describes the current context of deaf education and its development in Ghana. It gives the reasons why this study is

[1] Lag time is the time that interpreters use to process the information received (spoken or signed) before they can render appropriate interpretations. It often takes some few seconds depending on the interpreters and their expertise and the time the use in processing the information.

significant in the tertiary context and the various levels of education that admit deaf students and the inclusion in tertiary institutions for deaf students. The chapter concludes by problematising the inclusive context in relation to the literature and research questions. Chapter 3 presents the review of literature on tertiary inclusion and interpreting. It brings out the contributions of the various actors of interpreting from the research perspective to promote inclusion at the tertiary level and the demand and control option considerations of interpreting. The chapter discusses the gaps in the literature and how this study addresses those gaps leading to the development of the research questions. Chapter 4 reviews literature on the interactions between deaf students, lecturers and interpreters in the classroom. Chapter 5 describes the methodological approach used in the study. It highlights the various methods used in responding to the research questions in the study and the methodological gaps identified in the literature.

Chapter 6 analyses data on the socio-cultural understandings of inclusion and interpreting in tertiary classrooms. Chapter 7 presents findings and the analysis of the demands and control options of interpreting encountered in the classrooms. Chapter 8 analyses the nature of interactions in the classrooms through the participants' collaborative support and team interpreting. Chapter 9 discusses findings of the study and relates them to existing literature. Issues of the participants' socio-cultural understandings centered on deaf students' readiness for learning, lecturers' engagement with interpreting, interpreters' proficiencies and tertiary institutions embracing of students' diversities were discussed. Other sections of the discussion also focussed on the demands and control options of interpreting and the nature of interactions between deaf students, lecturers, and interpreters in the classrooms. These led to the proposal of a model of inclusion for deaf students. The chapter provides methodological and research question reflections and the key contributions that this study makes. Chapter 10 provides the synopsis of the study, limitations and implications of the study, and the final reflections of this study.

Chapter 2

Context of the study

2.1 Introduction

Chapter 1 presented the rationale, research questions, significance, and some terminologies which will be used throughout this study. This chapter presents the context in which this study was conducted. First, a description of the general Ghanaian context is provided followed by a description of the development of deaf education in Ghana focusing on how it began, and the transition of deaf students from basic through secondary education to the tertiary level. The chapter also presents contextual information about inclusion in tertiary institutions in Ghana with a focus on the University of Education, Winneba where the major part of the study was conducted and shows the significance of this study in this context.

2.2 Ghana

Ghana is a small Anglophone country in Sub-Saharan West Africa, which covers a land size of 92,098.9 square miles. The country has a population of 28 million, out of which about 211,500 are deaf representing 0.76% (Ghana Statistical Service, 2012). The country has 16 administrative regions which have 13 public and three private basic special schools for the deaf, and six public tertiary institutions that have deaf students learning through sign language interpretation with hearing students in the same classrooms (Oppong and Fobi, 2019). Ghana has about 69 different spoken languages and three different sign languages (Ghanaian, Adamorobe, and Nanabin Sign Languages) across the regions (Nyst, 2010). However, the Ghanaian Sign Language (GhSL) is the language widely used by deaf people in most settings including all educational institutions that admit deaf students. GhSL is related to American Sign Language (ASL) because it was the late Rev. Andrew Foster, an American, who helped in establishing the first school for the deaf in Ghana in 1957, which launched the emergence of today's GhSL (Oppong and Fobi, 2019). The next section of this chapter describes the development of deaf education in Ghana.

2.2.1 Development of deaf education in Ghana

Deaf education in Ghana began in 1957 when Rev. Andrew Foster, a deaf graduate from Gallaudet University in the United States of America (USA) visited and established the first school for the deaf in Osu, Ghana (Amoako, 2019). Foster blended the American Sign Language (ASL) and the Ghanaian signs to teach literacy and numeracy skills to deaf people (Adu-Bediako, 1982). This system of communication later developed into GhSL (Oppong and Fobi, 2019). Foster adopted the Abbe Charles Michel de L'Epee's system of communication using GhSL to teach deaf students (Fobi and Oppong, 2019). Since there was no educational policy in place for deaf people in Ghana, missionaries who brought deaf education also taught the gospel of Jesus Christ as part of their curriculum (Amoako, 2019, Oppong and Fobi, 2019).

Due to cultural prejudices and stigma attached to deafness at the time, very few parents were willing to send their deaf children to schools for the deaf (Oppong and Fobi, 2019). This hindered the development of literacy and numeracy skills among most deaf people who presently are in their late sixties. As awareness of deaf education increased in the late 20th century among the Ghanaian communities, various parents saw the need to send their deaf children to school. This caused an increase in enrolment of deaf students, and 10 different schools for deaf people were established across the 10 regions (now 16 regions) of Ghana (each of the 10 regions had a school for the deaf) (Amoako, 2019, Fobi and Oppong, 2019, Oppong and Fobi, 2019). Anecdotal evidence suggests that the establishment of schools for the deaf in each region helped to spread deaf education in Ghana, and many deaf people who were educated were trained in one of these schools. Presently, the number of schools for deaf people has increased to 13 (Fobi and Oppong, 2019, Oppong and Fobi, 2019) and the communication approach being used in all the schools is GhSL (Republic of Ghana, 2006) (see Figure 2-1 for map showing institutions with deaf students in Ghana). Since the idea of inclusion had not developed at the time, though

few deaf students who were post-lingual[2] in spoken language were found in mainstream schools, they did not receive any support in the form of interpreting in their education (Fobi and Oppong, 2019).

Figure 2-1. Map showing institutions with deaf students (Oppong and Fobi, 2019)

[2] Post-lingual deaf students are students who become deaf after acquiring language.

For general education, Ghana runs a 2-6-3-3-4 (2years pre-school, six years primary, three years junior high, three years senior high, and four years tertiary) system of education (Amoako, 2019, Oppong and Fobi, 2019); however, in schools for the deaf the system used is 2-6-4-4-4 (two years pre-school, six years primary, four years junior high, four year senior high, and four years tertiary) (Fobi and Oppong, 2019, Oppong and Fobi, 2019). Students in schools for the deaf do an additional one year each in the junior and senior high levels, a system referred to as pre-junior high school (pre-JHS) and pre-senior high school (pre-SHS) to prepare the students for their education in those levels (Oppong and Fobi, 2019). This preparation is possibly meant to bridge the gap in the curriculum for the students and also to give the students more learning time to master the content of the curriculum since the curriculum for both regular and special schools are the same in Ghana. There is no empirical study that examines the effectiveness of the additional year on the students' language, communication, and effectively on their academic outputs. Though, some level of success could be said to have been achieved since some deaf students who went through basic and secondary education in Ghana have successfully graduated from tertiary institutions in Ghana and elsewhere, the majority do not progress to the tertiary institutions. However, this could not be attributed to only the curriculum since many hearing students who graduate from SHS in Ghana also do not make it to the tertiary. Even in the tertiary level, most deaf students do not perform at levels comparable to their hearing colleagues (Adu, 2016, Fobi, 2015, Fobi and Oppong, 2016). Despite this challenge that deaf students encounter globally, the problem becomes more worrisome in a context where deaf education is still developing, and interpreting is still at its infancy stage in all settings particularly in the tertiary classrooms (Knoors et al., 2019).

Until 2003, all deaf students who graduated from basic schools could only attend one secondary technical school for the deaf in Mampong/Akwapim (Oppong and Fobi, 2019) or have vocational training in basic schools for deaf people that have those centres. This situation caused many deaf students to drop out of schools after their

basic education because the secondary/technical school could not accommodate all the students who pass and are qualified for secondary education (Oppong and Fobi, 2019). Even, at the secondary school level, since most of the programmes are technical/vocational, courses in Science or Business are not available to the students who have interest in them. They are often limited to technical/ vocational training and arts which does not allow them to explore their talents and develop their potential in other areas of study.

In 2003, Ghana began piloting inclusive education for students with Special Educational Needs (SEN) in some selected schools (Gyimah, 2006, Vanderpuye, 2013). Unipra South Basic School in Winneba, Ghana was used for the pilot programme for deaf students and has been admitting deaf students to learn in the same classrooms as their hearing colleagues with interpreting support (Mantey, 2011). Though this system has been in existence for over a decade, there is no empirical study conducted to document the successes achieved so far. There is a dearth of studies that have examined teachers understanding of this practice and the roles played to support the practice. The next section of the chapter explains how tertiary education for deaf students in Ghana has evolved over time, but no attention has been paid to the critical role on interpreting in these settings.

2.2.2 Tertiary education for deaf students in Ghana

Tertiary education (higher education) in Ghana comprises third-level or post-secondary education, that offers training and research guidance at educational institutions such as universities, polytechnics, and colleges of education and nursing that are authorised by the national accreditation board as institutions of higher education. Deaf students from SHS who pass six subjects (three elective and three core including English Language and Mathematics) are qualified to apply for bachelor's programmes in tertiary institutions whilst those who pass five subjects (two elective and three core including English Language and Mathematics) are allowed to study either diploma or certificate programmes. As deaf students go through the admission processes and learn through interpreters in tertiary classrooms, the need to explore their readiness for such services is paramount. Often deaf students access

their pre-tertiary education in either a special school for the deaf or a mainstream setting without the services of interpreters (as indicated in the previous sections) (Oppong and Fobi, 2019). Some post-lingual deaf students also have very little or no experiences in GhSL before they enter tertiary institutions. So, there is often a switch in their language of communication when the students move to the tertiary level where they must learn GhSL and use interpreters to access academic information. This is because most of such students do not have access to sophisticated hearing technologies that enable them to fully access auditory information. So, this situation often compels the students to learn to communicate in signs, a language that has been unknown to them throughout their education. Some of these students who are fortunate to have sign language as part of their university courses learn GhSL from those courses, whiles those who do not have the same opportunities learn from their deaf colleagues. There is often no special language support given to the postlingual deaf students who do not take courses in sign language except that those who have the desire to learn GhSL are allowed to join the sign language courses to learn. Aside from dealing with the pressure of learning a new language as an adult, these students would have to contend with the parallel communication challenges of learning through sign language interpretation in tertiary classrooms, a situation that puts the majority of such students in a precarious position. Amid all these challenges, studies aimed at examining the expectations of deaf students on interpreting and their readiness for learning through interpreting in all the tertiary institutions in Ghana is scanty.

Although educational inclusion emerged in tertiary institutions in Ghana from 2006, it was only the University of Education, Winneba (UEW) which provided interpreters and notetakers for deaf students to learn with their hearing colleagues (Fobi, 2015, Fobi and Oppong, 2016, Fobi et al., 2016). Two years later, the Presbyterian College of Education (PCE) and University of Education, Winneba - College of Technology Education, Kumasi (UEW, COLTEK) also began admitting deaf students and provided them with interpreting support (Oppong and Fobi, 2019). Now, four other tertiary institutions (University of Ghana, University of Cape Coast, Takoradi Technical University, and Koforidua Technical University) also provide interpreters for

deaf students (Amoako, 2019, Oppong and Fobi, 2019). As the number of institutions that have deaf students increases, users' understandings of tertiary inclusion and the integral role of interpreting in these contexts will serve as a blueprint for the institutions in enacting these practices in their context. Since the UEW is the main site for the study, the next section of the chapter describes how they practice inclusion for deaf students in Ghana which seems to work.

2.3 University of Education, Winneba (UEW)

The UEW could be said to be the leading institution of inclusion for deaf students at the tertiary level in Ghana since they are the first institution to admit deaf students and also has the largest number of deaf students in the country (Oppong and Fobi, 2019). Oppong and Fobi further reiterate that the UEW is the main tertiary institution in Ghana that trains and distributes qualified teachers of the deaf to all parts of the country and beyond. This section of the chapter discusses the inclusion in the UEW.

2.3.1.1 Inclusive education in the UEW

The University of Education, Winneba (UEW) was established in September 1992 as a University College under PNDC Law 322 of Ghana. Their vision and mission are to be an internationally reputable institution for teacher education and research that trains competent professional teachers for all levels of education as well as conducting research, disseminating knowledge and contributing to educational policy and development. The UEW has its main campus in Winneba in the Central Region of Ghana, with three satellite campuses in Ajumako (Central Region), Kumasi, and Asante Mampong (Ashanti Region). The UEW main campus began admitting deaf students to learn in the same classrooms with their hearing colleagues in 2006, and UEW–COLTEK a satellite campus of UEW also began inclusion for deaf students in 2008 (Fobi, 2015, Fobi and Oppong, 2016, Fobi et al., 2016). The support services available at the UEW to deaf students to facilitate their inclusion are interpreting and notetaking (Fobi, 2015, Fobi and Oppong, 2016, Fobi et al., 2016). Often, at UEW, it is some of the interpreters who offer notetaking services to deaf students since the university had not specially trained individuals in notetaking. Though without any

professional background, the interpreters at UEW are often past or current students at the Department of Special Education (SpEd) who are familiar with some of the courses in the university, so they also serve as notetakers. The university relies solely on the SpEd to make decisions on the inclusion of deaf students. The university has an office in charge of managing and supporting students with special needs (Resource Centre for Students with Special Needs, RCSSN), which is a unit under the SpEd. The head of the RCSSN is often a member of the staff at the SpEd. The UEW considers decisions from the SpEd regarding deaf students as binding since those decisions are deemed to come from experts. Often the RCSSN organise meetings with deaf students to discuss their concerns and these are mostly included in the decisions the university makes about the students. Regarding the admission screening for deaf students, a document I received from the admission's office of the UEW that was used as criteria for admitting the students was actually a letter written by the head of SpEd to the admission office (see Appendix H for a letter from the head of SpEd to the admission office of UEW). The letter gave justification for waiving some admission criteria for deaf students. This tells the extent of the role the SpEd in the inclusion of deaf students at the UEW. Since the university's interpreters have no professional training and certificate in interpreting, there are often complaints from the deaf students, lecturers, interpreters and heads of departments about the quality of interpreting rendered in this context. However, there has not been a study that prioritise the examinations of the role of interpreters in the classroom interaction between deaf students and lecturers in this context.

2.3.1.2 Deaf students in the UEW

The quarterly report of the Resource Centre for Students with Special Needs (2017) indicate that the UEW has an enrolment of 35 deaf students pursuing various academic programmes for the award of bachelor's degrees and diplomas in Art, Education, and Science in different departments. The records also indicated that 68 deaf students have registered at UEW since 2006, 33 have successfully completed and graduated from their courses of study and there was no dropout (Resource Centre for Students with Special Needs, 2017). Most deaf students attended a

secondary/technical School for the deaf in Ghana. Few of the post-lingual deaf students attended a regular senior secondary school. One of the students was deaf/blind.

Most deaf people who graduate from SHS are directed to the UEW because the UEW is known to be the only institution of higher education which offers support services for deaf students. At the UEW, all first year deaf students are provided general orientation on the available supports for all students with special needs but there is no mention on how to work with interpreters during this period. In the UEW, all deaf students are provided with interpreters without considerations to their communication preferences and their learning needs. Therefore, both deaf student who communicate through sign language (but have no experience of learning through interpreters) and post-lingual deaf students (who often communicate through spoken language) are provided with interpreters. This makes it quite challenging for some of the deaf students particularly the post-lingual who have no sign communication experience. They often start learning sign language in the university and also learn through sign language interpreters at the same time. The challenge is that even for the proficient deaf sign language users learning through interpreters is a new practice to most of them, and therefore, they are likely to encounter some problems in learning in this context when they use interpreters particularly because they are not familiar with how to use the service. Again, the challenge become even more compounded with the post-lingual deaf students who are learning the language, and at the same time being interpreted to in the same language. Some of the deaf students because they are not familiar with the roles of the interpreters in the classrooms, assume that the interpreters are their lecturers, and therefore often direct questions to the interpreters and expect direct responses from the interpreters.

When deaf students arrive in the UEW, they are often advised to take up courses in Special Education because it is assumed it is the Department of Special Education that could assist them and attend to their learning needs (Fobi, 2015). Until recently, deaf students who attended the UEW offered their programmes from SpEd (EHI) in the Winneba Campus and Technology Education in the Kumasi campus. Now, deaf

students take courses from different departments such as Graphic Design, Art Education, Early Childhood Education, Information and Communication Technology Education, and Basic Education (Oppong and Fobi, 2019). This has increased the number of lecturers who teach deaf students through interpreting. Therefore, examining the understandings of lecturers and heads of departments of inclusion of deaf students will provide a deeper understanding of how these actors perceive the practice so that measures could be put in place to sustain inclusion for the students. The change in programme partly could be as a result of the fact that the student population in SpEd EHI has increased so the university can produce more interpreters who have done their second subject area from other departments and could offer interpreting in those departments. On the other side, though there is no research conducted on the deaf graduates from SpEd EHI, the department may have produced enough graduates who haven't found a job in teaching, so those graduates possibly have advised prospective deaf students to choose courses which will give them skills to survive the Ghanaian system should they graduate and be unemployed.

The majority of lecturers who teach deaf students through interpreters in the UEW encounter the students for their first time in their teaching career, and have no training or understanding of how to teach the students through interpreters. Even the few lecturers who have some basic training of how to teach students with special needs often do not understand how to interact directly with the students through their interpreters and are often not aware of the roles of the interpreters in the classrooms. There is no induction or any workshops for lecturers on how to work with interpreters and deaf students. This often lead to a situation that makes most lecturers assume that interpreters for deaf students are the ‘teachers’ of the students in the tertiary classrooms. Again, since different deaf students and lecturers of varying background are interacting through interpreting, it is likely that interpreters who have varied professional training and experiences also encounter demands that require control options in the classrooms that need to be researched.

The next section of this chapter describes the interpreters in the UEW.

2.3.1.3 Interpreters in the UEW

Though Ghana has no professional body that certifies interpreters, the UEW employs the services of some of their students from the Education of the Hearing Impaired (EHI) of the SpEd, to support deaf students in the classrooms through interpreting and notetaking. Between 2006 and 2011, undergraduate students as part of their training underwent a one academic year compulsory teaching internship during the final (fourth) year of their study. The UEW used the services of the internship students who could sign to serve as interpreters for deaf students who had been admitted into the university. This kind of activity continued until 2013 when the university employed 3 fulltime interpreters who had their training in the EHI, SpEd. From the 2012/2013 academic year to date, the teaching internship is run for a semester for all undergraduate students which means that student interns can only support deaf students for a semester. In addition to the fulltime interpreters, the university uses the services of National Services[3] personnel, volunteers (students who have completed their national service and are not yet employed, and undergraduate students who could sign and are in the same classrooms with deaf students), and student interns. The language capacities of these interpreters are mostly based on their performances in sign language courses taken from the university and their ability to communicate with deaf students. Sometimes some interpreters lack the ability to interpret for deaf students but ones they express their willingness to support, the office of sign language interpreters under the RCSSN provides language and interpreting skill support to these interpreters so that they are able to interpret the deaf students.

[3] National Service is a one-year mandatory service for recent graduates of tertiary institutions in Ghana. This service provides graduates with practical exposure on the job, both in public and private sectors, as part of their civic responsibilities. They are usually paid a non-taxable allowance at the end of every month. The amount is usually based on what will be approved by the Ministry of Finance. Currently, they receive 559.04 Ghana Cedis or £73.17 (at £1=Ghc7.64) per month.

Studies conducted on deaf students' perceptions of interpreters at the UEW revealed that though students acknowledge the presence of interpreters in the university, they did not recognise them as professionals since most of the interpreters were inexperienced and that often affected the quality of their interpreting (Oppong et al., 2016). The university has no system in place for maintaining interpreters after completing their national service. This could partly be due to the financial burden on the university in remunerating their interpreters (Amoako, 2019) because the government of Ghana since 2010 had placed an embargo on the employment of staff into the public sector. Occasionally, when the embargo is lifted a quota is given to each public institution to recruit staff in areas where the need base is urgent. The lack of attention paid to the recruitment of interpreters could also be a result of the fact that almost every semester, the UEW has many student interns who work as interpreters for free. So, the university probably does not see the need to recruit permanent interpreters and pay them for services they receive for free from their students. The challenge with using the free services is that often when these interpreters begin their work they have little or no experience in interpreting in tertiary classrooms (Maroney et al., 2020, Maroney et al., 2018a, Maroney et al., 2018b, Maroney et al., 2016), so the quality of interpreting for the students are likely to be affected. Again, these interpreters due to their inadequate experiences, learn on the job as they begin to work with deaf students in the university. But unfortunately, the duration of their internship is often four months and the active interpreting time they have in this period is about three months since about one month is used for registration of students and examinations where no classroom interpreting is often required. This duration does not prepare the interpreters to be proficient to work in tertiary classrooms. As these interpreters go through this process and become more proficient, their duration for the internship elapses and another set of students are recruited for the interpreting.

Though this problem has persisted for some years now and seems to pose some challenging moments for the deaf students, comparatively, the UEW's case can be considered to be the best in tertiary institutions in Ghana since some tertiary institutions who have deaf students do not yet have regular interpreters to interpret for

the students in their classes. Amid this problem, little attention has been paid to resolving the issue and promoting the inclusion for deaf students. No single study has elicited the understandings and expectations of the actors on tertiary inclusion and interpreting. The demand and control option considerations that interpreters make within this context has not been researched. Finally, it is also not established the nature of interactions that exit between deaf students, lecturers and interpreters of tertiary classrooms in Ghana.

2.4 Summary

This chapter presented an overview of the context in which this study was based. The general development of deaf education in Ghana where Rev. Andrew Foster first introduced education to deaf people in Osu, Accra through ASL and Ghanaian signs was described. Even though deaf education has existed for over six decades in Ghana, it is still considered to be in the early years of development and inclusion is new. Different transitions and curricula have guided deaf education in Ghana starting from segregation, through mainstream and integration to inclusion but there is the need for concerted efforts from all stakeholders to ensure that awareness is created among the populace of Ghana to help promote the education. A case was made about some of the successes and challenges so far and the need for research-based evidence to guide the deaf education in the country. Despite these successes and challenges, there is a gap in the understanding of inclusion in this context. Studies that have examined the role of interpreters in mediating in tertiary classroom interaction of deaf students and lecturers are scarce though the number of deaf students has increased and the tertiary institutions that admit them are on the rise. There is also a paucity of research that analyses the demands and control options of interpreting in these classrooms. Therefore, this study aims at developing an understanding of the roles of interpreting in the inclusion of deaf students in tertiary classrooms. The next chapter provides review of the literature on the role of interpreters in the inclusion of deaf students, and the demand and control option considerations of tertiary classrooms.

Chapter 3

Understanding the role of interpreters in the inclusion of deaf students in tertiary classrooms

The background and context of this study have been presented in the previous chapters. Chapter 3 develops an understanding of interpreting in tertiary classrooms.

3.1 Interpreting in tertiary classrooms

Classroom learning and teaching mediated by interpreters create a triadic interaction between deaf students, lecturers and interpreters (Leeson and Foley-Cave, 2007). Though classroom interactions are meant to be between the student and teachers, when interpreters become part of the process, it creates an intersubjective relationship between all the three actors of the classroom who may have distinct socio-cultural backgrounds and experiences (Janzen and Shaffer, 2008). Interpreters bring their views, experiences, expectations and intentions into the classrooms to mediate the interactions between the students and the lecturers. These interpreters' attributes may not always correspond to those of deaf students and lecturers engaged in the classroom interactions (Janzen and Shaffer, 2008). For example, there may be instances where there are mutual uncertainties about the professional responsibilities of lecturers and interpreters in the classrooms (De Meulder and Haualand, 2019; Ringsø and Agerup, 2018), and may lead to a lack of collaborations and dialogue. Wolbers et al. (2012) indicate that when these mutual uncertainties occur, interpreters may take on some tasks that usually belong to the lecturer (e.g., explaining concepts to the deaf students), without the students' or lecturer's knowledge or consent and any pedagogical training. Deaf students aside from seeking concept clarifications from their interpreters, may also perceive the interpreters as 'lecturers' and ask course-related questions from the interpreters. In the university context where mostly classroom interactions are in a traditional lecture mode may not be as interactively participatory as other triadic settings (e.g. interactions between a doctor and a deaf patient), it is nonetheless a situation in

which two languages are being used, typically in simultaneous mode, with the potential for communication breakdown (Leeson and Foley-Cave, 2007).

Turner and Harrington (2000) suggested that when interpreting becomes part of education, then studies in such settings should focus "on, for and with" stakeholders. Such studies should dwell on those that the inquiry has an impact (Knoors and Marschark, 2014, Power, 2003). When interpreting mediates inclusion for deaf students, various actors play active roles (Heyerick and Vermeerbergen, 2012, Napier, 2011, Ramsey, 1997). The actors involved in interpreting in the interactive classrooms should aim to set up conditions that will facilitate effective interpretations that support improved learning outcomes for deaf students (Salter et al., 2017). Although interpreting research in tertiary classrooms is a developing sub-discipline of interpreting and translation studies (Napier, 2011, Napier et al., 2006, Witter-Merithew and Johnson, 2004), there is the need to examine the perspectives of all the actors regarding inclusion, and how they could put together their expertise and use available resources to support the practice.

Whereas school-based empirical evidence in inclusive learning environments abounds in the literature, there continues to be a paucity of evidence from the classrooms on the understanding of the actors regarding the practices and their enactment of inclusion in these settings (Liasidou, 2015, Salter et al., 2017). Therefore, the classroom settings need to be examined to ascertain the actors' socio-cultural understandings of inclusion, their expectations of interpreting and their roles in facilitating the goal of inclusion in educational settings. To establish this, the research questions that will be examined from the literature are:

a. What expectations do deaf students have on interpreting, and what is their readiness for learning through interpreting in tertiary classrooms?
b. What understandings do deaf students, interpreters, lecturers, and heads of departments have on inclusion?

3.2 Socio-cultural understandings of inclusion

The educational inclusion of deaf students has been conceptualised and explained differently from different philosophical positions (Ainscow and Miles, 2009, Ainscow and Miles, 2008, Miles and Singal, 2010, Mittler, 2012). Although there are extensive studies into inclusive education, the majority are usually based on primary and secondary schools (Ainscow and Miles, 2009, Ainscow and Miles, 2008, César and Santos, 2006, Engelbrecht, 2006, Johnstone, 2010, Kugelmass, 2006, Miles and Singal, 2010, Mittler, 2012, Salter et al., 2017) with little attention paid to tertiary classrooms (Marschark et al., 2006, Marschark et al., 2005, Marschark et al., 2004, Marschark et al., 2015, Power, 2003). Despite the existence of this practice, and studies conducted about it for over two decades, ongoing debate still exists on its definition. For example, inclusion is conceptualised as a dynamic process that is a never-ending search to find better ways of responding to the diversity of students (Booth and Ainscow, 2002, Johnstone, 2010, Miles and Singal, 2010, Pivik et al., 2002). Though change is inevitable in human learning, one cannot argue that for the sake of the dynamisms of learning, in each context efforts should not be made in ensuring that the best conditions are set up for learning. In every given time, based on resources and expertise available, there should be ways of identifying given problems and finding solutions that will minimise the problems if not eradicate them completely. Understanding that inclusion is an ongoing dynamic process, often shifting the focus of utilising the resources and expertise available to maximise the outcome of the practices.

Other explanations of inclusion highlight the identification and removal of barriers that hinder the inclusion of students (Booth and Ainscow, 2002, D'Alessio, 2013, Foster et al., 1999, Johnstone, 2010, Miles and Singal, 2010, Pivik et al., 2002), and so, these barriers could be eradicated when there is collaboration between the regular and special education teachers (Antia and Stinson, 1999). This perspective on inclusion focuses solely on the disabilities of students, without paying much attention to their learning needs such as reading and communication needs in the classroom. It is also problematic to assume that when barriers are removed, students will have no issues

with their learning, particularly in contexts where it is not even clear what the barriers are. Mittler (2012) explains that inclusion does not only focus on placing students with special needs in regular classrooms but is concerned with equipping teachers with the requisite skills and knowledge for them to accept responsibilities for all students' learning in their classrooms. Mittler further stressed that inclusion should centre on giving students confidence through valuing their concerns regardless of what form or shape they may be. This approach to inclusion shifts much attention to teachers without considering the holistic efforts of all (institutional settings, students, and interpreters) to help achieve the goal of the context. Others have also defined inclusion as the need to give each student access to learning (Engelbrecht, 2006, Mittler, 2012) by appreciating their human rights (Ainscow and Miles, 2009, Engelbrecht, 2006, Forlin, 2006). Inclusion deals with giving every student the opportunity to be present, participate in class activities and achieve their unique learning outcomes.

The goal of classroom interactions is to exchange knowledge through the participation of every actor in the classroom so that the desired learning outcomes will be achieved (Biggs, 1993, Salter et al., 2017). Tertiary classrooms for deaf students are complex settings in which different actors of unique characteristics, social and cultural understandings come together to facilitate learning and teaching (Blankson and Kyei-Blankson, 2008, Hamilton and Tee, 2010, Hamilton and Tee, 2013, Salter et al., 2017, Schick et al., 2006, Scott and Palincsar, 2007). It becomes even more complex when interpreting mediates the interactions in these contexts. Each actor brings their experiences, expertise, skills, and resources into this dynamic learning environment (Messiou, 2002, Salter et al., 2017). Inclusion in this context needs to be conceptualised from the basis that collaborative practices among such individuals of varied backgrounds foster in achieving deaf students learning outcomes (Bowlin, 2012, Kugelmass, 2006, Lindsay and Dockrell, 2002, Salter et al., 2017). Though it appears problematic, especially considering the expertise and autonomy of the actors involved in this context with diversified resources (Lindsay and Dockrell, 2002), developing an understanding of the social and cultural dynamics of each actor by themselves will serve as the basis for the collaboration that will help in achieving

greater learning outcomes (Bowlin, 2012, Kugelmass, 2006, Lindsay and Dockrell, 2002).

Literature suggests that the socio-cultural understandings of inclusion are often based on the expectations of actors in these contexts.

3.2.1 Lecturers, interpreters, and heads of departments' (actors) expectations of deaf students

As deaf students enrol in tertiary institutions, they bring a wide range of experiences. Most lecturers at this level encounter deaf students for the first time and have little or no experience teaching such a cohort of students (Fobi and Oppong, 2019, Oppong et al., 2018), however, their expectations of the students are minimally explored. Vermeulen et al. (2012) examined teachers' classroom practices and their beliefs and emotions regarding the inclusion of deaf students in mainstream schools. Vermeulen et al. interviewed nine teachers from two secondary schools about the inclusion of deaf students. They found that the teachers considered deaf students in their lessons. Nevertheless, the teachers were less willing to accommodate those students who revealed a negative attitude towards work. The teachers also, had mixed emotions in dealing with deaf students in their classes. Whereas some showed negative emotions, others were positive with the students. The study also found that the teachers stressed the need for deaf students to be able to read lips (speechreading). Again, the teachers, bearing in mind that some of the students were reading their lips, always turned to the direction of the students for them to have full access to their lips and get the information they offered in the classroom. Vermeulen et al. also reported that most of the teachers in their interview indicated that they make sure the students understand the instructions or assignments given in class by checking with the students whether they understand their instructions. The current study will not only examine teachers' classroom practices but will also ascertain their socio-cultural understandings regarding inclusion.

3.2.2 Deaf students, interpreters and heads of departments' (actors) expectations of lecturers

This section of the chapter reviews literature on the actors' expectations of lecturers in tertiary classrooms. Huang and Napier (2015) conducted a study on the perceptions of students and teachers on the qualities of an effective teacher in university settings in New Zealand and Australia. They surveyed 22 teachers and 94 students through an online Survey Monkey from universities. The qualities that teachers were rated on were: 1) teachers' role in and out of the classroom, 2) the teachers' traits, and 3) the methods used in the classroom teaching for the feedback they gave to students. They found that for teachers to be effective at the tertiary level, they should exhibit the following characteristics: 1) a personality that influences learners to learn and attain high level of professionalism, 2) have ongoing support for their students, 3) should have effective teaching strategies that include all students in their lessons, 4) teaching strategies that motivate students to be independent learners, 5) high level of understanding and knowledge of theories of teaching, and how to convert this knowledge and understanding into demonstrable skills for students. Teachers, therefore, need to exhibit qualities aimed at helping individual students achieve their set educational goals and outcomes. This will create the positive impact that reflects the aim of inclusive education. The current study is different from Huang and Napier's study because each actor was interviewed to find their understanding of what constitutes inclusion for deaf students. Deaf students were also surveyed to examine their expectations of interpreting and their readiness for learning through interpreting in tertiary classrooms.

3.2.2.1 Teachers' role in interpreting

Teachers who work with interpreters in their lecture halls need to understand interpreters' roles in such settings and contribute their part effectively to promote learning for deaf students (Darroch and Marshall, 1998, Marschark et al., 2005). Understanding that the interpreters' presence in the classrooms is to facilitate communications between the lecturer and deaf students will help teachers appreciate how to collaboratively work with them in these settings (Bontempo and Levitzke-Gray,

2009, Leeson, 2012, Napier, 2002). When this recognition is achieved, teachers will not make interpreters run errands for them whilst class is in session or will not consider the interpreters to be the teachers of deaf students (Fobi and Oppong, 2019, Maroney et al., 2020, Maroney et al., 2018a, Maroney et al., 2018b, Maroney et al., 2016, Oppong et al., 2016). Teachers by this recognition will communicate directly to their students and will not expect responses from the interpreters when deaf students are not being cooperative. Again, teachers must establish interpreters' location in the classroom (Bontempo, 2012, De Meulder et al., 2018, Roy and Metzger, 2014, Roy, 1999). When deaf students use interpreters, they need to discuss where the interpreters should be seated (Bentley-Sassaman and Dawson, 2012, De Meulder et al., 2018) to provide the greatest benefit to the student whilst reducing the potentials of any distraction to other members of the classroom (Oppong et al., 2016, Young et al., 2019). Teachers must understand that interpreters need to position themselves at a place where both the teachers and deaf students can easily access the interpreting services (Bontempo, 2012, Marschark et al., 2005). This positioning done properly will allow deaf students to have access to interpreters, teachers, and visual aids where applicable (De Meulder et al., 2018). Classroom arrangements should also be considered. To promote interactive learning and teaching, teachers should ensure that students are seated in a manner whereby all can have access to each other and can contribute to the discussions in the classrooms (De Meulder et al., 2018). Darroch and Marshall (1998) suggested that the best seating arrangement to promote interactive learning and teaching in the classroom is to allow students to be seated in a circular or semi-circular way in the classroom.

Lecturers should also share lecture contents with their interpreters. When interpreters have an idea of the content to be discussed, they can prepare before their assignment so that new concepts that may be difficult to interpret will be dealt with by the interpreters before the class begins. Interpreters' familiarity with the topic for the day will aid them to provide quality interpreting for their consumers in the classroom (De Meulder et al., 2018, Napier, 2016, Russell, 2008).

Assessment plays a key role in teaching. In teaching learners of diverse learning needs in tertiary classroom settings, teachers must consider alternative forms of testing deaf students (Cheng and Rose, 2008). For example, a written format assessment could be interpreted to students if deaf students prefer the interpreter to interpret the content into sign language. Teachers should make this kind of arrangement with deaf students before the students take their test. Teachers need to recognise that they do not teach interpreters and interpreters do not teach deaf students. Therefore, instructions should be directly communicated to deaf students and the role of the interpreter is to facilitate communication between the teacher and the students (Cawthon, 2001, Marschark et al., 2008). Teachers need to speak directly to the students, and explain jargons and technical words used in class and spell words that require spelling so that interpreters can easily interpret for deaf students.

Teachers in tertiary classrooms should also learn to speak at a reasonable pace to students in a class (Metzger, 2005, Pöchhacker, 2016) and should provide regular pauses to cater to interpreters' lag time (Bentley-Sassaman and Dawson, 2012, Bontempo, 2012, De Meulder et al., 2018). Teachers should always have their interpreters in mind when delivering a lesson and this will allow the interpreters to interpret whatever transpires in lessons for deaf students to be equally active in the class activities. In addressing the students, teachers should use "I" and "You" references. The interpreter will transmit the exact words. Teachers should use personal locations such as "I" and "You" when communicating with deaf students. They should avoid speaking of the individual in the third person; phrases such as "ask him" or "tell her" should be avoided since they can be confusing. Having reviewed literature on the actors' expectations of lecturers in tertiary classrooms, the next section of the review will focus on the expectations of interpreters by deaf students, lecturers and heads of departments.

3.2.3 Actors' expectations of interpreters

As the actors work with interpreters in tertiary classrooms, exploring their expectations of the interpreters will help interpreters improve on the quality of their

work in these contexts (Heyerick and Vermeerbergen, 2012). Although interpreters play a key role in facilitating communication for deaf students, their mere presence in an educational setting does not guarantee deaf students' success. Most deaf students who use interpreters in tertiary mainstreamed classrooms feel they do not get access to information from their classes as they expect to have (Heyerick and Vermeerbergen, 2012). Anecdotal evidence from deaf students about proficient interpreters usually is centered on self-reporting and observation (Napier, 2011). Although these discussions from deaf students are important, they do not provide enough support for research and practice (Napier, 2002, Napier, 2011).

Though language proficiency is a requirement for interpreting, it does not guarantee interpreters' interpreting skills (Dean and Pollard, 2001, Dean and Pollard, 2013, Finton, 1998, Frishberg, 1986, Napier, 2002). Interpreting is a multi-dimensional competency-based phenomenon that requires more than the ability to understand two different languages (Bontempo, 2012, Leeson et al., 2008). It requires the ability to exhibit the competence and knowledge-based proficiency into skills which will aid in mediating between the two languages that one works between. Experienced interpreters often bring their knowledge and experience into their assignments (Bentley-Sassaman and Dawson, 2012). This is beneficial since it enables them to anticipate the content to be interpreted and plan to provide appropriate interpretations for their consumers. Often for most new interpreters, a gap exists between expected and actual performance in educational settings in terms of the skills and knowledge they have acquired in their training and the expectations of them in the real-life classroom situation (Bontempo, 2012, Dean and Pollard, 2001, Dean and Pollard, 2013, Dean and Pollard, 2011, Witter-Merithew and Nicodemus, 2010). The gap could be that training programmes do not give out activity-based training which is aimed at preparing interpreters for their world of practice (Patrie, 1994). The interpreters' knowledge of the literature, skills, cognitive abilities, broad knowledge base, attitude, and work aptitude contribute to the quality of interpreting that they render in the classrooms (Bontempo, 2012). Literature highlights a list of skills needed for interpreters to meet the academic challenge of interpreting in higher education. Some of the skills in the literature include but are not limited to sign

language skills (Leeson, 2012, Napier, 2011); spoken language skills; cultural sensitivity (Napier, 2002, Napier, 2011); interpreting skills (Napier, 2011, Stone, 2007); a sense of ethical responsibility and integrity (Dean and Pollard, 2004, Dean and Pollard, 2011); self-discipline; trustworthiness; interpersonal skills; willingness to learn; professionalism; flexibility; and a sense of humour (Bontempo and Levitzke-Gray, 2009, Napier, 2002).

Again, interpreters who interpret in the university settings need not be only responsible for interpreting in the classroom but also have the responsibility of following the school's discipline goals by adhering to the goals of the subject they interpret. The teacher who leads the class will need to determine the philosophy of discipline for the classroom and interpreters who work with teachers should do their best to abide by this (Bontempo, 2012). The teacher will need to discuss with the interpreter about how they expect interpreters to participate in classroom subject area. Since higher education institutions are made up of deaf students with diverse needs and experiences (Marschark et al., 2004), the interpreters who work in such settings must be able to adapt to different situations of their consumers and advise the teachers accordingly (Bontempo, 2012, Heyerick and Vermeerbergen, 2012). Interpreters should explain to the lecturers about certain situations and needs that some deaf students may encounter during learning in higher education (Bontempo, 2012, Oppong et al., 2016). For example, a university professor may not be aware of why deaf students often do not participate in class discussions as compared to their hearing colleagues. Interpreters must know about and explain to the lecturers about the lag time they use in interpreting (Bontempo, 2012, De Meulder et al., 2018, Leeson, 2012). This will allow lecturers to understand and appreciate how information gets to the students and will be able to use a suitable approach in including the students in their class. The collaboration of the interpreters and the professor with the students will help in making differences in the academic integration of deaf students in the lecture (Bontempo, 2012).

In Ghana, Oppong et al. (2016) explored the perceptions of deaf students on the quality of interpreting in a public tertiary institution. They employed a descriptive

survey design to sample 23 out of 34 deaf students who willingly agreed to participate in their study. Participants were asked to describe in an open-ended questionnaire their perceptions about the interpreters they work with in the institutions. Deaf students in the study indicated that since the university did not have professional interpreters, the quality of interpretation was not the best; thus, the need for action to be taken to improve upon interpreting services is demonstrated. Secondly, the problem of dissatisfaction among deaf students arose because they thought interpreters were not qualified because the interpreters did not undergo requisite training. The study recommended that higher education institutions must take steps to ensure that interpreting studies are introduced and implemented in the curriculum to train qualified interpreters for deaf students. This study is different from Oppong et al.'s study because they sampled few deaf students without including other actors like interpreters and lecturers to also examine their view about the phenomenon. Again, the study used a qualitative research approach to address the research questions raised and this study used the mixed-method research approach and surveyed deaf students' expectations of interpreting and their readiness for learning through it in Ghana.

In Australia Napier and Rohan (2007), surveyed the views of deaf students at the basic school level on what makes a good interpreter. The results of their study revealed that overall, the respondents were satisfied with the work of interpreters. Understanding the context of the interpreted situation and a professional attitude came up as the most important qualities users expect from interpreters. Napier and Rohan did their study in a context where interpreting is fairly established professionally. The current study was conducted in a developing country where interpreting as a profession is a new concept that is under development and there is no standardisation in the interpreting practices.

In the Netherlands, Verwey-Jonker (2003) conducted a study on the perceptions of deaf sign language users on the quality of interpreting of the daily news on TV. The study concentrated on the assessment by a deaf viewer on the interpreters, expectations of adult deaf viewers on news broadcasts, and how deaf people thought

the quality of interpretation could be improved. The results of the study highlighted differences in quality among individual interpreters. Respondents reported the following missing components when watching interpreters: 1) knowledge of deaf community and deaf culture, 2) interpreting into Dutch Sign Language, and 3) handling of more complex situations. They identified the following main competences interpreters would need in their assignments and which relate to all interpreting settings: 1) extensive use of facial expressions and lip movements, 2) adjusting signing style to the topics in the setting, and 3) learning new signs (training). Similar to Napier and Rohan's (2007) study, Verwey-Jonker did not factor the perspectives of deaf students in the low and middle income countries and this study intended to address that with attention paid to students in tertiary classrooms.

Again, in the Netherlands, de Wit and Sluis (2014) conducted a study on the perception of sign language users on the quality of their interpreters. De Wit and Sluis made deaf participants select their interpreters based on individuals' set criteria which included: 1) situational factors, 2) interpreter's professional skills, and 3) norms. The results of the study indicated that deaf people preferred interpreters who will render a faithful and understandable interpretation. The results also showed that the criteria varied depending on the setting, such as employment, education, and community. The study also suggested that many deaf people have inadequate awareness regarding the professional requirements of the interpreter. The study also found that many interpreters have inadequate insight regarding the expectations of their deaf consumers. In this study, deaf participants were in a real-life educational context. These students did not select the type of interpreters they wanted.

Hermans et al. (2007) conducted a study to compare the quality of new graduate interpreters of a bachelor programme and more experienced interpreters in the Netherlands. Their findings revealed no difference in the quality between recently graduated interpreters and more experienced interpreters. This study is set apart from Hermans et al.'s study because it did not only compare the quality of services that experience and inexperienced interpreters render to deaf students, it also considered the effectiveness of interpreters when they work as team or alone.

Russell and McLeod (2009) examined the experiences of deaf children accessing public education through interpreting in Canada. They interviewed and surveyed the views of 13 interpreters, two deaf-blind intervenors, 15 deaf students, 10 parents, 56 teachers (10 with no training working with deaf/hard-of-hearing students, and 46 either teachers with experience working with deaf children and/or children with special needs), and four administrators. on classroom interpretatons. The findings of their study indicated that deaf students preferred to work with professional interpreters because they believed those interpreters are always adequately prepared for the classroom contents, seek for information/clarifications from lecturers and are genuinely interested in students' academic progress. Interpreters who were unprofessional did not show much interest in the learning/teaching environment, were less engaged with the students in interactions and possessed just the knowledge of sign language but not with any additional skills. This study is like Russell and McLeod's (2009) study since it involved the actors of tertiary classroom interpreting. However, it is different since the current study video recorded the classroom interactions of deaf students and lecturers mediated by interpreting to develop a deeper understanding of the actors' enactment of inclusion at the tertiary level.

Again, in Canada, Russell and Winston (2014) conducted a study to examine the association between verbal reporting processes and quality of interpretation among interpreters. Verbal reports were collected from 12 interpreters and analysed to find out how Stimulated Recalls (SRs) and Think Alound Protocols (TAPs) influence the quality of interpreting in educational settings. Each interpreter was requested to make a TAP whilst watching a sample classroom interaction as they prepared to interpret it. After viewing the sample class discourse, each interpreter also did an interpretation which was followed by a post-assignment SR review of the interpretation. Russell and Winston chose standardised samples based on videotaped authentic classroom instruction and represented classes at the elementary, middle school, and high school levels. They described a deaf child for each level of interpreting so that the interpreters could target their interpretation. The findings of the study indicated that interpreters who showed a higher level of cognitive thinking skills and attended to teachers' intention and student language preferences gave more effective interpreting

than those interpreters who focused on just the linguistic varieties and interpreting decisions. This implies that interpreters require higher cognitive thinking skills to make decisions on which style (literal or free) of interpreting to employ at the tertiary level and for which type of consumers. Interpreting at the tertiary level is not always about being proficient in the languages used but it depends also on one's ability to think critically on their assignments. This study is different from Russell and Winston's (2014) study because different actors were interviewed on the roles, they play to support interpreting in tertiary classrooms. These actors were video recorded and a multimodal analysis was done to see if what they said in the interviews agreed with their practices.

3.2.4 Deaf students, lecturers and interpreters (actors) expectations of institutions

Doherty (2012) explored deaf students understanding of the concept of inclusion in Sweden and Northern Ireland. Doherty interviewed 16 deaf students (eight from Sweded and 8 from Northern Ireland) who were in their last school, had left school recently or were in post-compulsory education. The findings of the study indicated that Swedish respondents reported more positive experiences than those in Northern Ireland, because in Sweden, a positive deaf cultural environment was promoted in inclusive settings for students. Teachers in those settings used sign language in most of their classes and social interactions at the various schools in Sweden encouraged students to use sign language. In Northern Ireland, although not many positive accounts were given about the inclusive settings, participants reported that what made them comfortable in their various schools was the fact that sign language was used in some classes. Again, where teachers could not sign, a deaf assistant was used to promote understanding between teachers and students. This study aims at providing data from the Ghanaian context on the understanding of actors on tertiary inclusion and their expectations of interpreting in mediating the classrooms interactions within these contexts.

Having reviewed literature on the actors' understanding of inclusion based on their expectations, the next section of the review shifts attention to interpreting which

serves a mediating tool for classroom interactions in this context. To understand interpreting in this context, an examination of the demands and control considerations in the classrooms using Dean and Pollard's (2013) demand control schema has been made. This gives rise to the next research questions that will be examined in the literature:

c. Given the actors' understandings of inclusion, what demand control schema considerations of interpreting are encountered in the classrooms?
    i. What are the demands of interpreting in the classrooms?
    ii. What control options are employed to manage those demands?

3.3 Demand control schema (DC-S)

Interpreters work between different paradigms of interpreting depending on who their consumers are. For example, interpreters who work with children may choose to operate as helpers,[4] or even parents since children in many cases are not able to make decisions for themselves and may require the assistance of adults. Conversely, interpreters who works with two adult professionals may choose to operate as an ally[5] or by using the bilingual-bicultural model[6]. Interpreters who works in tertiary classrooms also operate in different paradigms (Fobi et al., forthcoming), and encounter demands that require control options that may be analysed using DC-S (Ribas, 2012, Dean and Pollard, 2001, Dean and Pollard, 2013, Dean and Pollard,

[4] Helper model is a paradigm of interpreting that sees deaf people as needing help and should be helped NAPIER, J. & LEESON, L. 2016. Sign language in action. *Sign Language in Action.* Springer, WILCOX, S. & SHAFFER, B. 2005. Towards a cognitive model of interpreting. *Benjamins Translation Library,* 63**,** 27-55.

[5] Ally model is a paradigm of interpreting that describes both hearing and deaf consumers to be their own advocates and interpreters to be a communication ally for deaf and hearing people (Wilcox and Shaffer, 2005)

[6] Bilingual-bicultural model is a paradigm of interpreting which sees deaf and hearing people as masters of their cultures and the roles of interpreters is to respect these cultures and learn to connect through interpreting HUMPHREY, J. H. & ALCORN, B. J. 2007. *So you want to be an interpreter?: An introduction to sign language interpreting,* Amariloo, TX, H & H Publishing Company, NAPIER, J. 2002. University interpreting: Linguistic issues for consideration. *Journal of deaf Studies and deaf Education,* 7**,** 281-301.

2011, Dimitrova and Tiselius, 2009, Gile, 2009, Herring, 2018, Horwitz, 2014, Ribas and Vargas-Urpi, 2017, Rocks, 2011). To explain DC-S, I will first discuss the demands of interpreting.

3.3.1 Demands

Demands are essential aspects of the interpreting process, specifically for interpreters. Demands can be considered as "a factor that rises to a level of significance that will, or should, impact the decision-making involved in your work." (Dean and Pollard, 2013, p4). Demands could be activities (both intrinsic and extrinsic) that interpreters encounter when they interpret for deaf students in tertiary classrooms (Dean and Pollard, 2013). In the classroom settings, demands are the various activities and events such as, the pace of lecturers' speech, room noise, room lighting and deaf students understanding of concepts which impose limitations on interpreters when they interpret spoken language into sign languages or vice versa (Herring, 2018, Napier, 2001, Napier, 2011). However, it is worth noting that at the tertiary level, each of the actors faces some level of demands that they would need to contend with when they engage in the classroom interpreting process to promote inclusion. This means that to better understand the demands of interpreting that mediates learning and teaching in tertiary classrooms, every actor's role must be examined, and the potential demands they present to interpreters analysed. This study intends to examine how the actors' socio-cultural understanding and roles impact on the work of interpreters in tertiary classrooms. Dean and Pollard (2001), Dean and Pollard (2004), Dean and Pollard (2005), Dean and Pollard (2013) and Dean and Pollard (2011) categorized demands into four categories, namely: environmental, interpersonal, paralinguistic, and intrapersonal.

3.3.1.1 Environmental demands

Environmental demands are those that arise because of the context in which the interpreting occurs (Dean and Pollard, 2013). As interpreters interpret, several aspects of their work are contingent upon the setting within which they operate. Dean and Pollard extended their thought of the environment to include four sub-categories:

"*a) goal of the environment (e.g., learning and teaching, or for medical assessment and prescriptions), b) demands related to the physical surroundings and characteristics of that work environment (e.g., platform interpreting in open space or classroom context), c) the personnel and clientele who are present in that environment (e.g., proficient sign language user or beginner), and d) the specialized terminology that is likely to be used in that environment (e.g. varied disciplines in educational context)*" (Dean and Pollard, 2013, pp. 4-5). Dean and Pollard described that the environment is the first demand that interpreters would have to contend with before the interpersonal and other demands follow. Interpreters' ability to identify environmental demands will position them well for what may come up during their interpreting assignments (Heyerick and Vermeerbergen, 2012, Napier, 2002, Napier, 2005, Napier, 2011, Napier, 2016). Dean and Pollard's position on the environment only gives one perspective on the interpreting process – that is what interpreters need to be aware of concerning the environment. They did not consider how the environment could be made responsive and conducive to reduce the challenges it may pose on the interpreting process. In tertiary classrooms, all aspects of the environment should be made responsive and diversified to meet the different learning needs of the students (Hyde and Power, 2004) in terms of curriculum planning (Foster et al., 2003), classroom communication, physical environment and social events with the context (Antia et al., 2002, Hyde et al., 2004, Marschark et al., 2001, Power, 2003, Stinson and Kluwin, 2003). Dean and Pollard did not also consider that whilst there are other actors involved in the process of interpreting particularly in the educational settings, these actors may have to contend with environmental demands that require the concerted efforts of all in influencing the environment to ensure that all is set for the interpreting to mediate the classroom interactions. In tertiary classrooms, institutions have the mandate of providing an environment that supports the participation of each learner, and also help the learners to achieve their educational outcomes. Based on Dean and Pollard's (2013) model I will develop further the argument to include the various environmental sub-categories and how they can be regulated in a suitable way to form part of an effective interpreting process that mediates deaf students' and their lecturers' interactions at the tertiary

level. The second demand that Dean and Pollard described is the interpersonal demands.

3.3.1.2 Interpersonal demands

Interpersonal demands include all the significant things that happen between all the people who are present during an interpreting process (lecturers, interpreters, deaf students, and hearing students) that impact on the effectiveness of the interpreting (Dean and Pollard, 2001, 2011, 2013). Dean and Pollard indicated that communication objectives were the primary source of interpersonal demands. Communication objectives in tertiary classrooms includes the goals that lecturers intend to achieve in their lessons. An individual's communication objectives are specified by their conditions and those situations are different from the goal of the environment (Dean and Pollard, 2013). For example, the goal of an academic inclusive environment will be to ensure equity and inclusiveness of all students and staff to help students achieve academic success. However, the communication objectives of a course will always be contingent on the specific area under the broad academic environment. It will also be determined by the area of expertise of the academics who lead that course. The structure (discussion, lecture, presentations, or role-play) of a course will affect the way interpreters render interpretation in that context. How the lecturer relates with the interpreters', hearing students' and deaf students' reactions in the classroom present some demands for the interpreter to manage.

Another aspect of communication objectives that Dean and Pollard highlighted is what they termed as the 'thought worlds'. Dean and Pollard (2013, pp. 6-7) explained one's thought world as "*the combination of all the mental influences upon that person's perceptions, cognitions, feelings, and behaviours at a specific moment in time… One's thought world may be influenced by socio-cultural experiences, upbringing, values, and emotions. Concerning communication, one's thought world lies behind what a person is trying to convey when they are saying/signing something – their intention as well as their specific word or sign choices.*" So, for interpreting to be successful in tertiary classrooms, interpreters are always expected not just to

possess the ability to understand two different languages (spoken and sign) (Leeson, 2012, Napier 2011), but they have the responsibilities to connect all the thought world of the interlocutors of the interpreting process in order to make it effective (Nicodemus et al., 2014). These kinds of connections can be established when they have knowledge of the content of the subject-matter they interpret (Bontempo, 2012, Heyerick and Vermeerbergen, 2012, Napier, 2016) and have an understanding of the cultures of the two major communicators (deaf and hearing culture) (Fobi and Oppong, 2019, Witter-Merithew and Nicodemus, 2010). The interpreters' thought world and how they can connect with the other actors are most likely to create some demands they would have to manage in the classroom.

Lecturers and deaf students in tertiary classrooms also need to understand that interpreters may have different thought-worlds, so working with them in this context requires the collaborative efforts of all to promote learning and teaching. However, Dean and Pollard (2001, 2013) did not consider the thought-world of the interpreter and how it affects interpreting. Every member of the interpreting process has a thought-world that affects the way they connect in the interpreting process. Actors whose thought worlds conflict with that of the interpreters will most likely cause some interpersonal demands for the interpreters. Therefore, in discussing interpersonal demands, all such factors need to be considered in order to have a holistic picture of the influences on the interpreting process, and also the interpersonal demands for the interpreters. Dean and Pollard (2013) added that interpersonal demands can include: emotional tone, power dynamics, relationship factors, communication flow (e.g., turn-taking), roles, and cultural differences. All these other factors shape the thought-worlds of the actors and influences their engagement in classroom interpreting. The next demand that Dean and Pollard describe is the paralinguistic demand.

3.3.1.3 Paralinguistic demands

Dean and Pollard (2013, p, 8) posited that paralinguistic demands *"can best be understood not as what is being said (or signed) but how it is being used (or signed)."* Paralinguistic demands can further be explained as the attributes that are associated with the language which is being spoken or signed. These demands usually include

the volume of speech (too loud or too soft), the pace of the speaker/signer, accents, cognitive limitation (brain disorders), physical positioning, physical limitations (anatomical) and idiosyncratic sign/speech. All these paralinguistic issues influence all the actors of interpreting in tertiary classrooms. The way deaf students communicate in sign language to interpreters will most likely be a challenge for hearing interpreters who learn sign language later in life and are not as proficient in the language as deaf people (Bentley-Sassaman and Dawson, 2012, Moody, 2011). Other factors such as the visibility of the handshapes of deaf students all could present paralinguistic demands to interpreters. Lectures accent, speed of delivery could affect the way interpreters hear and understand what is said in the classroom.

3.3.1.4 Intrapersonal demands

Whereas Dean and Pollard believe that environmental demands are the first to be confronted, I posit that before any person encounters the environment, they have their personal attributes they bring to the interactions. Therefore, in terms of hierarchy, I think interpreters' intrapersonal demands should be considered before any other demands. These demands are the interpreters' inherent factors that pose challenges to their successful engagement in the interpreting process. Those factors usually include thoughts (feelings, emotions), physiological distractions, and psychological responses (Biggs, 2001, Biggs, 2003). Dean and Pollard (2013) described these factors to be predictors of the performance of the interpreters in the process. Interpreters' proficiency in interpreting (Leeson, 2012, Leeson et al., 2008, Powell, 2013), educational background (Bontempo, 2012, Schick et al., 2006), knowledge of course content (Heyerick and Vermeerbergen, 2012, Napier, 2016), emotional stability and ability to deal with a crowd all contribute to the way they can provide best practices in sign language interpreters for their consumers in tertiary classrooms.

All these demands irrespective of what shape or form can have a significant impact on the rendition of interpreting services in tertiary classrooms. It is also dependent on how a demand is analysed, for example, a paralinguistic demand could as well be an intrapersonal or interpersonal demand. This study will make known some of the

demands of interpreting in tertiary classrooms. After describing the various demands of interpreting in the context of the classroom, I will also discuss some control options that Dean and Pollard (2013) suggested could be used to manage the demands.

3.3.2 Controls options

Having the resources that are required to contain the demands that will emerge in an interpreting situation means an interpreter is employing control options (Dimitrova and Tiselius, 2009, Gile, 2009, Herring, 2018, Ribas and Vargas-Urpi, 2017). Controls in interpreting do not imply that interpreters control the interpreting process (Dean and Pollard, 2013). Dean and Pollard postulated that controls are responses to a demand that emerges in a given interpreting setting. Having controls as an interpreter means that interpreters can perceive, learn, process, remember and evaluate the situations in interpretations (Bontempo, 2012, Herring, 2018, Ribas and Vargas-Urpi, 2017). Interpreters need to display their cognitive abilities by performing a given task appropriately using flexible signing, understanding of spoken and sign language, accuracy and speed in signing, and the ability to recognise and use the parameters (handshapes, orientation, location, movement) of signing, facial expressions and signing space (Guion and Highhouse, 2004 , Herring, 2018, Ribas, 2012). Aside from the qualities, interpreters need also to have content-related knowledge to manage some of the demands that may emerge in an interpreting scene (De Meulder, Napier and Stone, 2018). Bontempo (2012, p. 5) encourages interpreters to acquire a "*mixture of values, temperament, coping strategies – traits that are predictable, enduring and that influence behaviour and reactions in a variety of situations. Contextual knowledge refers to knowledge of how to act in various situations – how to cooperate with people and interact professionally. Contextual skills are the skills involved in managing those interpersonal relationships and behaving effectively in a variety of environments. Personality, contextual knowledge and contextual skills impact on contextual performance.*" Guion and Highhouse, (2004, p. 60) explained contextual performance as "*aspects of performance unrelated to specific tasks*." Professional interpreters must elevate themselves by possessing both the contextual and task performances in executing their jobs so that most of the demands that may

come up in the process of their jobs have a control option employed. The output of interpretation cannot be the sole yardstick for evaluating the quality of performance of interpreters, other factors such as their professional conduct, and general appearance to work all need to be considered in assessing the quality of interpreters (Kalina, 2002).

In tertiary classrooms, interpreters make several decisions to manage the various demands they encounter. Each actor who is engaged in the interpreting process brings their background knowledge, personality traits, skills, attributes (e.g., sense of humour, studiousness, well-read, punctuality, education and physical fitness) and experiences (de Wit, 2011, Heyerick and Vermeerbergen, 2012, Leeson, 2012, Marschark et al., 2005, Napier and Leeson, 2016). When interpreters connect effectively with these resources, they can become useful control options that will help in their assignments. Dean and Pollard categorised control options into three: pre-assignment, assignment, and post-assignment control options.

3.3.2.1 Pre-assignment control options

Pre-assignment control options are the controls interpreters bring to the assignment such as their background, personality, attributes, and education (Dean and Pollard 2013). They include any form of preparation an interpreter makes before the assignment. Some pre-assignment control options are the kind of clothes interpreters wear, interpreters meeting with lecturers and deaf consumers, and familiarising themselves with the content of the lecture before time. Pre-assignment control options equip interpreters with confidence in executing their assignments (Bontempo, 2012, Heyerick and Vermeerbergen, 2012, Leeson, 2012) because it limits the amount of omission that interpreters may have in an assignment (Napier, 2011). Dean and Pollard proposed that interpreters also employ assignment control options.

3.3.2.2 Assignment control options

Assignment control options are those controls that interpreters employ during interpreting (Dean and Pollard, 2013). These control options include all the decisions interpreters make when they execute their duties (Bentley-Sassaman and Dawson,

2012). The actions interpreters take or do not take during an assignment are all classified to be part of the control options employed during the process. For interpreters to provide appropriate assignments controls in the classroom, they need to first anticipate all the demands before the start of an assignment. This will give them a background of the measures required to provide the best interpreting practices for their consumers in the classroom. It is often easy for interpreters to provide effective assignment controls when they work in teams (Bentley-Sassaman and Dawson, 2012, De Meulder, Napier and Stone, 2018). Working as a team will help the 'inactive' interpreter (one not interpreting) furnish the 'active' interpreter (one interpreting) with the necessary support during the assignment. Interpreters who work solo, irrespective of their proficiencies, are more likely to be ineffective (Bentley-Sassaman and Dawson, 2012) in tertiary classrooms, particularly in a context where the class activities extend to about one hour (Hoza, 2010, Stone, 2007).

3.3.2.3 Post-assignment control options

Dean and Pollard (2013) explained that post-assignment control options are the controls that are employed when an assignment is over. These control options include the discussions interpreters have with their consumers about the assignment, the discussion with team members after an assignment, the reflections that interpreters have on their tertiary classroom assignments (Maroney et al., 2020, Maroney et al., 2018a, Maroney et al., 2018b, Maroney et al., 2016). When these reflections are done, they develop interpreters' thinking on how to approach their next assignments (Bentley-Sassaman and Dawson, 2012, Bentley-Sassaman, 2009) and may turn into pre-assignment controls.

Having established from literature that various intrapersonal, interpersonal, paralinguistic and environmental demands influence interpreting in the classrooms and appropriate controls need to be employed to manage the demands, it gives the understanding of interpreting within the classrooms. However, in the classrooms, interpreters mediate the interactions between deaf students and lecturers that need also be examined from the literature. To examine the classroom interactions, the next research questions that investigate the interactions of the classrooms also emerges:

d. What is the nature of the classroom interactions between deaf students, lecturers and interpreters?
    i. What collaboration exists between the deaf students, lecturers and interpreters in facilitating the classroom interactions?

The next chapter of the study of the study reviews literature on the interactions between deaf students, lecturers and interpreters in tertiary classrooms

Chapter 4

Interactions between deaf students, lecturers and interpreters in tertiary classrooms

The review of the literature in this chapter is organised around deaf students' readiness for tertiary education, lecturers' engagements with interpreting, interpreters' proficiencies for mediating tertiary classroom interactions, and institutions' support for students diversities.

4.1.1 Deaf students' readiness for tertiary education

Deaf students need to be prepared to learn through interpreting in tertiary classrooms. Although some deaf students communicate through sign language, they vary significantly on when they were first exposed to the language (Emmorey, 2004, Wang and Napier, 2013b). Deaf students who have deaf parents often have signing experiences and acquire sign language as their first language, right from birth to adulthood just as most hearing people do (Emmorey 2004, Johnston and Schembri 2007, Marschark 2002, Wang and Napier 2013a, Wang and Napier 2013b). However, the majority of deaf students (90%) are born to hearing parents who could not sign, and provide little communication support, so they often have limited signing experiences from birth (Emmorey, 2004, Johnston and Schembri, 2007, Wang and Napier, 2013b, Wang and Napier, 2013a). Hence the majority of deaf students have varied language experience from childhood (Emmorey, 2004, Marschark et al., 2005, Mitchell and Karchmer, 2004, Traxler, 2000, Winston, 2004). Research on the language development of students has shown a significant relationship between early language exposure and reading skills among the students (Leeson, 2006, Marschark et al., 2004, Strong and Prinz, 1997). When deaf students have early sign language experience, they can learn and achieve better even than deaf students who have hearing technology support but without early language experiences (Meinzen-Derr et al., 2018). The majority of deaf students who enter into tertiary classrooms without early years of language support often struggle to learn.

Often in tertiary classrooms, there is the assumption that all deaf students know the sign language that is enough for them to receive education through interpreting (Heyerick and Vermeerbergen, 2012). Most deaf students at the primary level are mainstreamed or educated in schools for deaf without any interpreting services (Fobi and Oppong, 2019, Oppong and Fobi, 2019). Very few mainstream schools that admit deaf students provide interpreting services for deaf students (Fobi and Oppong, 2018, Heyerick and Vermeerbergen, 2012, Oppong and Fobi, 2019). Even in bilingual-bicultural settings, Heyerick and Vermeerbergen indicated that teachers often employ simultaneous communication (which is predominantly a spoken language with few signs) for teaching deaf students. In schools for deaf, they also indicated that although sign language is the language of instruction, very few hours in a week are dedicated to the teaching and learning of sign languages. Often in cases where such classes exist, the activities in the class are centred on teaching social skills rather than the language. *"The question remains whether this spontaneous picking up of the language combined with the fairly limited access to structured Sign Language lessons at school leads to a sign language proficiency that is adequately developed in cognitive terms in order to gain an optimal understanding of the subject matter when the pupil moves from special needs education to mainstream education..."* (Heyerick and Vermeerbergen, 2012, p. 125). Concerns raised by Heyerick and Vermeerbergen do not differ from the contextual issues deaf students in Ghana encounter. In Ghana there is limited early years support for deaf students since about 80% of them are identified as deaf before their third birthday (Oppong and Fobi, 2019). This is due to the fact that in Ghana there is no systematic universal national hearing screening programme (Oppong and Fobi, 2019). Hearing screening mainly takes place at regional centres through behavioural testing after referral. Furthermore, most children grow up in multilingual environments where there is less emphasis on sign language and interpreting. This often affect the sign language development of deaf children.

4.1.1.1 Academic readiness

In higher educational settings, students are adults, and have the responsibility to foster social development and more formal academic learning. Whereas teachers and interpreters are expected to contribute their quota to support in sustaining inclusion for deaf students, the students also have an integral role to play in preparing adequately for academic challenges in tertiary institutions. After completing secondary schools, a very low number of deaf students can progress to higher educational institutes (AHEAD, 2001, Conway, 2006, Lang, 2002, Leeson, 2012, Mathews, 2007). The cause of this low progression to tertiary level could be attributed to the fact that the students have negative academic experiences during their basic and secondary education (Leeson, 2012, Oppong and Fobi, 2016, Oppong et al., 2018). Oppong and Fobi, and Oppong et al. explained that deaf students who have high academic achievements at the basic and secondary schools are more likely to succeed in tertiary institutions. This raises the issue of helping the students to have high academic achievements before they enrol in tertiary education. Often in higher educational institutions, students are admitted on a merit basis and deaf students need to pass the required core and elective subjects (Oppong and Fobi, 2019).

Aside from the academic qualifications, deaf students require academic skills to survive in higher educational institutes (Leeson, 2012). Leeson stressed the need for deaf students to be prepared and equipped with skills that aid them in coping with the social and academic demands of tertiary level learning. Students at this stage should have the ability to make decisions independently and be motivated to initiate a task which promotes the academic competency in learning.

Irrespective of the personal, social and academic qualities or the country a deaf student is from, most have obstacles as a result of lack of or inaccessible early intervention programmes (Lang, 2002, Marschark et al., 2002). So, when such students enrol in tertiary education, tertiary institutions find it difficult managing the students since they do not have the opportunity to influence parents, basic and secondary schools on how to prepare deaf students for post-secondary education (Marschark et al., 2002). Lang (2002, p. 275) espoused that *“The challenges of early*

intervention and academic preparation in elementary and secondary programmes have an undeniable direct bearing on the academic success of deaf students in post-secondary education. For as long as colleges and universities are unable to effectively assist elementary and secondary school professionals and parents of young deaf children during the critical early school years, post-secondary programs will be doomed to post-hoc, band-aid programming."

Therefore, education at both the primary and secondary school levels for deaf students must be modified (in collaboration with tertiary institutions) to include career guidance and the need for deaf students to be self-reliant in their education (Lang, 2002, Marschark et al., 2002).

In Dean and Pollard's (2013) explanation of the role of deaf students in interpreted classes, they stressed the need for the students to understand their role and know how to make interpreting effective at higher educational institutes. To have the best of interpreted lectures, deaf students need not only to be active in the process, but they also need to make adequate academic preparation for the courses in the universities even before they attend lectures (de Wit and Sluis, 2014, Turner and Harrington, 2000).

4.1.1.2 Knowledge about how to use interpreters

It may be assumed that since deaf students have progressed through basic and secondary education and are now in higher education, assessing learning through interpreters may be easy for them because of their familiarities with such services (Maroney 2016, Maroney et al., 2020). Often in the tertiary classrooms, most deaf students are unaware of the services and support available to them at tertiary institutions (Oppong, Fobi, Adu and Acheampong, 2017, Leeson, 2012, Maroney, 2016). The few deaf students who are aware, often do not know how to use those services (Maroney, 2016, Maroney et al. 2020). They might have heard of such services in the abstract, but, they do not know how such services are used in educational settings (Leeson, 2012, Maroney, 2016, Maroney et al. 2020). Schick and Williams (2007) advocated for discussions on how deaf students use interpreters

in educational institutions to centre on whether the students are ready developmentally to use such services.

The next to be reviewed is literature on the lecturers' engagements with interpreting in tertiary classrooms.

4.1.2 Lecturers' engagements with interpreting in tertiary classrooms

Although the literature has indicated that teaching can either be student-centered or teacher-centered (Lea et al., 2003), a third approach, the learning-centered (Calkins and Light, 2008, Light and Calkins, 2008) also exists. The learning-centered approach is the method in which teachers engage, and guide students to develop ways of improving their reflection and active participation, and understand phenomena based on their self-initiative (Calkins and Light, 2008, Light and Calkins, 2008). Learning-focused teaching may also facilitate student learning and help students to actively reflect on what they have learned to develop their conceptual understandings.

Teachers who teach at inclusive higher educational institutions will need to adapt to teaching some of the learners who use interpreters (Bontempo, 2012, Leeson, 2012, Russell, 2017). Deaf students in tertiary institution classrooms require some accommodations in order for them to be fully involved in classroom activities (Leeson, 2012). Since deafness impacts every aspect of the students' life and learning (Salter, 2015, Salter et al., 2017), teachers will have to develop an understanding of who their learners are (Napier and Leeson, 2016), and devise means of teaching them through interpreting. This is so for most lecturers because they often do not have deaf students and interpreters in their classes (Adu, 2016, Oppong et al., 2018), so teaching deaf students through such means is a new phenomenon to the majority of teachers who work in tertiary classrooms. In inclusive classes, lecturers who teach the students must know how to utilize and be effectively involved in the interpreting process (Maroney et al., 2018). Effective use of interpreting services requires an accurate understanding of the interpreter's role and responsibilities as well as the teachers' contributions when interpreters are present in their classrooms.

Mainstreaming deaf students with their hearing colleagues requires some adaptations to help them communicate effectively and fine-tune to the activities in the classroom. Researchers (Harmer, 1999, Heyerick and Vermeerbergen, 2012, Leigh and Pollard, 2003, Marschark et al., 2004, Napier and Leeson, 2016, Nicodemus and Emmorey, 2013, Winston, 1994) argue that communication provides accessibility to deaf students. Therefore, whatever information being delivered in tertiary classrooms, for hearing students to perceive and understand, should also be produced for deaf students. Producing such accessible information for deaf students requires that teachers either communicate directly in sign or through means which will help deaf students to participate in classroom activities.

Teaching is a social entity that is dynamic when teachers' knowledge of their field is considered (Dollerup, 1995). Teachers' adaptive strategies and methods of teaching learners, classroom management approaches, and the structure of lesson delivery and assessment techniques are those which are required to drive inclusion for deaf learners (Guerriero and Van Damme, 2013). Effective teachers need to employ warm language, give detailed explanations and promote students' critical thinking and questioning skills to achieve excellence in the classroom (Bain, 2004). It is also crucial that teachers reflect on their teaching in the classroom to find ways of engaging with interpreting in order to improve their interactions with their students. Teachers at tertiary education levels can reflect on their lessons by continuously engaging themselves in professional developments in their domain of expertise (Skelton, 2005).

Cowan (2006) and Skelton (2005) added that for teachers to reflect successfully on their lessons with students, it is expedient for them to add their personal qualities with their teaching activities to promote teaching excellence in tertiary institutions. Patrick (2011) explained personal qualities and commitments by listing five traits that teachers need to possess. The five characteristics are: 1) neuroticism (an individual’s emotional stability such as self-consciousness); 2) extraversion (interpersonal interaction skills); 3) openness to experience (interest in new experiences and ideas); 4) agreeableness (the ways in which one interacts with others such as trust,

sympathy, helpfulness, and compassion); and 5) conscientiousness (the ability to be organised and motivated). Mann (2016) also suggested six roles for university lecturers as 1) expert; 2) person; 3) facilitator; 4) ego ideal; 5) formal authority; and 6) socialising agent. McKeachie and Svinicki (2013) further explained that out of the six traits outlined by Mann, the teacher being an expert, formal authority, and facilitator is the most effective and satisfies the requirement for promoting effective teaching at higher education institutions. Lectures must have control over the content they teach and have the requisite knowledge in order to be effective to teach students in tertiary classrooms. By this, they will need to facilitate learning among the students. Teachers need to be engaged in the classroom interpreting to ensure that deaf learners are not left out in their class activities and facilitate critical and reflective things among the students. In his theory for university teachers, Ramsden (2003) regarded teaching as transmission, organising students and making learning possible. By Ramsden's theory, teachers are seen as experts and facilitators who concentrate on knowledge impartation and communication for successful learning outcomes. When teaching, effective university lecturers vary their teaching strategies and responsibilities in the classrooms to help students achieve their best in them and promote effective learning.

Although literature has indicated that teaching can either be student-centered or teacher-centered (Lea et al., 2003). Calkins and Light (2008) and Light and Calkins (2008) argued for a third approach called, learning-centered. They explained the learning centered approach as that method in which teachers engage, and guide students to develop ways of improving their reflection, active participation and understand phenomena based on their self-initiatives. Learning-focused teaching may also facilitate students' learning and help them actively reflect on what they have developed to develop their conceptual understandings.

Teachers who teach both deaf and hearing students in higher educational institutions will need to adapt to teaching some of the learners who use interpreters. Deaf students in tertiary institution classrooms require some accommodations in order to be involved in classroom activities. Often such students attend classes with their

interpreters and lecturers are expected to meet their unique learning needs while they also actively involve themselves in the interpreting process. Since deafness impacts every aspect of the students' life and learning (Salter, 2015), teachers will have to develop an understanding of who their learners are, and devise means of teaching them through third parties (interpreters). This is so for most lecturers because they do not often have deaf students and interpreters in their classes, so teaching deaf students through such settings is a new experience to the majority of teachers who work in tertiary classrooms. Because deaf students and interpreters are not often part of their classes, lecturers who teach the students must know how to utilize and be effectively involved in the interpreting process. Effective use of interpreting services requires an accurate understanding of the interpreter's role and responsibilities as well as the teachers' contributions when an interpreter is present in their classroom. The next section of the review discusses the interpreters' proficiencies in working with deaf students and lecturers at the tertiary level.

4.1.3 Interpreters' proficiencies in working with deaf students and lecturers at tertiary level

Though the number of years experience of interpreting could reflect interpreters' proficiencies, this often is not the case for some interpreters since they could be on their jobs for many years but may not be profient in interpreting. In Ghana there is no established mechanism for evaluating sign language proficiency at this time, or for evaluating interpreting competency. In some parts of the world, recently, there have been attempts to develop frameworks for interpreting. For example in recent times in Europe the Common European Framework of Reference for Sign Languages has been developled (European Forum of Sign Language Interpreters, EFSLI, 2013, Leeson, et al., 2016). Before interpreters work at the tertiary level, they need to come to the assignment with some level of proficiencies. This is because interpreting at the tertiary levels requires different levels of skills and competencies (Powell, 2013). Interpreters are individuals who interpret contents in sign language into spoken language or vice versa. The provision of quality interpreting at the tertiary level is often contingent on the state and recognition of sign language in that country (de Wit,

2011). De Wit added that if the sign language is seen as the major tool for educating deaf students and as such interpreting services are needed for them to succeed in their education, then there will be a greater chance of promoting professional training for interpreters. The ability to mediate between languages is not sufficient to predict the competency of interpreters in educational settings. Sign language interpreters need to master a wide range of skills in interpreting to use in higher educational institutions (Gile, 1998, Leeson, 2006, Leeson, 2012). Skills needed in addition to language competency include but are not limited to working bilaterally between both spoken and sign languages (Leeson, 2012). Interpreters also need the luxury of time to practice simultaneous interpreting[7] in a particular field of education to be acquainted with interpreting the content of that subject area. Simultaneous interpretation at the tertiary level requires a high level of cognitive skills (Leeson, 2012). One reason for this is that the quality of interpreted messages declines as interpreters work for more than 20 minutes because cognitive fatigue sets in when interpreters work for more than 20 minutes (Bentley-Sassaman and Dawson, 2012, Leeson, 2012).

Kaminskienė and Kavaliauskienė (2012) examined the competence in interpreting and translation of student interpreters who work in the European Union (EU) institutions. They sampled lecturers, employers, student interpreters and alumni who had gone through interpreting training from Vilnius University. For the study, Kaminskiene and Kavaliausekiene analysed responses from two independent questionnaires. Their survey was designed by the European Masters in Translation document. The survey was meant to elicit responses to the basic competence necessary for translators in various agencies. They analysed two samples of responses, each of which contained opinions of 4 groups of respondents. The findings of the study revealed respondents' attitudes to the acquisition of competences in translation and interpreting at the tertiary level. The study found that

[7] Simultaneous interpreting is a type of interpreting in which the speaker speaks/sign and the interpreter changes the speech/signs into a language of the consumer at the same time.

interpreters receive the necessary training needed for their interpreting work. However, comparing the responses from the two different questionnaires, the authors found that it was not only the employers who were satisfied with the interpreting skills of their employees but the lecturers, students, and alumni agreed that the training they received from the university was enough to help them in their interpreting jobs. Kaminskienė and Kavaliauskienė's (2012) study is set apart from this study because their study focussed on developed countries in the global north whilst this study was based in the LMIC context. Again, this study is different from Kaminskienė and Kavaliauskienė's (2012) study because it did not only examine the competence of interpreters but also investigated the actors' socio-cultural understandings of inclusion and interpreting and the DC-S considerations that these understandings have on the interpreters.

4.1.3.1 Training and skills

Interpreting has been seen as a voluntary and charitable activity that hearing people who had some level of proficiency in sign languages offered to deaf (Napier and Leeson, 2016). Although informal education for sign language interpreters existed in the 1960s (Ball, 2013), the Deaf community relied on their judgment and experiences to rate the competences of their interpreters since there was no formal assessment of competence for the interpreters (Cokely, 2005). Mindess (2014) explained that interpreters during that time saw themselves as contributing their quota to the Deaf community but did not necessarily see themselves as 'sign language interpreters'. Mindess added that those contributions interpreters made at the time did not qualify them to be recognised as professionals since they were not remunerated for the services they provided to deaf consumers. In 1972, Napier and Leeson (2016) report that the Registry of Interpreters for Deaf (RID) was set up in the US to bring professionalism to the work of interpreters. Cokely (2005) explained that the mandate of RID was to test, evaluate and certify qualified interpreters. This practice by RID is now being adopted in many different countries.

The fact is that interpreters need to be assessed and certified as practitioners, there is the need to provide some formal training for the interpreters. Leeson et al. (2013)

indicated that there are trainings available for interpreters in tertiary institutions in the Western world. Leeson et al. further explained that some countries in that part of the world have set up a minimum academic requirement of the bachelor's degree before one can be allowed to practice as an interpreter. However, little or no such training and recognition for interpreters exists in developing countries, particularly in Sub-Saharan Africa. In Ghana, sign language interpreters have academic qualifications to work in tertiary institutions, however there is no professional body that certifies such interpreters for them to be regarded as professional interpreters. Leeson et al., (2013) explained that, in some parts of the world, codification in the expectations of educational programmes has been increased for interpreters. Even the level of provision for interpreter training varies in different countries. Whilst some countries have master's programmes training for interpreters (Leeson et al., 2008, Leeson et al., 2011, Napier and Leeson, 2016), other countries do not have any formal training for interpreters and rely solely on the informal trainings organized by the Deaf communities (Napier, 2002, Napier, 2005, Napier, 2011, Napier and Leeson, 2016). Leeson and Vermeerbergen (2010) further stated that even in countries where established educational channels exist, some interpreters including children of deaf adults (Codas), deaf interpreters, chaplains, teachers of the deaf, and hearing people who have acquired some signing skills, have still not received any formal training to practice. Reasons for this include the fact that most countries are still facing challenges in meeting the requirement for professional interpreters.

Although using people who have a strong academic background brings benefits in terms of wider societal recognition of sign languages and interpreting, it has also functioned as a wedge between the interpreting community and Deaf communities they serve (Napier and Leeson, 2016). Cokely (2005, p. 16) stated that interpreters have progressed from being 'service agents of the Community' to be 'service providers for the Community', leading to a consumer-driven model of interpreting. Napier and Leeson explained that this progression has also meant a move away from the process of selecting and training interpreters within the Deaf community, which has thus lost its gate-keeping role in this respect. One suggestion is that interpreter education programmes work to bridge the ensuing gap by ensuring that student

activities in the community are seen by Deaf communities as beneficial to them (Monikowski and Peterson, 2005) and that programmes are seen as being "of the community" even if individual would-be practitioners are not (Cokely, 2005). Further, in a rising number of countries, licensing bodies and interpreter associations, such as the World Association of Sign Language Interpreters (WASLI) and the European Forum of Sign Language Interpreters (EFSLI) are requesting that practitioners engage in continuous professional development, creating a demand for high-quality, post-qualification, and in-service training.

4.1.3.2 Qualifications

Marschark et al. (2005) posited that although there is a shift in educating deaf students from segregated special schools to mainstream inclusive settings, there is a shortage of qualified interpreters to work for the students in such classrooms. Bontempo (2012) and Oppong and Fobi (2019) added that the shortage of interpreters could be a result of the fact that there is a limited number of institutions that train interpreters to be qualified and proficient to work in the educational setting. Marschark et al. further explained that educational interpreting for deaf students may not be as easy and straightforward as it may seem, yet many of the interpreters employed in such settings are unqualified or underqualified. In evaluating the quality and effectiveness of interpreting for deaf students in higher educational institutes, little research has been conducted.

Interpreters who work in higher educational institutes must acquire some level of academic qualifications. Schick and Williams (2007) recommend that all interpreters in such settings go through continual education training opportunities irrespective of their skills or knowledge levels. Since educational interpreting keeps changing over time and new phenomenon are introduced frequently, Schick stressed that interpreters should update their knowledge and skills through seminars, workshops, conferences, and online courses. In addition to their post-secondary (Bachelor's degree in educational interpreting or related field) training, interpreters are required to attain a minimum level of 3.5 on the Educational Interpreter Performance Assessment

(EIPA)[8] (Schick and Williams, 2007). Schick and William further explained that, although an interpreter may have a good bachelor's degree, if they are below 2.5 on the EIPA, they should not be allowed to practice in the classroom.

4.1.3.3 Interpreters' background knowledge of the content

Having knowledge and understandings of the contents that interpreters are required to interpret in the classroom gives them the control and the flexibility to facilitate communication effectively among lecturers and deaf students. Heyerick and Vermeerbergen (2012) stated that it is crucial that interpreters not only familiarise themselves with the vocabulary of the content they interpret but also need to learn how to communicate those concepts for their consumers to understand. Heyerick and Vermeerbergen stressed that it is unfortunate that as the vocabulary of different academic contents in higher education institutions keeps expanding rapidly, most interpreters struggle to 'keep up'. Again, the way languages are encoded also differs and that leads to lexical gaps of different kinds for which interpreters need to catch up. Sign language interpreters need to have some knowledge of the context they work in and adopt the best strategies to help in bridging the language and communication gaps to be counter-productive in the field they work in (Heyerick and Vermeerbergen, 2012, Napier, 2002, Napier, 2005, Napier, 2011, Napier, 2016). For instance, an interpreter who chooses to omit certain information based on not knowing the specific sign may deny the deaf consumer from learning the new terminology the teacher introduces in their class.

The interpreter who works in the educational setting needs to be well prepared to be effective in the classrooms. The preparation needs to go beyond just reading through the content the teacher will present in class beforehand. It also includes having time to learn the appropriate signs related to the content and find the appropriate signs

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[8] The EIPA is a tool designed to evaluate the sign-to-voice and voice-to-sign of interpreters' interpreting skills. The EIPA evaluates the ability to expressively and receptively interpret classroom contents and discourse of students and their teachers (Schick and Williams, 2007).

that will communicate the content to the deaf students. It sometimes even requires that interpreters meet with deaf students and agree on the signs to use on new vocabularies that may come up in case there are no specific signs for those concepts. Interpreters need to also have access to additional materials such as sign language dictionaries and videos that will assist them with the new concepts in the content they interpret. Before every lesson, interpreters need to get a holistic view of what teachers' intentions for lessons are. What goal is the teacher trying to achieve in the lesson, and what does the teacher want the students to learn in that lesson? Is the lesson practical, factual or theoretical? All these will guide the interpreter to know the best interpreting strategy to employ to help in achieving the goal of the lesson.

The next aim after understanding the goal of the lesson is to find ways of understanding the terminologies in the content. The interpreter needs to review teachers' lesson plans and the materials that will be presented in class. Interpreters need to contact teachers should there be any further clarifications needed in understanding the lesson. Additionally, interpreters need to analyse any material the teacher will present in class and predict the strategies and structure of the presentation of the teacher to prepare accordingly for such a lesson. It is important that whilst the interpreter reflects on the goals of the teachers, they predict the language that a teacher is likely to use and find signs appropriate for that language.

Bontempo (2012) stated that as opportunities to higher education for deaf students increase, they are likely to venture into any field of interest to them which may not be in the domain of the interpreters. She, however, suggested that interpreters must be well-read and familiarise themselves with the contents of different fields. By this, interpreters will be able to provide accurate interpretations to deaf students in their chosen fields in higher institutions. A challenging task for most interpreters in higher institutions as Bontempo noted is that there are a growing number of deaf students who use cochlear implants or are late learners of sign language who require interpreters who are versatile and cognisant of the needs of such students and find appropriate means of dealing with them.

Witter-Merithew and Nicodemus (2010) have advocated that for interpreters who practice in tertiary institutions to have controls of the contents they interpret, there should be some specialisations in the field. They stressed that specialisation in interpreting can exit either through ‘de facto’ or ‘de jure’ processes. Witter-Merithew and Nicodemus explained de facto specialists as those interpreters who have practiced in a particular setting, with particular populations, and within unique functions. De jure interpreters according to Witter-Marithew and Nicodemus are those who have adhered to national standards and have completed advanced educational programmes in specialist areas and have been certified to practice in those areas. When interpreters are specialists and work within those areas, they do not struggle to function and are very familiar with most of the concepts in those areas. A look must be given to interpreters who work in tertiary educational settings since they encounter different areas of specialty that they need to interpret. It will be good if more specialist interpreters are trained for deaf students in tertiary institutions to maximise the potential for effective communication in those settings and also allow deaf students to select programmes of their choice.

4.1.3.4 Interpreters’ role in tertiary classrooms

In classroom settings, interpreters interpret what teachers or hearing students say in spoken English into sign language for deaf students. They also interpret what deaf students sign into spoken language for hearing students and lecturers. Interpreters' presence in the classroom settings facilitates interactions between lecturers, hearing and deaf students. They are not to participate in the class. Interpreters in educational settings are tasked to ensure that whatever information is accessible to hearing students in the class are also accessible to deaf students. Even the distractions caused by students in the form of coughing or whispers should be made known to deaf students in the class. Any comments or questions from deaf students should also be made known to the hearing people in the class. By doing this, interpreters ensure that information is available and accessible to both parties equally (Fobi and Oppong, 2019, Napier, 2002, Napier, 2005, Napier, 2011, Napier, 2016, Witter-Merithew and Nicodemus, 2010).

In educational settings, interpreters must participate in meetings such as staff meetings, and individualised education programmes (IEPs) (Schick and Williams, 2007). Schick and William explained that interpreters can provide meaningful contributions to students in staff meetings and can respond to some of the questions about the students. However, it is important that when interpreters work as staff members, they should not interpret in meetings since that will not allow their effective participation in the meetings. Furthermore, when interpreters are available in meetings to interpret, they should ensure that they do not participate in the meeting.

Bontempo and Napier (2007) surveyed the perceptions of the knowledge, skills and abilities that interpreters need for effective practice in Australia. Sign language interpreters were required to rate the significance of the identified key knowledge, skills and abilities for professional practice based on the literature. They also rated their competence as practitioners on the parameters identified in the literature. Again, interpreters rated their competence base on their perceptions of their performance at work. Bontempo and Napier ran a skill gap analysis to determine whether or not the differences between the ratings on importance and competence on each knowledge, skill, and ability were significant. They found that the interpreter accreditation level came up as a significant dimension in the context of the self-reported level of competence and skill for sign language interpreters. What Bontempo and Napier did not consider in their study was the expectation of deaf students on the interpreters and the collaboration that exist between the consumers of interpreting services and the interpreters to ensure classroom interactions that facilitates learning. This study would address this by examining deaf students' expectations of interpreting in tertiary classrooms. Again, this study will analyse the interactions of the actors of tertiary classroom interpreting to establish their collaboration in promoting inclusion.

4.1.3.5 Professional conduct

Professional conduct in executing one's job is significant particularly for interpreters. Interpreters need to dress in a professional manner taking into consideration the contrast between their dresses and the background of their location in the interpreting venue. They should have dresses which have a contrasting colour to their skin. An

interpreter's appearance needs to be non-distracting to prevent eye fatigue among deaf students. Facial hair should be shaved to allow clear viewing of lip movements. It is expected that interpreters have task-related knowledge such as knowing the principles and procedures related to the function of their job, including the code of ethics for example, and task-specific skills such as the technical linguistic skill needed to perform the duty of interpreting to the standard required, and a knowledge of the vocabulary of the setting (Bontempo, 2012). These stated elements impact on task performance and are vital for interpreting. The next section of the review will discuss institutional support for diversity in tertiary classrooms.

4.1.4 Institutional support for diversity in tertiary classrooms

In discussing what goes on in interpreting in tertiary institutions, there is the need to explain institutional support for the process. Institutions play an active role in the recruitment and retention of staff who work directly with deaf students (Russell and McLeod, 2009). They are also responsible for setting the admission criteria for new entrant students. Therefore, institutions need to provide orientations of students to all students and staff and provide workshops that aim at teaching the interactions in the classrooms mediated by interpreting. When these above stated are identified, it will be useful to find out how institutions can monitor and evaluate sign language interpretations in their settings. The challenges these settings pose to the interpretation also need to be made known. Preparation for interpreting is a crucial component if interpreters are to promote effective communication using content-specific appropriate vocabulary. For preparation to be more effective, institutions need to do their best by providing interpreters with regular schedules and quiet offices where they can access books, internet, and other resources that will facilitate their works.

4.1.4.1 Recruitment and retention of interpreters

In tertiary institutions, most administrators assume that the fact that they hire interpreters for deaf students means that all should be well with the students (Russell and McLeod, 2009). Russell and McLeod added that, that is not be the case since

most interpreters are not qualified to mediate between students and lecturers at higher educational institutions. McKee and Biederman (2003) stated that in the US and New Zealand for example, most deaf students do not have educational experiences which are comparable to their hearing peers as a result of the fact that institutions have employed inadequate qualified sign language interpreters to work with deaf students. In the Ghanaian context, interpreters who work at the tertiary level have some form of tertiary education and are sometimes familiar with the content of the course they interpret. This often facilitates their interpreting for deaf students because of their familiarity with the courses and the context of the interpretations. Though these interpreters are not retained to work permanently with the students, a situation which affects the quality of interpretations given to deaf students, they can bridge the gap of having a degree equivalent to the students or even have higher degrees than their students. Russell (2008) also indicated that sign language interpreters are provided for deaf students with the intent of bridging the language barriers between the students and their lecturers. However, most of the interpreters' input in an educational setting does not give deaf students the linguistic inputs that are required to provide full access to their learning environments, and that accounts for the majority of the students lagging behind in their academic and social participation (Russell, 2008). Deaf students must not be physically placed in institutions, qualified and competent interpreters should be provided for them to be fully engaged in the activities of their learning environments.

In America, Quinsland and Long (1989) reported on a study of deaf students who learned science. Two cohorts of deaf students were presented with sign language interpreters. One group had qualified interpreters whereas the other did not have a qualified interpreter. Findings of their study indicated that deaf college students learning science through a skilled interpreter scored approximately twice as high as those learning through an unskilled interpreter. The study also found 60 deaf students studying the human corporeal circulatory system under six treatment conditions, students retained significantly more information when learning from an instructor who signs for himself as compared to those who learned through unskilled interpreters.

There was no significant difference between the direct instruction and skilled interpreter conditions.

4.2 Summary

The literature review focused on the role of interpreting in mediating inclusion for deaf students. To get a better understanding of inclusion for deaf students at the tertiary level, literature was reviewed on the actors' understandings of inclusion based on their expectation in these contexts. These suggest that each actor has critical role to play to ensure that inclusion for deaf students who learn through interpreting could be achieved. Actors from different socio-cultural backgrounds come into tertiary classrooms with different experiences, knowledge and expectations. So, to achieve the goal of helping deaf students achieve their unique learning outcomes, there should be concerted efforts from all the actors in the classrooms. This could only be established when there is an examination of the actors' understanding of inclusion and interpreting in these contexts. Having established the understandings of the actors of inclusion, the demands and control considerations of interpreting in these settings were also discussed. This brought out the demands and control options of working in educational settings that supports inclusion of deaf students. Again, the review highlighted the interactions of tertiary classrooms in facilitating learning for deaf students. This aspect of the reviews provided the contributions that each actor has to make to support interpreting to mediate the classrooms interactions. Throughout the review, it became evident that few studies have focussed on the roles of interpreting in tertiary classrooms particularly in the low and middle income countries (LMIC). No single study had examined the actors' socio-cultural understandings of inclusion, and deaf students' expectations of interpreting in tertiary classrooms and their readiness for learning through it in these contexts. A methodological gap in the literature is that there is a scarcity of a single study that have utilised a one-to-one semi-structured interviews, survey questionnaires and videos to examine in the LMIC context the role of interpreting in the inclusion of deaf students in tertiary classrooms. This study investigates these issues and further examine the demands and control options of interpreting in tertiary contexts. The

study also provides a multimodal analysis of the classroom interactions between deaf students, interpreters and lecturers in the classrooms. The next chapter of this study presents the methodology used and how it was designed to address the research questions raised and the methodological gap identified from the review in this study.

Chapter 5

Methodology

5.1 Introduction

Having given the rationale and context for the study, and reviewed the relevant literature in the previous chapters, this chapter gives detailed descriptions of the overall research design adopted to address the research questions. It discusses the methods for data collection and the rationale for choosing them. The overarching research question sought to examine how interpreting mediates tertiary classrooms interactions between deaf students and lecturers in Ghana. To address this question, three sub-research questions were raised to examine: 1. Deaf students' expectations of interpreting in tertiary inclusion and the actors' socio-cultural understandings of inclusion; 2. The demand and control considerations of interpreting in the classrooms; and 3. The interactions between deaf students, lecturers, and interpreters in the tertiary classrooms.

These sub-research questions were also further developed into sub-questions and have been illustrated in Table 5-1. A multi-method approach is used to gather data through survey questionnaire, interviews and videos. This approach is explained in the next section of the methodology followed by the research design of the study. Afterwards, a report on a pilot study conducted as part of this study is presented to support the rationale for this methodology. Methods of data collections and the analysis processes are then presented, and ethical considerations made in the study which concludes the chapter.

5.2 Multi-method research approach

To address the research questions that examine the interconnected issues of interpreting and the inclusion of deaf students in tertiary classrooms, a research approach that combines multi-methods of data collection was employed (Christensen et al., 2014, Clark and Creswell, 2014, Creswell and Plano Clark, 2011, Fraenkel and Wallen, 2009, Gay et al., 2012, Hesse-Biber, 2010, Hesse-Biber et al., 2015). From

the literature review, studies have adopted different methods to examine segments of issues on interpreting (Bontempo, 2012, Bontempo and Levitzke-Gray, 2009, De Meulder et al., 2018, Heyerick and Vermeerbergen, 2012, Leeson, 2012, Napier, 2002, Napier, 2016, Roy, 1999, Russell, 2008) and on the inclusion of deaf students (Blankson and Kyei-Blankson, 2008, Marschark et al., 2006, Marschark et al., 2005, Marschark et al., 2004, Marschark et al., 2015, Power, 2003, Salter et al., 2017). However, a methodological gap exists in the literature on studies that integrate multi-methods to examine the dynamics of interpreting and its associated demand and control option considerations in the classrooms and the nature of the collaboration between deaf students, lecturers and interpreters to support the students' learing outcomes. Therefore, a multi-method research (MMR) approach which combined survey questionnaires, semi-structured one-to-one interviews and videos were used to collect data to develop an understanding of the role of interpreting in the inclusion of deaf students in tertiary classrooms in Ghana. Furthermore, in the pilot study of this project (see 5.3) it became evident that to address the research questions, allow the participants to express their views of the role of interpreting in tertiary classrooms and to generate verifiable robust data that allows for reflexivity; the MMR was appropriate for data collection and analysis (Gay et al., 2012p. 481).

Quantitative data were collected from survey questionnaires and were analysed using descriptive statistics to examine deaf students' expectations of interpreting and their readiness for learning through interpreting in tertiary classrooms (see Table 5.1). The qualitative data from the videos (which was multimodally analysed and the interviews analysed thematically) helped to get the participants' socio-cultural understandings of tertiary inclusion, interpreters' demand and control option considerations and the participants' interactions in the classrooms. These helped to address research sub-questions b, c and d. Therefore, both quantitative and qualitative methods were used to address the research questions of this study (Christensen et al., 2014, Hanson et al., 2005, Hesse-Biber, 2010, Hesse-Biber et al., 2015, Johnson and Christensen, 2008, Robson and McCartan, 2016, Teddlie and Tashakkori, 2009, Thomas, 2017).

Having discussed the research approach and the rationale for the approach, the next section will explain the research design chosen for the study.

5.2.1 Nested Mixed Methods Design

To address the overarching research question, as indicated in section 5.1, sub-questions were developed to guide the data collection required data that could: 1. Make known deaf students' expectation of interpreting and their readiness for learning through interpreting (to address RQa); 2. Reveal the actors' socio-cultural understandings of tertiary inclusion (to address RQb); 3. Bring out the various demands and control options of interpreting in the classrooms (to address RQc); and 4. Examine the nature of the interactions between deaf students, lecturers and interpreters in the classrooms (to address RQd). Therefore, different methods were required to address the nested questions from different perspectives. The expectations of deaf students on interpreting were surveyed and one-to-one interviews were conducted to establish participants' understandings of tertiary inclusion. These provided context for examining interpreters' demands and control options considerations; and the participants' interactions in the classrooms.

The primary processes involved in the collecting and analysing data was the qualitative approach because it helped to address most of the research questions (see Table 5-1 for how the methods addressed different research questions in this study). The secondary approach of data collection and analysis was the survey since it addressed only research sub-question RQa. The nested mixed[9] method design (Hesse-Biber, 2010, Hesse-Biber et al., 2015, Leavy, 2017, Onwuegbuzie and Collins, 2007) therefore was adopted to guide the study in order to collect and analyse data in a way that will address the nested research questions raised in the

[9] Nested mixed methods design is the type of research which uses one method (qualitative or quantitative) as the primary data collection tool and concurrently supporting it with a secondary data collection method (qualitative or quantitative) in the same study (Hesse-Biber, 2010; Hesse-Biber, Rodriguez and Frost, 2015; Leavy, 2017; Onwuegbuzie and Collins, 2007).

study (see Figure 5-1 for a diagrammatic view of nested mixed methods design). In this study since I wanted to cover the expectations of all tertiary deaf students on interpreting, survey questionnaires were appropriate to generate data that could support the interviews and videos. The nested design was appropriate for the study because it offered the opportunity of reflexivity regarding the quantitative data since the information from the survey questionnaires made known the expectations of deaf students on interpreting and their readiness for learning through interpreting in tertiary institutions rather than just providing demographic data and also because the research questions raised in the study were also nested (Hesse-Biber et al., 2015). In the nested research design, the dataset generated from each of the method addressed different questions (see Table 5-1) and were analysed at different levels in the study (Hesse-Biber, 2010).

The next section of the methodology describes a pilot study conducted as part of this project to support the rationale for the research approach.

Overarching Question	Research Questions	Sub-Questions	Data Generation Method	Participants
How do interpreters mediate interactions between deaf students and lecturers in tertiary classrooms?	**RQa** What expectations do deaf students have on interpreting, and what is their readiness for learning through interpreting in tertiary classrooms?		Survey Questionnaires	66 Deaf students
	RQb What understandings do deaf students, interpreters, lecturers, and heads of departments(actors) have on inclusion?		One-to-one semi-structured interviews	6 Lecturers 10 Interpreters 9 Deaf students 8 HODs
	RQc Given the actors' understandings of inclusion, what are the demand control considerations of interpreting in the classrooms?	**RQci** What are the demands of interpreting in the classrooms?	One-to-one semi-structured interviews	10 Interpreters
		RQcii What control options are employed to manage those demands?	One-to-one semi structured interviews	10 Interpreters
	RQd What is the nature of the classroom interactions between deaf students, lecturers and interpreters?	**RQdi** What collaboration exists between the deaf students, lecturers and interpreters in facilitating the classroom interactions?	Videos of classroom interactions	10 Interpreters 6 Lecturers 10 Interpreters 9 Deaf students
			Videos of classroom interactions	10 Interpreters

5.2.2 Table 5-1. Methods for addressing research questions

5.3 Ethical considerations in the study

To obtain permission to conduct this study in Ghana on human participants and institutions, ethics approval was sought for from the AREA Faculty Research Ethics Committee, University of Leeds. I obtained ethics approval for both the pilot and main study. The same body approved the pilot study in the UK and was granted (See Appendix A for AREA Faculty Research Ethics Committee's approval letters). Since the UEW did not have Research Ethics Committee, through my supervisors I wrote to ask for permission from the registrar of the UEW in Ghana (see Appendix C for the permission letter). The registrar through the head of the Department of Special Education approved for the study to be conducted in the university and other institutions through an introductory letter (see Appendix D for approval and introductory letter). Information sheets and consent forms were also designed for each of the cohorts of participants (HODs, lecturers, interpreters, deaf students) (see Appendix E for participants' information sheets and consent forms). The sheet spelled out the purpose of the study, introducing me and my role to each participant and the expectations of them in the study. The sheet also explained to participants their ability to decide whether to participate in the study. Again, the information sheet explained to participants how data will be collected and stored for the study. How the identity and names of participants were concealed in the study were also put on the information sheets.

After participants had read and agreed to be part of the study, consent forms were given to them to sign their names, and I also signed my part in their presence. I agreed with participants on the scheduled dates and time for the data collection. Participants were informed about their ability to withdraw from the study at any time if they wish to do so and data from such participants would have been excluded from the study. No participant withdrew from the study after giving their consent.

Participants were informed that data that was generated from them was kept strictly confidential and that it was only accessible to my supervisors and me. At all times, the data were saved on the University of Leeds's M-drive, which I am the only person who could access using the University's secured password system. I made sure that

all the statements made in participants' information sheets were complied with throughout the data collection, storage and analyses stages.

5.4 Pilot study

To test the feasibility of my study and shape the research questions, I conducted a pilot study on January 25, 2018, on deaf students, lecturers, and interpreters involved in interpreting facilitating the inclusion of deaf students in a tertiary institution in the UK. Two lecturers, two interpreters, and two deaf students were involved in the pilot study. The lecturers had taught deaf students through interpreters for more than an academic year. The interpreters had over one academic year experience in interpreting for deaf students in tertiary educational settings. All the interpreters had qualifications from CACDP (The Council for the Advancement of Communication with Deaf People, and were registered Bristish Sign Languaage (BSL)/English interpreters of National Registers of Communication Professionals working with Deaf and Deafblind People (NRCPD). The deaf students were post-graduate students who have been on their programmes of study for over an academic year. They were congenital deaf students who use Bristish Sign Language as their first language and also had a bachelor's degree through interpreting services. The lecturers booked the interpreters for the deaf students through the University of Leeds Disability Services to facilitate communication during luctures. I chose these three cohorts of participants in the UK for the pilot study because they were involved in a similar process as participants who were included in the main study.

Furthermore, to avoid the possibility of generating data that is similar to that to be collected in the main study and the possibility of deviating from the methodological intent of the pilot study, I chose the participants of the pilot study from the UK. Ethics approval from the ESSL, Environment, and LUBS (AREA) Faculty Research Ethics Committee, University of Leeds to conduct the pilot study on participants was granted (See Appendix B for light touch ethics approval letter for the pilot study). Participants were given information sheets which contained the purpose of the study and consent forms on the pilot study and they willingly agreed to participate in the study by signing

the consent forms. Generally, the two groups of participants (deaf students and interpreters) were involved in focus group discussions to find out whether the proposed methods for data collection were applicable for the main study and their general impression of each other in terms of preparations for tertiary interpreting was ascertained. I observed all the participants to see how they interact during the lecture. Also, I videoed allthe participantsin a lecture for 15 minutes. In the videos it was observed that lecturers engaged with the deaf students through the interpreters throughout the lesson. Interactions with the participants in the pilot study gave insight into the feasibility of the main study. In the focussed group discussion, I observed that even when questions were evenly distributed to the participants some participants interupted others and were dominant in the discussions and gave very little opportunities for others to equally participate in the study. This gave me the understanding that to get all actor's understandings of the role of interpreting in the inclusion of deaf students and allow participants to freely express their views I needed to conduct one-to-one interviews with the participants.

Participants were also given the research questions of the study and asked to suggest possible ways of rephrasing the questions to reflect the aim of the study. Interactions and inputs from participants helped in rephrasing, rearranging and deleting some items in the research aim and questions (see Appendix I for rephrased research questions). The pilot study helped me with the experience of conducting studies with stakeholders involved in interpreting in a tertiary institution. It aided me in the main study in generating data to address the research questions. Before the pilot study, I thought the experiences of participants in the pilot study and that of the main study would be different since the pilot study was conducted in the global north whilst the main study was conducted in the south. However, it is worthy to note that data generated from focus group interviews and the video analysis of the lecture in the pilot study revealed a similar pattern of interactions between the two settings. Both the interpreters and deaf students also expressed similar experiences in working with each other at the tertiary level which was not different from what I had anticipated for the main study. Data from the classroom interaction was gathered from one video camera. In the analysis, it was noted that to capture participants from different angles

and to pay attention to all the actors, it was worth using two cameras to generate the interaction data. It was also revealed in the pilot study that, due to the duration for this study and to get more deaf students to examine their expectations on interpreting, survey questionnaires were appropriate for the data collection. Therefore, the expectations of deaf students were surveyed through questionnaires. These findings from the pilot study encouraged me to focus on using multiple methods and from a different cohort of actors to examine how interpreting mediates tertiary inclusion. It gave me the idea of the sample size to work with and the duration needed for the classroom videos.

Next, after the pilot study are the methods used in gathering data for the study.

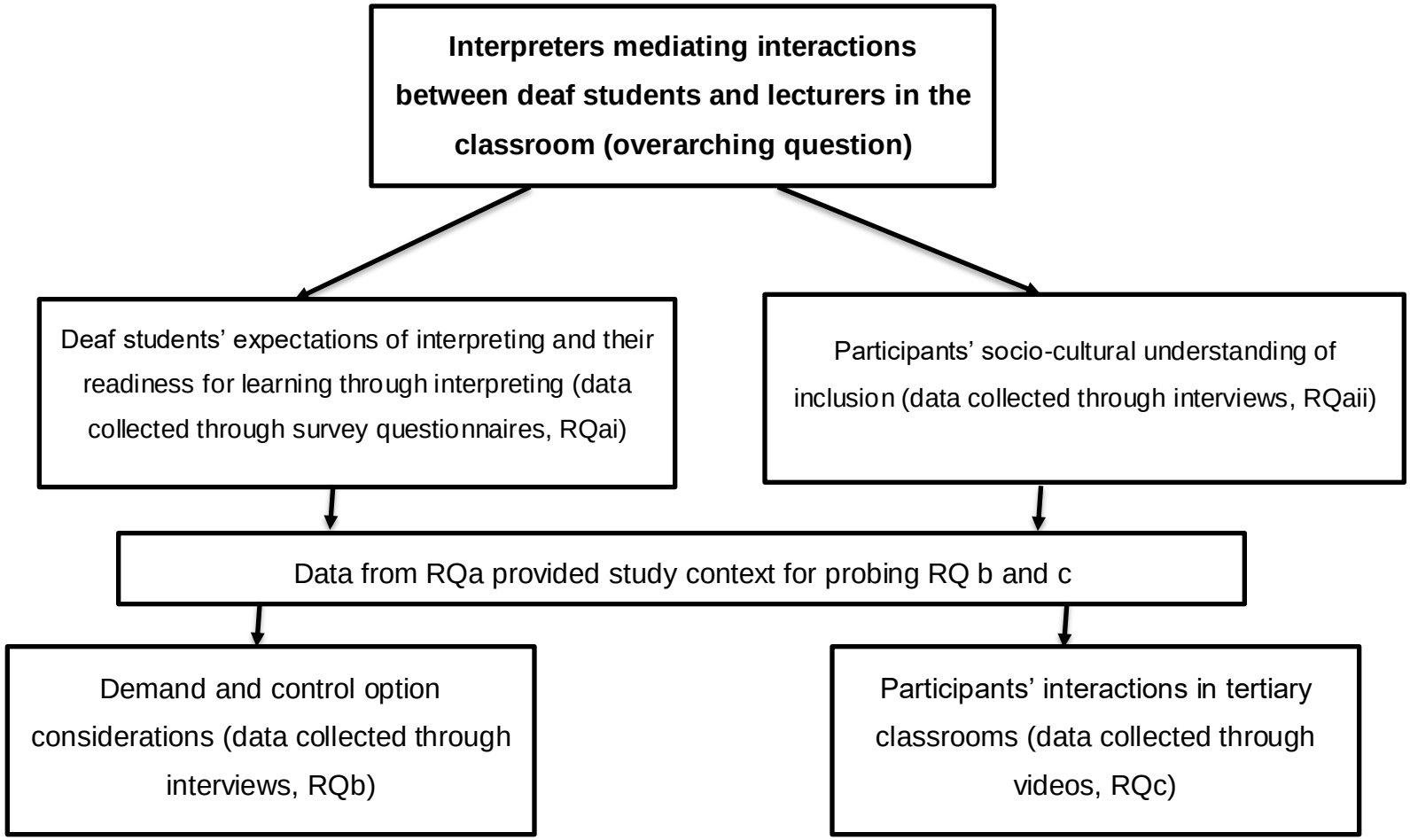


Figure 5-1. Nested Mixed Methods Design (Quantitative nested in qualitative design)

5.5 Methods for data collection

Survey questionnaires, semi-structured one-to-one interview and videos of classroom interactions were used to collect data from different participants for the study (See Appendix F for protocols for data collection).

5.5.1 Survey

Communication questionnaire was adapted from (Marschark et al., 2004) for the study (see Appendix G for adapted communication questionnaire). Marschark et al. developed the questionnaire to elicit responses from deaf students on how they perceive interpreting and their preferred mode of communication at educational institutions. The survey was administered to participants in English. I adapted this questionnaire to suit the research questions and context of the study to survey the expectations of deaf students on interpreting in tertiary institutions in Ghana. The questionnaire was grouped into three sections: demographics, deaf students' readiness for learning through interpreting and the students' expectations of institutional support on interpreting. Each section of the survey had seven-question items. Apart from the question items in the demographic section which were grouped, all the other question items were mixed up so that students could not get a clue to the pattern of the question item. Question items in the expectation sections were rated on a five-point Likert Scale (1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, and 5 = Strongly Agree).

The demographic was designed to gather information such as students’ gender, age group, tertiary institution attended, academic level, preferred communication mode, years of sign language exposure (age they first began using sign language) and academic programmes. The students' readiness for learning through interpreting section was designed to elicit their response on their preparation towards learning through interpreting services in tertiary classrooms. The section focussed on how deaf students can produce and understand sign communication in tertiary classrooms.

The section on students' expectations of institutional support for interpreting was designed to examine the way students expected the lecturers, interpreters and tertiary institutions in best promoting inclusion at the tertiary level through interpreting. Specifically, the section focussed on students' assessments of lecturers' involvement in interpreting in the tertiary classrooms. The section also examined the way deaf students rate the proficiency of interpreters in tertiary classrooms, finally how the students perceive the support tertiary institution offer to support interpreting in tertiary classrooms.

5.5.1.1 Survey participants

Six tertiary institutions that practice inclusion for deaf students were invited through the study information sheets to participate in the study. The institutions are the University of Education, Winneba (UEW), College of Technology Education, University of Education, Winneba – Kumasi Campus (COLTEC, UEW-K), University of Ghana, Legon (UG), Koforidua Technical University (KTU), Takoradi Technical University (TTU), and Presbyterian College of Education (PCE) (see Table 4.2 for the details of the institutions. All the six institutions invited agreed to allow their deaf students participate in the study. However, the PCE was not included in the study because after receiving approval from the institution for their participations, teachers of colleges of education embarked on a nationwide strike which led to the closing down of all colleges of education in the country. Due to this, none of the deaf students in PCE could be traced to participate in the study. The remaining 80 deaf students in the five tertiary institutions were given the information sheets and consent forms of the study and survey questionnaires. These students were selected because they learned through interpreting with hearing students in the same classrooms and could respond to the survey of their expectations of interpreting and their readiness for learning through interpreting (Mellinger and Hanson, 2017). Out of the 80 questionnaires issued to the students, 66 deaf students (82.5%) agreed and responded.

The demography of deaf students in tertiary institutions in Ghana (PCE excluded) are presented in Table 5-2.

Variables	Levels	Frequency (n)	Percentage (%)
Gender	Male	37	56.1
	Female	29	43.9
Age Group	20 – 24 years	17	25.8
	25 – 29 years	42	63.6
	30 – 34 years	7	10.6
University	UEW	51	77.3
	UEW-K	1	1.5
	UG	1	1.5
	TTC	4	6.1
	KTU	9	13.6
Academic Level	1st year	16	24.2
	2nd year	8	12.1
	3rd year	14	21.2
	4th year	28	42.4
Preferred Communication Mode	Spoken Language	27	40.9
	Sign Language	39	59.1
Years of Sign language Exposure	1 – 10 years	6	9.1
	11 – 20 years	33	50.0
	21 – 30 years	26	39.4
	31 – 40 years	1	1.5
Academic Programme	Special Education	43	65.2
	Graphic Design	5	7.6
	Art Education	2	3.0
	ICT	3	4.5
	Fashion	2	3.0
	Social Work	1	1.5
	Technology	2	3.0
	Early Childhood	1	1.5
	Building Technology	3	4.5
	Food Technology	1	1.5
	Hospitality Technology	2	3.0
	Accounting	1	1.5

5.5.1.2 Table 5-2: Demography of the participants in the study

Results on the demography of the students presented in Table 5-2 reveal that most of the respondents were males (*n* = 37, 56.1%) and 29 representing 43.9% were females. The results further suggest that most of the student respondents were aged between 25 and 29 years (*n* = 42, 63.6%) and this was followed by 20 – 24 years age range (*n* = 17, 25.8%). The student participants were from five universities in Ghana which practiced inclusion for deaf students. The results showed that most of the participants were from the UEW (*n* = 51, 77.3%), the second-highest institution with

most students who partook in the study was KTU (*n* = 37, 56.1%). This was followed by TTU with a sample size of 4 (6.1%), UG had 1 deaf student representing 1.5% and COLTEC, UEW-K also with 1 (1.5%). It is also clear from the table that all deaf students were undergraduate students at the time of the study. From Table 5-2 it could be seen that 1st year students were (*n* = 16, 24.2%), 2nd year students (*n* = 8, 12.1%), 3rd year students (*n* = 14, 21.2%) and 4th (final) year students (*n* = 28, 42.4%).

Again, it was evident that most of the participants preferred communicating in the sign language (*n* = 39, 59.1%) rather than spoken language (*n* = 27, 40.9%). The majority of the participants indicated that they had used sign communication between 11 – 20 years (*n* = 33, 50.0%) with others indicating that they had communicated with signs for over 21 years. The final piece of information collected on the demographic characteristics of the sample reveals that the majority of the students were taking courses in Special Education (*n* = 43, 65.2%).

5.5.1.3 Validity in the questionnaires

Validation of the survey questionnaire was ensured by assessing the items in the questionnaire during their construction and by pilot-testing. Expert judgment on the instrument was used to ensure content validity. My supervisors (a professor and associate professor in deaf education) were the experts I worked with to determine the content validity of the instrument. Content validity of an instrument focuses on the extent to which the content of the instrument corresponds to the concepts it was designed to measure (Christensen et al., 2014, Clark and Creswell, 2014, Creswell, 2012, Creswell et al., 2003, Fraenkel and Wallen, 2009, Gay et al., 2012, Hesse-Biber, 2010, Hesse-Biber et al., 2015). The processes involved in establishing the content validity of an instrument are to examine the objectives of the instrument and compare it to its content (Christensen, Johnson and Turner, 2014, Gay, Mills and Airasian, 2012). Content validity was ensured by critically developing the question items based on the overarching research question of the study. The items were reviewed by experts of quantitative studies and deaf education to ensure they measure what they intended to measure (Gay et al., 2012).

Again, a content validity index was calculated to ensure validity. To establish a content-validity index of the questionnaire instrument, drafts of the questionnaire were given to the experts of quantitative research, who were also experts in educational research (Gay et al., 2012). The experts were requested to specify whether an item on the instrument was necessarily operating as a construct in a set of items or not. To this end, the experts were requested to rate/score each item on a scale of one to three with one representing "not essential", two representing "useful but not essential", and three representing "essential" respectively. The 25 questionnaire items were submitted to the experts to rate. The outcome from the rating was analysed to establish the degree of convergence using the Content Validity Index (CVI) formula (Ayre and Scally, 2014, Lawshe, 1975, Polit et al., 2006, Wilson et al., 2012). The number of items on the questionnaire rated essential by the experts combined was 21 + 20 = 41. The total number of items rated was 50, thus 25 + 25 = 50. Dividing the relevant rated items by the total number of items is 41 ÷ 50 = 0.82. This gave the Content Validity Index of 0.82 to the questionnaire implying that the instrument would elicit the right data for the study. Content validity ratio varies between 1 to -1 (Ayre and Scally, 2014, Lawshe, 1975, Polit et al., 2006, Wilson et al., 2012). The questionnaire was then amended accordingly for use in the field. The refining of the items in the questionnaire was intended to make the items very simple and understandable for the respondents so that they could provide the appropriate response to the items.

5.5.1.4 Reliability in the questionnaires

As part of the development of the questionnaire , a reliability test using Cronbach's Alpha statistics with the help of SPSS package version 20 was calculated. Cohen et al. (2007) asserted that Cronbach's Alpha is the most common means of testing the reliability of a research questionnaire instrument. After running the test, three items' Alpha values were not contributing favourably to the overall Alpha value and therefore those items were deleted to make the instrument more reliable. An overall Cronbach's Alpha (α) value of 0.703 was attained on the instrument. Cohen et al. (2007) suggested that the reliability level is acceptable at 0.703. As a rule of thumb

values less (<) 0.60 are unaccepted low reliability, 0.60 to 0.69 marginally/minimally reliable, 0.70 to 0.79 are reliable, 0.80 to 0.89 are highly reliable and above (>) 0.90 are considered very highly reliable (Bryman, 2016, Hinton et al., 2014). The reliability results implied that the questionnaire was suitable for the current study.

Reliability is the consistency with which the instrument measures a target attribute (Hinton, McMurray and Brownlow, 2014, Howell 2002). This means that administering the same instrument by various researchers will provide the same results under comparable conditions.

5.5.1.5 Procedure for collecting questionnaire data

A copy of the UEW and University of Leeds Research Ethics committee's approval letter was sent to the registrars of all tertiary institutions which practiced inclusion for deaf students in Ghana to seek their permissions to conduct studies on their students. Some registrars gave verbal consent and others gave written consent (see Appendix H for approval and introductory letter from UEW). Through the registrars, envelopes which contained the anonymised survey questionnaires, information sheets about the study for deaf students, and consent forms for deaf students were given to all the deaf students. Further explanations were given to the students regarding what the study was about and, should they agree to participate in the study, the need to sign the attached consent forms and fill the survey questionnaires. The questionnaires were left with participants for a day after which they were collected. Out of the 80 questionnaires given, 66 deaf students completed and returned their questionnaires.

5.5.1.6 Analysis of survey data

Data from the surveys was grouped into the various tertiary institutions and recorded into Microsoft Excel spreadsheets. Responses were rearranged and grouped under the three main sections of the survey; demographics, expectations of students' readiness, and expectations of institutional support and transferred to SPSS version 20 for analysis. SPSS is a useful statistical tool for analysing quantitative data (Hinton, McMurray and Brownlow, 2014). Descriptive statistics was used to describe

participants' demographic information and expectations of interpreting and their readiness to learn through interpreting in tertiary institutions.

The next section of the methodology after the quantitative phase was focussed on the semi-structured one-to-one interviews.

5.5.2 Semi-structured one-to-one interviews

To generate data that revealed the understandings of the participants on tertiary inclusion and the demands and control considerations interpreters encounter in the classrooms, I conducted in-depth one-to-one semi-structured open-ended interviews with the participants. The interviews allowed participants to express their candid opinions, beliefs, and understandings of tertiary inclusion for deaf students (Creswell, 2012, Mann, 2016). Additionally, “interviews are widely held to be a fundamentally useful way to understand informants’ beliefs, experiences, and worlds” (Mann 2016, p. 2). Four different semi-structured interview guides were designed for the four different cohorts of actors to generate data that addressed the research questions of the study. Each interview guide was developed based on the research questions. For deaf students, the interview was based on their preparations for learning in the tertiary classroom through interpreters. Lecturers were interviewed on their contributions to support interpreting in the classrooms. Interpreters were also interviewed on their proficiency for interpreting at the tertiary classrooms and some of the demands and controls they encounter as they work in these classrooms. Heads of departments were interviewed on the support that the university provides to promote inclusion for deaf students. Each interview had a main leading question which was supported by probes and prompts that aimed to guide the respondents from deviating from the questions posed to them.

Table 5-2 provides the Gannt chart illustrating the date and activities for data collection.

Months (2018)	Activities	
September	Interviews with HODs	Survey questionnaires to deaf students.
October	Videoing of interactions of the actors in the classrooms	
November	Interviews with lecturers, interpreters, deaf students	
December	Transcribed interview data.	Collated questionnaire data

5.5.3 Table 5-2. Data collection schedules

All interviews with the actors (except deaf students) were conducted in spoken English language and audio recorded with two recorders (iPhone 6 and Huawei Honor 7). Two recorders were used for backup reasons. Interviews with lecturers and interpreters were conducted in their offices based on agreed appointments.

Deaf students agreed to be interviewed in the office of the Resource Centre for Students with Special Needs (RCSSN) in UEW. On their information sheets, deaf students were made aware they would be video recorded since the interviews were conducted in the Ghanaian Sign Language (GhSL). I reiterated that due to the nature of the interviews, provision was made for video pictures to be at different angles around the student to video the interviews, and the students agreed. I conducted the interviews myself since I am a proficient GhSL user. I conducted all the interviews with deaf students in GhSL and video recorded with a Canon video camera EOS 1200D.

5.5.4 Videoing of classroom interactions

Classroom interactions were video recorded to examine the interactions between deaf students, lecturers and interpreters in tertiary settings. Four out of six lecturers invited through the study information sheet agreed to be video recorded. Deaf participants and interpreters also agreed to be video recorded. All the participants signed the consent forms of the study to show their agreement. It was complex to capture the facial expressions, turns, and signs of the participants as they happened in the classrooms on audio, or through field notes (Almahrouqi, 2010), therefore video recording technique was used in the four classrooms since it offered the opportunity

to run a multimodal analysis of the classroom interactions using EUDICO Linguistic Annotator (ELAN). ELAN is computer software developed by Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands to transcribe, edit, create, search and visualise annotations for video and audio data (Hellwig, 2020). The multimodal analysis framework was used to determine at a given time the simultaneous reactions of the deaf students, lecturers and interpreters whilst they interacted in the classrooms.

Two video cameras were set in the classrooms before the start of every lesson. One camera focussed on deaf students and the other was set on the lecturers and interpreters. Before each lesson began, the lecturers made their class aware of my presence and informed them that whatever I video recorded was for research purposes. The cameras were set to begin recording as soon as the lectures began and end when the lectures ended. This was done so that every interaction that occurred in the classrooms could be captured. Videoing the participants allowed accessing fine details such as interpreters' lag times, actors' collaborative support and team interpreting in the classrooms. Videoing offered the opportunity to capture the interactions of the actors, and then subject them to repeated scrutiny and slow-motion facilities (Heath and Hindmarsh, 2002) for multimodal analysis.

5.5.5 Participants for the interviews and videos

The target groups for this study were the deaf students, lectures, interpreters and heads departments that had deaf students learning through interpreting with hearing students in the same classrooms in the University of Education, Winneba (UEW). Thirty-three participants agreed to participate in the interviews and videos (see Table 5-3 for the sample of each cohort). They comprised eight heads of departments, six lecturers, 10 interpreters, and nine deaf students. These numbers of participants were selected because dealing with different cohorts in a single qualitative study, the recommended number for each group should range between five and eight so that data generated could be analysed and interpreted within the timeframe of this study (Creswell, 2012, Kuzel, 1992, Morse, 1994). The essence for including participants

from these heterogeneous cohorts was to ensure that the views of each cohort of actors involved in inclusion for deaf students were heard.

Actors	Population	Sample	Gender		
Lecturers	16	6	5 male		
			1 female		
Interpreters	17	10	4 male	**Interpreter status**	**Number**
				Fulltime	1
			6 female	Part-time	1
				National service	5
				Internship	3
Deaf students	35	9	5 male		
			4 female		
Heads of departments	9	8	7 male		
			1 female		
Total	**77**	**33**	**33**		

5.5.6 Table 5-3. Population and Sample of Participants

5.5.6.1 Heads of departments

Heads of departments who had deaf students learning through interpreting were purposively selected for the study because they could provide data on the support that the university provides to sustain inclusion for the students (Creswell, 2012, Fraenkel and Wallen, 2009, Robson and McCartan, 2016, Thomas, 2017). Nine of the heads were approached to be involved in the study, and eight of them accepted to be included in the study after they had read through the information sheets for heads of departments (see Appendix C for participants' information sheets and consent forms). The heads were selected from the Departments of Information and Communication Technology, Media and Communication Studies, Graphic Design, African Studies, Education for the Hearing Impaired (who had also served as the head of Special Education Department and Resource Centre for Students with Special Needs), Health, Physical Education, Recreation and Sports, Social Studies, and Psychology and Education. They included seven males and one female aged between 45 years and 62 years with an average age of 50 years. All the heads were either senior lecturers or associate professors who had served in their headship position for more than one academic year.

5.5.6.2 Lecturers

Through the heads of departments, 16 lecturers who were teaching deaf students through interpreting in the semester of the time of the study were introduced as potential participants of the study. All 16 lecturers were given the lecturers' information sheet on the study (see Appendix C for participants' information sheets) to read and be familiar with the study. Out of the 16 lecturers approached, six agreed to be involved in the study but only four of them allowed for videoing in their classrooms. The lecturers included five males and one female aged between 35 years and 55 years with an average age of 45 years. Four of the lecturers were of the level of senior lecturers and two of the level of lecturers. All the lecturers had over one academic year experience in teaching deaf students through interpreting in tertiary classrooms. Five of the lecturers had no professional training on how to teach deaf students through interpreting in inclusive settings, except that three of them as part of their bachelor's degree training had done an introductory course in Special Needs Education. Only one lecturer had his bachelor's and master's degree in Special Education (Hearing Impaired) and Mathematics.

5.5.6.3 Interpreters

Through the four lecturers who agreed for their classrooms to be video recorded, 10 interpreters were introduced as potential participants of the study. The interpreters were identified through the lecturers because I wanted participants who could be video recorded after their interviews. I didn't select interpreters from classrooms in which lecturers did not consent to participate in the study since it was impossible to video the interactions of such classrooms without the lecturers' consent. All 10 interpreters identified agreed to participate in the study. They comprised six females and four males aged between 23 years and 29 years with an average age of 24 years. One interpreter was a fulltime interpreter (was hired as fulltime staff of the Department of Special Education), one was a part-time interpreter in Graphic Design Department, five were national service personnel in Special Education Department, and three were internship students in the Special Education Department (students

are required as part of their bachelor's degree training to do a one-semester internship).

The fulltime interpreter had over three years of experience in interpreting for deaf students in tertiary classrooms. Though she was not a professional interpreter, she had received training in interpreting as part of her undergraduate studies in Special Education (Hearing Impaired) and Mathematics. Often interpreting training are offered to students in EHI on how to communicate with deaf people in different settings. These are often done as part of sign language courses. One interpreter was a part-time interpreter in the Department of Graphic Design. He had over four years of experience in interpreting for deaf students in graphic design courses in the UEW. Though this interpreter was not professional, because he could sign and communicate with deaf students, the Departments of Graphic Design had retained him as an interpreter from the time of his undergraduate studies (worked as student intern). He also did his national service in the department and had since served as a part-time interpreter in the same department. One of the interpreters on national service had a Diploma in Sign language and a Bachelor's degree in Special Education (Hearing Impaired) and Art. She was in her second year of interpreting in the university at the time of the study. She was retained as an interpreter in the university because her professional training in deaf education and sign language had equipped her with some signing and interpreting skills. The remaining four national service interpreters had their bachelor’s degree in Special Education (Hearing Impaired). They were in their second year of interpreting for deaf students in the university. All three internship students were interpreting for deaf students in the university for the first time. Though, they had all interpreted for their colleague deaf students in lectures during their undergraduate studies whenever interpreters for their colleague deaf students were absent, serving as interpreters during their internship was their first time to accompany deaf students to classes to interpret for them.

5.5.6.4 Deaf students

Nine deaf students comprising five males and four females aged between 22 years and 29 years with an average age of 25 years agreed to participate in the interviews

and videos. One of the deaf participants before his entry into the university had attended a college of education that practiced inclusive education. So, he had the experience of learning in the same classroom with hearing students through interpreting. The remaining eight deaf students had never learned through interpreting throughout their education (from basic through secondary education). Learning through interpreters in the university was their first time.

5.5.7 Trustworthiness in the interviews and videos

I adopted the concept of trustworthiness for the qualitative part of the study. Trustworthiness was used to describe four criteria (i.e., credibility, transferability, dependability, and confirmability) for judging qualitative research (Guba and Lincoln, 1989, Yeh and Inman, 2007). The various aspects of trustworthiness and how they were addressed in this study are discussed below.

5.5.7.1 Credibility

Two approaches were used to ensure credibility in this study. First, I used different methods of data collection (interviews, videos, and questionnaires) to generate data that responded to different research questions in the study. Transcripts from interviews and interaction data were made available to the participants to confirm whether the transcriptions were true reflections of their views. Participants agreed that the transcriptions were true reflections of their views so nothing on the transcriptions was changed. Transcripts generated from sign language interviews were crosschecked with a native signer for its accuracy. I also collected data from different cohorts of participants to elicit from them how interpreting mediated inclusion in tertiary classrooms. This produced data on the understandings of each cohort of actors on tertiary inclusion from different participant groups of the study. Finally, I used videos and screenshots from the classroom interactions to present robust data that is verifiable.

5.5.7.2 Transferability

Another issue of trustworthiness that was catered for in this study was transferability. Three different strategies were employed to ensure the transferability of findings from this study. I gave detailed descriptions of the data (Geertz, 2008, Ponterotto, 2006) to aid readers to understand the demographics of the participants and participants' understanding tertiary inclusion by explicitly providing participants' demographic data (names excluded), selection criteria, and the context of my study. Giving detailed descriptions in this study enables readers to compare the findings of this study to another context that has similar characteristics (Guba, 1981, Shenton, 2004). I also compared and discussed the findings of this study to those of previous studies conducted in different contexts to draw similarities and differences between this study and those studies. Again, I provided detailed descriptions of my data collection procedure and an in-depth analysis of my results to help readers understand the context of my study and the data generated from that context. By providing such details, it is easier for readers in other contexts to locate themselves in this study and apply the findings in their respective contexts. Finally, I sampled participants who have enough experience in interpreting in tertiary classrooms and could provide relevant data that reflected the context of the study.

5.5.7.3 Dependability

For the findings of this study to be dependable, I have ensured that I have provided vivid and detailed explanations of the methods I used in this study. I justified my methods and how effective they were in generating relevant data that aimed at addressing the research questions raised in the study. I discussed in detail the research design, procedure for data collection and data analysis. I also conducted stepwise replication of my study by presenting portions of my work in conferences and seminars for other professionals in academia and non-academic to review and comment on.

5.5.7.4 Confirmability

I addressed this by collecting data from multiple methods and participants (Guba and Lincoln, 1989). I also asked deaf peers and experts of GhSL to review my interviews and interactions transcripts. I kept full details of my research activities in my research journal. I also used the mixed-methods approach, which combined both quantitative and qualitative analyses of the data that were generated for the study.

5.5.8 Analysis of interviews and videos data

Braun and Clarke (2019) thematic analysis framework was adapted to analyse interview data. All interviews conducted in GhSL were interpreted in English and transcribed. Interviews conducted in English were also transcribed and read through for the familiarisation of the data. Themes for the analysis were developed based on the research questions and the data. Out of the research questions and data emerged three themes which were further developed into four sub-themes (see Table 5-4 for the themes, sub-themes, and codes developed from the research questions and data with the number of occurrences). Similar data from the transcripts were coded with same colours and used for the analysis based on the number of times participants raised them as issues. The data were grouped under the different expressions of participants' understandings of inclusion, demands, and control options employed in the classrooms. To address the research question of participants' understandings of inclusions, participants' expressions that clearly stated their expectations of deaf students, interpreters, lecturers and tertiary institutions were put under the understanding of inclusion based on expectations. Again, participants' expressions that explicitly stated their practices in the inclusive settings were also put under understanding of inclusion based on practices. These sub-themes were further developed into codes, expectations of deaf students, interpreters, lecturers and tertiary institutions and were analysed under the broader theme: participants' understanding of inclusion based on their expectations. Additionally, sub-themes on practices of deaf students, interpreters, lecturers and tertiary institutions also emerged from the codes and were analysed under the theme: participants' understandings of inclusion based on their practices.

To address research question on the demands and control options of interpreting in tertiary classrooms, expressions from interpreters that clearly defined the demands they encountered as a result of the context they work in were coded under environmental demands. Interpreters' expressions that explicitly stated demands they encountered as a result of the activities of lecturers and deaf/hearing students that impacted on the effectiveness of interpreting were coded under interpersonal demands. Explicit expressions from interpreters that revealed the demands they encountered as a result of the way lecturers and deaf students expressed themselves were coded under paralinguistic demands. Lastly, interpreters' expressions that clearly stated demands they encountered as a result of their inherent factors were also coded under intrapersonal demands. These codes helped in generating sub-themes on demands on interpreters and were analysed under the broader theme of demands of interpreting in the classroom.

The control options of interpreting in the classrooms theme was developed from the pre-assignment, assignment and post-assignment demands. Interpreters' expressions explicitly stating their preparations prior to an assignment were coded as pre-assignment controls. Again, interpreters' expressions that clearly stated the decisions they make during interpreting to manage the demands they encounter in the classrooms were also coded under assignment controls. Lastly, interpreters' expressions that explicitly stated the management strategies they put in place after an assignment were also coded under-post-assignment controls. These codes helped in generating the control options employed by interpreters sub-theme which were used for the thematic analysis of the control options theme.

Themes	Sub-themes	Codes	n
Socio-cultural understandings of inclusion	Understandings of inclusion based on expectations	Participants' expectations of lecturers in tertiary settings	13
		Participants' expectations of deaf students in tertiary settings	4
		Participants' expectations of interpreters in tertiary settings	29
		Participants' expectations of tertiary institutions	13
	Understandings of practices based on practices	Lecturers' practices	3
		Deaf students' practices	10
		Interpreters' practices	6
		University's practices	6
Demands of interpreting in the classrooms	Demands on interpreters	Paralinguistic	9
		Interpersonal	9
		Environmental	12
		Intrapersonal	4
Control options of interpreting in the classrooms	Control options employed by interpreters	Pre-assignment	9
		Assignment	15
		Post assignment	1

Table 5-4 themes, sub-themes, and codes developed from the research questions and data with the number of occurrences

Data from the videos of the classroom interactions were multimodally analysed. Sections of the interaction data that had omissions (lecturers said something, but interpreter did not interpret), and questions and answers were used to run a multimodal analysis of the video data because those were the sections that created the opportunity for the participants to engage with themselves. I set up on ELAN three major tiers for the participants (lecturers, interpreters, and deaf students) because I analysed the role each participant played to support the classroom interactions. The three tiers were used to annotate the exact expressions of the participants (either in speech or signs) after which translations were rendered in English. Setting these tiers and time aligning them with the video data allowed annotating and analysis in each instance the involvement of each actor in interpreting in the classrooms. The three tiers also allowed identification of the synchronicity of the activities of the actors in classroom interactions. All expressions in sign language were written in capital letters in ELAN to distinguish the sign language from spoken language. Transcripts and snapshots of stills from the interaction data helped in running a multimodal analysis of the collaboration that existed between the actors in the classrooms. In the excerpts, I

analysed for collaborative support (how the participants supported each other in the classrooms) and team interpreting (the collaboration among the interpreters). Excerpts were taken from classroom interactions in four courses where the participants engaged in collaborative support by working with the interpreters in promoting the inclusion in tertiary classrooms. Extracts were selected from sections where participants supported each other to achieve a common goal (collaborative support), and on the support interpreters provide for themselves as they worked as team (team interpreting). Team interpreting was analaysed based on the support co-interpreters provided to on-task interpreters. These include, feeding on-task interpreters with concepts they are unable to sign, on-task interpreter switching with co-interpreters after every 20 minutes, and on-task interpreters seeking for support from co-interpreters when needed. Particular attention was paid to instances of the classroom interactions that were characteristic of questioning and answering dialogue and instances where there were omissions.

The next three chapters of the thesis presents the analysis of survey questionnaires, interviews and video data. Chapter 6 presents analyses of survey and interview data on the participants' understanding of tertiary inclusion. Chapter 7 analyses interview data with interpreters on the demands and control considerations they encounter in the classrooms. Chapter 8 presents analysis of data from the classroom videos on the nature of interactions between the participants in the classrooms.

Chapter 6

Social-cultural understandings of tertiary inclusion

6.1 Introduction

This chapter presents the results and analysis of participants' socio-cultural understandings of tertiary inclusion. It analyses deaf students' expectations of interpreting and their readiness for learning through interpreting in tertiary classrooms. The understanding as expressed in this study is based on participants expectations and practices. The chapter also presents the analysis of participants' understanding of inclusion in tertiary classrooms. These provide the context for understanding the demands and control options considerations of interpreting and the nature of the interactions between deaf students, lecturers and interpreters in the classrooms in tertiary settings. To develop the socio-cultural understanding of participants, survey questionnaires were issued to deaf students who learned through interpreting in tertiary classrooms in Ghana to ascertain their expectations of interpreting at that level, and their readiness for learning through interpreting. This was done because deaf students were the main recipients of interpreting in tertiary classrooms and a survey of the expectations of all deaf students in Ghanaian tertiary classrooms would provide useful context for this study. One-to-one semi-structured interviews were also conducted with all the participants to examine their understandings of inclusion. The first section of this chapters presents deaf students' expectations of interpreting in tertiary classrooms.

6.2 Deaf students' expectations of interpreting in tertiary classrooms

This survey aimed at gathering data that would respond to **RQai**: *What expectations do deaf students have on interpreting and what is their readiness for learning through interpreting in tertiary classrooms?* Sixty-six deaf students responded to the communication questionnaire. Detailed results of their expectations on interpreting and their readiness for learning through interpreting are presented in Table 6-1.

Fourteen question items were adapted from Marschark et al.'s (2004) communication questionnaire and developed to suite the Ghanaian context. Seven of the items measured the students' expectations of interpreting in tertiary classrooms and seven question items also examined deaf students' readiness for learning through interpreting in tertiary classrooms.

SN	Statement	Disagree (%)	Undecided (%)	Agree (%)
Students expectation of interpreting				
1	I do not like the style of interpreters' fingerspelling to me	43(65.2)	0(0%)	23(34.8)
2	The university provides interpreters in every lecture for me	4(6.1)	14(21.2)	48(72.7)
3	Interpreters interpret in a very fast way in the classroom	17(25.8)	30(45.5)	19(28.8)
4	Overall, I will rate my interpreters as proficient	1(1.5)	11(16.7)	54(81.8)
5	I am satisfied with the way lecturers involve themselves in interpreting in my classes	18(27.3)	10(15.2)	38(57.6)
6	The university environments are not conducive to learning through interpreting.	49(74.2)	10(15.2)	7(10.6)
7	Overall, the interpreting services at the University was very satisfactory	9(13.6)	14(21.2)	43(65.2)
Students readiness for learning through interpreting				
8	I understand simultaneous communication (speech and sign together)	14(21.2)	12(18.2)	40(60.6)
9	I can produce signs in GhSL	13(19.7)	6(9.1)	47(71.2)
10	I can understand others when they communicate to me in GhSL	6(9.1)	6(9.1)	54(81.8)
11	I cannot communicate in Signed English	37(56.1)	13(19.7)	16(24.2)
12	I understand Signed English when others communicate with me	10(15.2)	9(13.6)	47(71.2)
13	I prefer to use GhSL to communicate in class	10(15.2)	0(0%)	56(84.8)
14	I prefer to use GhSL to present my assignment and exercises	20(30.3)	0(0%)	46(69.7)

6.2.1 Table 6-1 Students' expectations of interpreting at tertiary level

6.2.2 Deaf students' expectations of interpreting in tertiary classrooms

The survey questionnaire presented in Table 6-2 is structured into two sub-scales, that is, deaf students' expectations of interpreting sub-scale (1, 2, 3, 4, 5, 6 and 7) and deaf students' readiness for learning through interpreting sub-scale (8, 9, 10, 11, 12, 13 and 14). The results as presented in Table 6-2 indicate that deaf participants had a positive expectation of interpreting provided in tertiary institutions in Ghana. For example, most of the respondents agreed (*n* = 43, 65.2%) that they like the interpreters' fingerspelling (the communication in sign language of a word or other

expression by rendering its written form letter by letter in a manual alphabet. This is often used in GhSL because some concepts in English do not have exact signs so interpreters rely on fingerspelling to communicate those words to deaf students). This showed that they preferred the way interpreters fingerspelled to them during lectures. Furthermore, almost three-quarters of the deaf participants agreed that the university environments were conducive for learning through interpreting (*n* = 49, 74.2%). On the other hand, most of the respondents agreed to most of the positively worded items. For example, it can be observed from the findings that 72.7% (*n* = 48) of the respondents agreed that the university provided interpreters in every lecture for them. In the same regard, 81.8% (*n* = 54) of the respondents were of the view that they would rate their interpreters as proficient in interpreting. Furthermore, most of the participants indicated that they were satisfied with the way lecturers engage with interpreters and deaf students in their classes (*n* = 38, 57.6%).

However, the respondents were split on the item which sought to inquire whether interpreters interpret in a very fast way in the classroom during lessons. Finally, the respondents indicated that overall, the interpreting services at the various Universities in Ghana are very satisfactory (*n* = 43, 65.2%). From the findings, it is obvious that participants had positive expectations of interpreting in tertiary classrooms. They believe the universities have provided conducive environments for learning through interpreting, have proficient interpreters and lecturers were supportive of interpreting in the classrooms. The next section of the analysis presents findings on the deaf participants' readiness for learning through interpreting.

6.2.3 Deaf students' readiness for learning through interpreting

The findings as presented in Table 6-1 suggest that 40 of the respondents (representing 60.6%) indicated that they understood simultaneous communication (that is speech and sign together). The findings also indicated that the majority of the sampled students' respondents thought that they could produce signs in GhSL (*n* = 47, 71.2%). The majority of participants also indicated that they understand others when they communicate to them in Ghanaian Sign Language (*n* = 54, 81.8%). Most of the respondents agreed that they can communicate in signed English (*n* = 37,

56.1%, Signed English is form of sign communication which follow the English language grammar). It also came to light that deaf students further revealed that they understood signed English when others communicate to them (*n* = 47, 71.2%). The results as presented in Table 6-2 suggest that 84.8% representing 56 respondents asserted that they prefer to use GhSL to communicate in class and 69.7% (*n* = 46) also indicated that they prefer to use GhSL to present their assignments and exercises. The findings as illustrated in Table 6-2 show that the participants were ready to learn through interpreting since they could produce signs and understand others who communicate through signs to them. Since communication is central in learning at any level, the deaf participants responses suggest they were comfortable using the sign language and could understand their interpreters who use it. Though other factors such as deaf students' understanding of the roles of interpreters; years of experience learning through interpreters contribute to students' readiness for using the service; know how to work with interpreters; and interpreters' linguistic and interpreting competence, an understanding of the language used in interpreting stands out amongst all. This is because this understanding fosters a relationship between the students and their interpreters, and when communication issues are sorted, all other matters could be resolved. Therefore, per the results deaf participants were ready to learn through interpreting at the tertiary classrooms.

The next section of the chapter presents the analysis framework for the interview data.

6.3 Stages of interview data analysis

As discussed in the methodology chapter, I adapted a six-phase thematic analysis procedure from Braun and Clarke (2019) because it provided a framework for analysing one-to-one interview data (see Figure 6-1 for stages of data analysis).

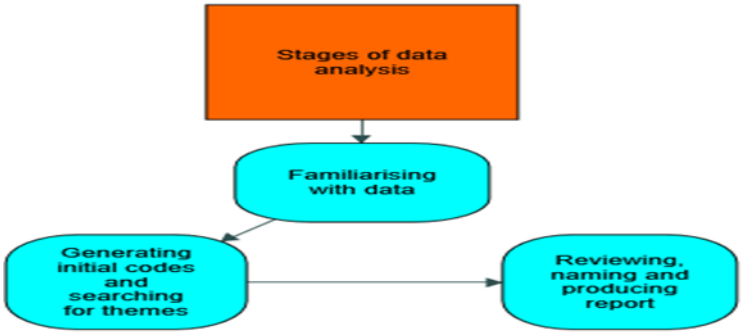


Figure 6-1. Stages of data analysis adapted from Braun and Clarke (2019)

6.3.1 Level 1: Familiarising with data

This level involves the manual transcriptions of the interviews. Thirty-three one-to-one semi-structured interviews were conducted with the participants over a period of three weeks to ascertain their understandings of inclusion in tertiary classroom (**RQb**), and the demand control considerations that these understandings have on interpreters in tertiary classrooms (**RQc**). These interviews lasted between 35minutes and 45minutes. Hearing participants were interviewed in English and were audio-recorded whilst deaf participants were interviewed in the Ghanaian Sign Language (GhSL) and were video recorded. All spoken language interviews were transferred onto a laptop that had Windows Media Player software that enabled playback of the audio-recordings through a slow-motion feature (activated by pressing: Shift+ Ctrl + S) which enabled me to hear the voices of participants. Transcripts of each interview were written and saved on Microsoft Office Word (Version 2013). Video interviews were transferred onto ELAN which had the interface for transcribing both what the interviewer and interviewee said in the interviews (see Figure 6-2 for a sample of video transcripts on ELAN). I am a proficient GhSL user so I could transcribe from GhSL into English. However, the transcripts from GhSL interviews were given to a proficient native GhSL user to crosscheck for its accuracy. Interviews conducted in sign language were transcribed using uppercase letters whiles spoken language interview were transcribed using lowercase letters. ELAN also has a slow-motion feature which enabled slowing down the movements of the participants in the video in order to transcribe their views. I grouped the interviews into different cohorts (HODs,

lecturers, interpreters and deaf students) and transcribed them cohort by cohort. After each of the transcriptions (for both audio and video interview data), I listened/ watched and compared them to the transcripts to confirm the accuracy of the transcriptions.

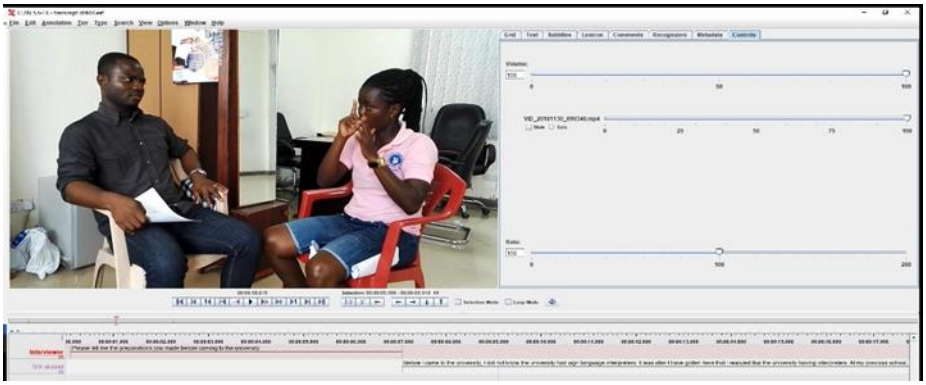


Figure 6-2. Sample transcript from video data on ELAN

6.3.2 Level 2 and 3: Generating initial codes and searching for themes

I combined levels two and three of Braun and Clarke's (2019) analysis framework. Level two of the analysis process involved generating initial codes from the interview transcripts because I did them concurrently. Although qualitative analysis software is available like NVivo which could have helped in this process, as discussed in the methodology, I generated the codes manually because a manual coding of the data allowed me to immerse myself in the data, and also appreciate how the patterns emerged out of the coding (see Table 5-2 for the codes and how they addressed research questions). Although NVivo could have done this faster, manually coding the data helped in appreciating how the themes have emerged from the codes. First, I used pseudonyms to represent each participant in order to anonymise their identity. Having in mind my research questions, I also did a manual search for participants' expressions based on the codes (as explained in the methodology, section 5.4.8) that were relevant to responding to the research questions on Microsoft Office Word. Similar responses were highlighted with similar colours for easy identification and grouping. Afterwards, I grouped all similar ideas based on their colours from across the different cohorts and transferred them all onto one Microsoft Word document. Out of the grouping, similar patterns that emerged revealed 15 different codes and four

sub-themes which related to the way participants understood tertiary inclusion, and the demands and controls available in tertiary classrooms. On the 15 codes, I used a mind mapping technique to show the relationship between the codes, sub-themes and the major themes. These led to the generation of the themes that responded directly to **RQb**, **RQci** and **RQcii** and provided the opportunity for analysing and presenting the findings of the study more succinctly (see Table 5-4 for the themes and the various research questions they respond to).

The next level of the analysis was designed to review and define the themes, as well as take the analysis one step further.

6.3.3 Levels 4, 5 and 6: Reviewing, naming and producing the report

In this section, I had a look at the three broader themes and developed a framework to explain what needed to be learned from the them reflecting on the research questions and the literature. The processes followed during this stage of the analysis has been illustrated in Figure 6-3.

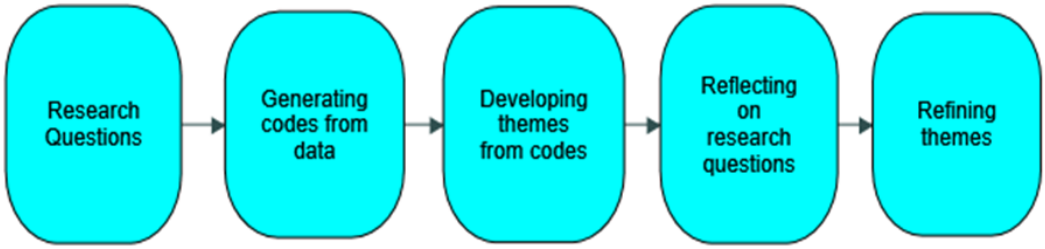


Figure 6-3. Diagram of the analysis process

The next section analyses participants' understandings of inclusion in tertiary classrooms. Participants' expressed their understandings of tertiary inclusion based on their expectations and practices in tertiary settings. The data analysis in this section addressed the following research question: What understandings do lecturers, deaf students, interpreters, and heads of departments have on inclusion?

6.4 Participants' understanding of inclusion

This section presents the participants' understandings of inclusion in tertiary classrooms. The structure of the analysis has been illustrated in Figure 6-4 to reflect

the way participants expressed their understanding of tertiary inclusion. Participants have some level of understanding of inclusion which were based on their expectations and practices at the tertiary level. These were identified from the number of times participants expressed their expectations and practices in the interviews. Participants explained the need for each actor to acknowledge their roles so that the goal of inclusion could be achieved.

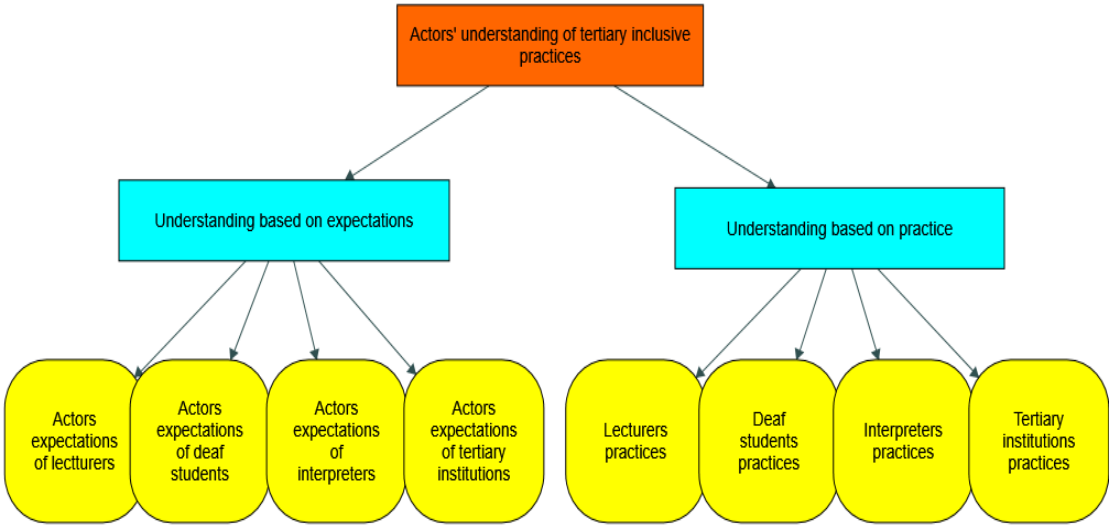


Figure 6-4. Actors' understanding of inclusion in tertiary classrooms

6.4.1 Understanding of inclusion based on the participants' expectations

The participants expressed their understandings of tertiary inclusion based on the roles they expect of each other in tertiary classrooms (see Figure 7-5 for actors' understanding based on expectations).

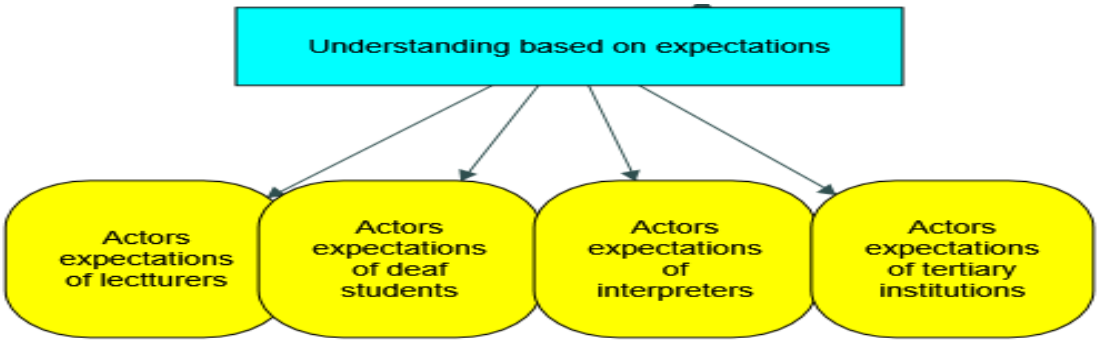


Figure 6-5 Participants' understandings based on their expectations

6.4.1.1 Participants' expectations of lecturers in tertiary settings

6.4.1.1.1 Interpreters' expectations of lecturers

Inclusion as a phenomenon has been understood by different stakeholders in different ways. When interpreters expressed their expectations of the knowledge lecturers require regarding inclusion, they indicated that for inclusion to be successful for deaf students, various actors, particularly lecturers, need to understand the characteristics of deaf students. Interpreters described the need for lecturers to know and understand how communication is facilitated for deaf students through interpreting and the roles of the interpreters in their classrooms. They said that lecturers should learn to accept the diversity of the students in their classrooms and offer them the necessary support required to achieve their set educational outcomes. The expressions by most of the interpreters (six out of ten) reveal they were unhappy with the way some lecturers treat them in the lecture halls. They also indicated that inclusion will be successful if the actors recognize the roles of each person in the setting. The interpreters indicated:

> *I think lecturers should have a view that, if we are setting up an inclusion system, it should include them. They should know we have deaf students in our midst. They shouldn't just be in the classroom and say okay deaf students are here, so they are doing what they want. They shouldn't just be there for the sake of inclusion. They should practice it truly. (SLI03)*
>
> *If the lecturer can have time, sit and discuss with the interpreter so that when the interpreter is delivering, she will deliver the right thing to the student. (SLI06)*
>
> *In my view, I think lecturers should know that interpreters are there to help them… they should give us equal respect, or they should also in their delivery know that someone is there to interpret so they should slow down their pacing. I think that will work (SLI07)*
>
> *They should work hand in hand with us…If you know your interpreter, you work out with them what you teach… even the lecturer can explain what they want to interpreters before the lectures start. (SLI08)*
>
> *The lecturers are supposed to know that deaf just speak through the interpreter and so they must treat the interpreters very well and not making them feel disturbed. (SLI09)*
>
> *They should understand that since they are handling different individuals and so they must learn to tolerate everyone. They also need to know that*

there are individual differences and so they need to come down for everyone to benefit. (SLI10)

6.4.1.1.2 Deaf students' expectations of lecturers

Deaf students expressed their expectations of lecturers indicating that lecturers should provide a hospitable environment that is welcoming and supports the students' learning.

Lecturers should encourage deaf students to learn

The point of view that two deaf students had on inclusion was that even at the tertiary level, lecturers should from time to time encourage deaf students to learn and take their studies seriously. They thought that when lecturers encourage students to learn, the students will be motivated to learn in order to improve on their academic achievements. At the tertiary level, students are adults who should take initiatives, be responsible and must also plan for themselves. Two deaf students indicated that lecturers' contributions to interpreting should focus on motivating deaf students to learn. They suggested that lecturers could do this by writing books which are readily accessible to deaf students:

They should encourage us to learn, also while a lecture is ongoing, they should be asking us questions to know our understanding. This will make us focused and feel part of the class. (Deaf02)

I think the lecturers should write books that deaf students can read. They must encourage deaf students to learn and also should inspect deaf students' work as well. (Deaf04)

Lecturers should add learning and teaching aids to their teaching

Three out of the nine deaf participants were of the view that lecturers should use learning and teaching materials to support their students' learning. They suggested that since different students have different learning needs in tertiary classrooms, teachers must use different techniques that include a wide range of resources to promote their students' learning. The participants stressed that lecturers should use visual aids such as projectors, PowerPoint slides and make available their notes to students:

Most often, lecturers should project the slides. (Deaf03)

They should use PowerPoint to teach so that deaf students will understand and also to support the interpreter. (Deaf04)

They have to project the words so that deaf students will see. The lecturer must give us notes, (Deaf05)

Lecturers should be welcoming to deaf students

Two deaf participants also added that for lecturers to fully include deaf students, lecturers in addition to recognising the diversity of the students should also put their knowledge of diversity into practice in the classrooms. Having in mind the goal of inclusion, students of diverse needs are brought together to learn in a common environment. It is therefore imperative that lecturers apart from their promotion of academic activities, should try to establish rapport with the students they teach. Participants suggested that one way of doing this was for lecturers to learn and familiarize themselves with the Deaf culture[10]:

The lecturer must try to socialize with deaf people in the university by knowing more about Deaf culture. (Deaf01)

They should allow us to go to them for clarification of certain topics that we did not understand. (Deaf02)

The participants also expressed their understanding of inclusion based on their expectations of deaf students in tertiary classrooms.

6.4.1.2 Participants' expectations of deaf students in tertiary settings

The participants expressed their expectations of deaf students in tertiary settings in order to facilitate inclusion.

[10] Deaf culture is the set of social beliefs, traditions, behaviours, values, and shared institutions of communities that are influenced by deafness and which use sign languages as the main means of communication (Napier and Leeson, 2016).

6.4.1.2.1 Interpreters and lecturers' expectations of deaf students

Expressing their views on inclusion, and how to successfully achieve this for deaf students, all the participants made known that the major role the students are expected to play to facilitate the process was to learn. They acknowledged that no matter how well the interpreters, lecturers and institutions play their roles in promoting inclusion, deaf students must play a leading role by actively engaging in practices that facilitates their learning. To meet the academic demands of tertiary institutions, all the participants agreed that deaf students needed to dedicate their time to learning. Interpreters and lecturers alike indicated that deaf students should ensure they meet their course requirements by making conscious efforts to read, ask and participate in all course activities. Investing time in learning will help deaf students improve in their performances at the tertiary level:

> *Deaf students should always learn (SLI04)*
>
> *They also must read more and visit the library to catch up with their peers. (SLI10)*
>
> *I expect them to read about the courses before they come… Some of the concepts I use during lectures may not be familiar with them so I expect deaf students to read before they come to lecture and also have some background knowledge in the course which will make it easier to understand the course. (L06)*

6.4.1.3 Participants' expectations of interpreters in tertiary settings

In this section, the participants expressed their expectation of interpreters in tertiary classrooms.

6.4.1.3.1 Interpreters' expectations of themselves

Interpreters expressed their understandings of inclusion at the tertiary level based on how they think interpreters should be committed to the courses they interpret. The interpreters expected that all interpreters in tertiary classrooms should have some knowledge in the courses they interpret and should also have interpreting skills.

Knowledge of course content

Knowing a course enables interpreters to be familiar with the concepts that are frequently used and therefore find a more appropriate way of communicating the meaning of those concepts to their deaf consumers. The interpreters who participated in the interviews unanimously agreed that for an interpreter to provide quality services in a course, they needed to have some background knowledge of that course content. This knowledge will help them follow and render appropriate interpretations. The views expressed by participants indicated that for inclusion to be successful at the tertiary level, interpreters need to have an in-depth understanding of the course content they interpret. Having this understanding will not only boost the confidence of interpreters but also will make them aware of the concepts used in those courses so that they can prepare adequately for them. However, limiting the proficiencies of interpreting to course content knowledge tends to affect the quality of services rendered. Since interpreting is a mediation between two different languages and cultures, in addition to the course content knowledge, interpreters are required to be well versed in the two languages and culture (bi-lingual bi-cultural). Being a proficient bi-lingual bi-cultural interpreter will allow interpreters to operate freely between the two languages and cultures of tertiary classrooms (between hearing and deaf students). In their words, the interpreters described having course content knowledge as the basis for proficiency in interpreting, though several factors including the interpreting proficiency and GhSL proficiency could have been considered as the fundamental requirements by the interpreters.

> *Yes, the interpreter should at least know of the course she is going to interpret. (SLI01)*
>
> *I have background knowledge of the course that is the course I studied… I'm able to explain most of the concepts to the understanding of deaf consumer (SLI02)*
>
> *First, you must have some background knowledge about what you are going to interpret. (SLI03)*
>
> *And before you go to the lecture hall you should at least know the subject matter SLI04)*

I think they should get the concept of the class that they are going to interpret. (SLI05)

Sometimes the lecturer will be using some words that if you know about, you can sign based on what you know (SLI07)

If you have pre-knowledge of the course you are going to interpret for, it makes you proficient (SLI08)

They must know the kind of course they are going to interpret. (SLI09)

I will recommend that the university will assign an interpreter to course that they already know (SLI10)

Interpreters' general signing skills

Some other interpreters added that in addition to the knowledge of course contents, interpreters need to be skilful in interpreting. This set the pace for good inclusion. When interpreters are skilful in signing, they can render quality interpretations to their consumers, and this bridges the communication gap between hearing and deaf people in the classroom. Though sign language competence alone does not guarantee interpreters' proficiency. A proficient interpreter does not only require to be knowledgeable in two languages or be well versed in course contents, interpreters need also to have the ability to anticipate the demands in the setting and have appropriate control options and know what to do and when to do it. Interpreters need not only to be familiar with concepts and render them appropriately, they also need to know how to combine those concepts in order to render meaningful interpretations which is devoid of compromising the content of the message. Such skill requires constant practice and one's engagement with the Deaf community to appreciate fully their means of communicating. Regarding the expectations of proficiency in sign language, half of the interpreters indicated that it was key that anyone who wants to interpret at the tertiary level is proficient in the sign language since it enables them to interpret meaningfully to their deaf consumers:

I think they need to be equipped with, or they should have all the necessary skills (SLI01)

They should be proficient in sign language. It should be a requisite skill… how can you interpret if you don't know signing? (SLI03)

At first, they should have the signing skills. (SLI04)

I think the interpreter should have a very good skill in signing. (SLI06)

Okay, the first thing the interpreter needs to know is to know sign language (SLI07)

6.4.1.4 Deaf students' expectations of interpreters

Although a deaf participant was of the view that since hearing people find it difficult to learn sign language, interpreters should not be compelled to have high competences in the language. However, the same participant recognised the importance of proficiency in sign language to interpreters:

For me, I don't think interpreters must have any skills because sign language is meant for deaf people. It is hard for hearing people to learn. Sometimes they try their best to help us, but they must also try and learn more concepts. (Deaf01)

Some deaf participants explained signing skills to include the relevant gestures and facial expressions used during interpreting, and the understanding of concepts and their ability to convey those meanings to their consumers: I prefer choosing an interpreter who can change the spoken language into sign language to my understanding. (Deaf02)

I feel the interpreter must show their facial expressions, body language, and use signing space by giving examples. Interpreters should summarise whatever the lecturer says based on their understanding and words. (Deaf03)

Interpreters should have the skills of interpreting difficult words so that deaf students will understand. (Deaf05)

6.4.1.5 Lecturers' expectations of interpreters

Five out of the six lecturers who expressed their expectations of the interpreters also indicated that they were happy when they worked with interpreters who understand their course contents because it facilitates their teaching:

If we have people who know the various courses, then when it comes to those courses, that person will come in and help, it will be very helpful. (L01)

I am happy most of the people who come to interpret have also gone through our programme. (L02)

Mostly I prefer those who have handled people in class before coming with first timers. It brings some consistency to the work…. (L03)

They should be people well-versed in design, not general interpreters (L05)

I expect the interpreter to be well vested in the course I teach (L06)

Also, some lectures explained that interpreters who work at the tertiary level should be professionals who have a vast repertoire of language and lexicons, be intelligent and are sociable, and open to new ideas:

An interpreter is someone sociable and free (L01)

I will prefer somebody who has that high repertoire of language (L02)

That person should be open to new ideas… (L03)

Honestly, the interpreter should be professional interpreters not our students on an internship or national service (L04)

Yes, you should be intelligent, I find most of the interpreters to be intelligent because sometimes I think about how they can do all of that? And put let's say a whole sentence into just one sign for students to pick up. It beats my mind. It is amazing. (L05)

Also, I expect them to be skilful and fluent in the interpreting (L06)

6.4.1.6 Participants' expectations of tertiary institutions

Participants thought that if tertiary institutions practice inclusion for deaf students, it was paramount that they provide support services that facilitate learning for all students. Interpreters and deaf students expressed their views about tertiary institutions.

6.4.1.6.1 Interpreters and deaf students' expectations of tertiary institutions

Having a conducive environment means classrooms are easily accessible to students and help them in achieving their individual learning goals. An interpreter expressed an expectation of the university's classrooms by stating he feels the classroom should

be set up to promote inclusion. He stated that for university classrooms to be conducive, the university needs to provide amplification systems which enable people in the classroom to hear each other when they communicate:

> I think the university can try to provide more public address (PA) system in every lecture hall so that interpreters can hear and understand *everything the lecturer says. (SLI05)*

Interpreters expressed their expectations on how tertiary classrooms should be set up to facilitate learning and teaching through interpreting. Regarding the classroom settings, 40% of the interpreters indicated that for interpreting to facilitate learning and teaching, the university should allocate space in front of the classrooms purposely for sign language users. This will prevent obstructions such as hearing students/lecturers blocking the views of deaf students/interpreters during classroom interactions. It is often challenging for sign language users to be struggling for seats in front of classrooms with hearing students since of of the classes are usually overcrowded. They stated that it will also help sign language users avoid the struggle that they go through to secure places for themselves in the classrooms:

> *I think deaf students should be provided seats in front of a class (SLI03)*
>
> *Deaf students struggle with hearing students for chairs and seating positions… the university should do something about that (SLI05)*
>
> *Interpreters positions should be fixed and should not be at a distance far away from deaf students (SLI06)*
>
> *I think they should always give us spaces in the classrooms (SLI07)*
>
> *They should be made to have their corner and not the lecturer thinking when they are here, they distract their teaching... (SLI08)*

A deaf student and an interpreter who commented on the seating arrangements in the classrooms shared contrasting views. Whereas the deaf student didn't have any problem with the classroom arrangement since he thought each student had a desk to sit on during lectures, the interpreter was of the view that the classroom arrangement was not good enough and should be rearranged into a U-shape,

> *I don't have any problem with the arrangement. Each student is to a desk, the lighting system is also okay so there is no barrier to communication, (Deaf01)*
>
> *I think seats should be arranged in U-shape so that wherever deaf students sit, they can see the interpreter. There should be good lighting system and the room should be ventilated. (SLI09)*

Other participants also mentioned that to make the classrooms conducive for learning and teaching, it was important for the university to ensure that proper ventilation and lighting should be in each classroom since some of the classes are run in hot afternoons and also some into the evenings:

> *Classrooms should be ventilated and have a good lighting system for deaf students to see the lecturer and interpreters… (Deaf02)*
>
> *They should make lights available in every lecture hall so that sign language users will not struggle in the evening. (SLI05)*

Three of the participants also indicated that classroom activities could be enhanced for sign language users if the university ensured that resources (both human and materials) are provided in all lecturer rooms to facilitate learning:

> *The University should provide projectors in the classrooms to enable teaching and interpreting. (Deaf04)*
>
> *I think the university should provide recorders for them since some can't afford their recorders. (L04)*
>
> *I can't tell you about equipment or materials, but I know they have made provisions for people the university has trained, you can train people without providing equipment, but I know you can't train them well. (HOD07)*

From the foregoing it could be observed that the participants' understandings of inclusion were based on their vast expectations of each other. This suggest that actors who operate in these settings need to develop themselves to meet a wide range of expectations from their co-actors. However, the fact that other actors expect certain things from an inclusive learning environment does not always mean that their provision would promote learning and teaching. For inclusion to be effective for deaf students, a collective effort of all the various stakeholders is required. Merely expressing expectations of the various actors is not an end. To meet expectations, all

available resources and expertise must be employed so that a successful inclusive environment can be set up for learning and teaching through interpreting.

In the next section of the analysis, participants expressed their understanding of inclusion based on their practices in tertiary classrooms.

6.4.2 Participants' understandings of inclusion based on their practices

Aside from the fact that the actors' understandings of inclusion in tertiary classrooms were based on their expectations of each other in the setting, they also expressed their understandings based on their practices. Figure 6-6 provides a diagrammatic view of participants expressions understanding of inclusion based on their practices.

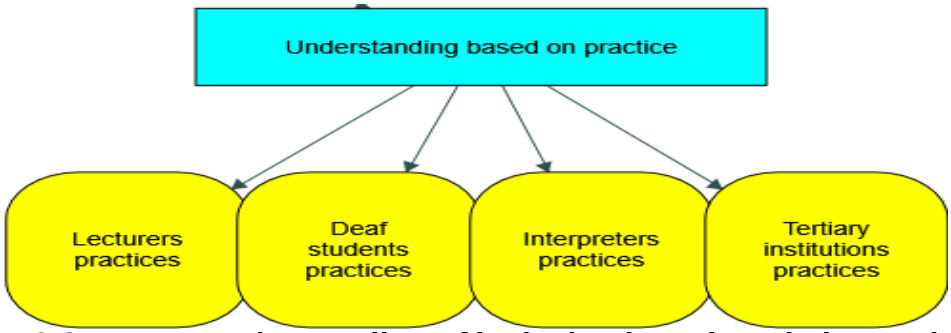


Figure 6-6. Actors understanding of inclusion based on their practices

6.4.2.1.1 Lecturers' practices in tertiary classrooms

Three out of the six lecturers described their inclusion by indicating that they create serene environments for all students and are ready to make adaptations to embrace deaf students in their lessons. They stated that to make deaf students feel included in their classes, they make sure the students are provided with seats in front of their classes, make class activities interactive so that all students can participate. They also commented that they pause regularly to inquire from interpreters whether deaf students are following their lessons. This move by lecturers in their classes facilitates easy access and enables students to feel welcomed in an inclusive learning environment. An understanding of granting deaf students' access is helpful but being present in class does not grant full participation and help students to achieve their educational goals. Facilitators must plan their lesson by making adaptions that embrace the diverse learning needs of students in tertiary classrooms:

I make sure deaf students are given front seats in the lecture hall and I even tell the class to reserve a front seat every week. (L01)

I try to make the class interactive… I believe that making the class interactive is one way I involve deaf students. (L02)

I try to establish their background to know how knowledgeable they are in my course so with that I will know how to handle that student, I pay attention to their communication. (L03)

6.4.2.1.2 Deaf students' practices in tertiary classrooms

Deaf students also describe their experiences by stating that they often work on their own to understand some of the things they heard in class and to catch up with their course activities. In instances where the students could not understand what they read; they contacted their colleagues to seek support:

I sometimes ask friends to explain to me the vocabulary I don't understand. Sometimes when the lecturer gives us homework, I use the internet to research to get the correct answers and do the assignment. I think that helps me to progress (Deaf01)

Sometimes I read on my own and the words I don't understand I ask my hearing friends to explain to me. (Deaf02)

After every class, I do personal studies. The University prepares a timetable for students every semester, and so I look at the school's timetable to prepare mine. (Deaf04)

When I read, I prepare myself for quizzes and exams. And when the word is difficult, I try to read the meaning of it before I write. (Deaf05)

Some deaf students were of the view that developing the skill of knowing how to seek support, when needed in tertiary classrooms, facilitated their learning. They indicated that when necessary, deaf students should seek support from all actors and should learn to articulate the specific on which issues they need support to promote their learning in an tertiary educational context:

I have hearing friends and so when I have problems, I consult them for their notes and then compare it to mine. When I don't understand, I ask the note taker or the interpreter to explain it to me. (Deaf02)

> *When I don't understand something in class, I contact the lecturer after class to seek clarification. (Deaf03)*
>
> *I ask my hearing peers to help me. Again, I do group studies and buy books that are related to my courses and then study them. (Deaf04)*
>
> *When the interpreter finishes interpreting after class, I meet the interpreter for them to explain the things I didn't understand. If it is beyond the interpreters, I ask the lecturer to help me (Deaf05)*
>
> *When I don't understand the interpreter, I ask him to do it again until I get it. I go for group discussions (Deaf06)*

A deaf student also suggested that in the absence of their interpreters, they record the lecture so that after class they will find an interpreter to explain what transpired in the classroom for them. This helps them to be prepared for studies at the tertiary level:

> When the interpreter is not there, I will record the lecture and give it to someone *to interpret for me later. (Deaf05)*

6.4.2.1.3 Interpreters' practices in tertiary classrooms

Understanding of consumers

An interpreter indicated that he prepares adequately for his job by understanding his deaf consumers. He described his familiarity with the Deaf culture and how he deals with deaf people:

> As an interpreter, first of all, I try to know the level of understanding of my consumers I try to go through the course outline and prepare adequately *for the class. (SLI02)*

Team interpreting

Regarding team interpreting, two interpreters revealed that they work in teams so that one can augment the other in case the other is tired or need support for signing a concept:

> *We work in twos or threes in a class, so that if one is tired the other person can support. An interpreter must not work alone (SLI06)*

We are always 2 during our assignments. If the lecturer is teaching and the words are difficult for me, the other interpreter helps. (SLI09)

Some participants also indicated that one way in which they prepare for the tertiary level was that they consult their consumers to seek their views on their interpreting and do post assignment reviews with team interpreters. They added that interpreters should consult other literature and sources to find out how new concepts are signed:

I consult my mentor and sometimes I contact some deaf students to learn how they sign concepts that are new to me. (SLI05)

I sit with the team member and discuss what the previous assignment so that I can improve on my next assignment (SLI06)

I read the lecture notes and find signs for concepts I can't sign, and try to add facial expressions to enhance understanding. (SLI09)

6.4.2.1.4 University's practices of inclusion

In their understanding of inclusion, heads of departments indicated the support they offer deaf students and interpreters in their settings. Five out of the eight heads of departments who spoke on the support they provide to sign language users indicated that whenever they have deaf students in their departments, the university through the Department of Special Education provided them with interpreters:

What I know from my department is that the university provides interpreters whenever we receive deaf students. (HOD01)

…students with hearing impairment have interpreters who go with them to the various lecture halls to interpret for them. (HOD04)

Deaf support is basically from the interpreters and I think that's the only thing we have done for them… (HOD05)

The university has provided a lot of interpreters. (HOD07)

At various ceremonies in the university, interpreters are being provided for deaf individuals. (HOD02)

The head of the Special Education Department confirmed the assertions by the other heads by stating that the department uses the services of students who are good in sign language to support deaf students from other departments. Also, the department

occasionally runs orientations for interpreters and lecturers who work with deaf students:

> *This university is interested in the promotion of sign language for deaf students… The department in conjunction with the university support interpreting… Most departments contact the department of special education to provide interpreters for the students who are deaf. The special education department selects some students in their department who are good and willing to offer their national service to the department and the university at large to interpret for the students who are deaf. Sometimes the interpreters and lecturers are being briefed on how deaf students answer questions. (HOD08)*

This section sums up the understanding of the actors in an tertiary level. Their reflections on their expectations and practices reveal their understanding of inclusion. In this context, participants' expressions revealed they have a good understanding of inclusion based on their expectations and practices. However, they did not emphasise working together to promote the practices. From the analysis, some of their descriptions centred on the idea that there are barriers for deaf students that need to be removed in facilitating learning for the students. The analysis also revealed that bridging the communication gap between deaf students and their lecturers is not enough to facilitate learning for the students. All actors and stakeholders involved must bring their expertise to support the practice in order to maximize the learning outcomes of the students. Each actor should also recognise that they have a part to play to set up inclusion for deaf students in tertiary classroom to maximize each learner's potentials and help them achieve their educational goal.

It is on very few occasions that all the actors come together to discuss the best way to work together and support each other. In most cases, there are no meetings and each cohort of actors work on their own. Though mentoring occurs among the indivual groups, for example, often the interpreters who programmes in place to support new interpreters. Continuing deaf students also occasionally meet with new deaf students to brief them on how to learn through interpreters in the university and the expectations of them within the context. However, there are little to non existing cooperation and collaborations between the actors to support the classroom interactions.

Having participants who have these socio-cultural understandings of inclusion of deaf students in tertiary classrooms will impact on the role of interpreting in facilitating classroom interactions between deaf students, lecturers and interpreters. Within this context, interpreters who mediate the interaction between deaf students and their lecturers will have some demand and control option considerations emerging as a result of the socio-cultural understanding of the actors of the classrooms. The next chapter presents results and analysis of the various demands that interpreters encounter in the classrooms whiles they facilitate the interactions between deaf students and lecturers and the control options used in managing these demands.

Chapter 7

Demand control considerations by interpreters in tertiary classrooms

7.1 Introduction

Having established the participants' understandings of inclusion, this chapter presents the findings and analysis of the demands and control options of interpreting in tertiary classrooms. In a context where most of the actors of tertiary classrooms come together with varied understandings of their roles in supporting inclusion, interpreters will be confronted with different forms of demands and may employ various control options to manage the situations. The understandings of deaf students in the use of interpreters, lecturers' support for interpreting and their understanding of the roles of interpreters in the classroom and interpreters' proficiencies in mediating tertiary inclusion all have impact on the classroom interpreting. In the classroom context, interpreters interpret the interactions between deaf students and lecturers and sometimes hearing students (when hearing students become involved in classroom interactions) to help the deaf students achieve their learning goals. These interaction make the interpreters encounter some demands and therefore, may need to choose control options that will help them mediate the interactions. Figure 7-1 illustrates the structure of analysis of the demands and controls options in this chapter.

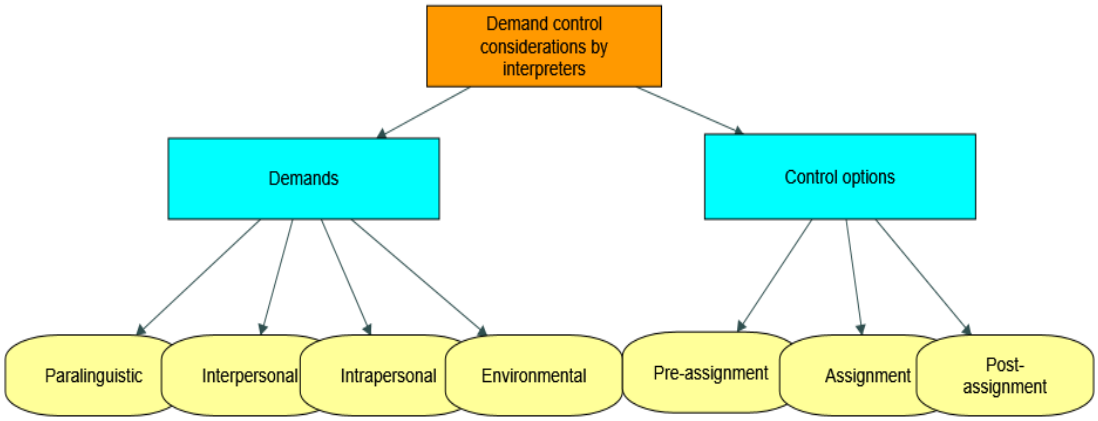


Figure 7-1 Demand control considerations by interpreters (adopted from Dean and Pollard, 2013)

7.2 Demands

Demands are the issues that interpreters encounter during their assignments (Dean and Pollard, 2013). These could be environmental, intrapersonal, interpersonal and paralinguistic (see Figure 7-2). Interpreters in this section were asked to describe some of the demands they encounter in tertiary classrooms to get data to address **RQci**. Figure 7-2 highlights the various demands which have been used in analysing those that interpreters encounter in the classrooms.

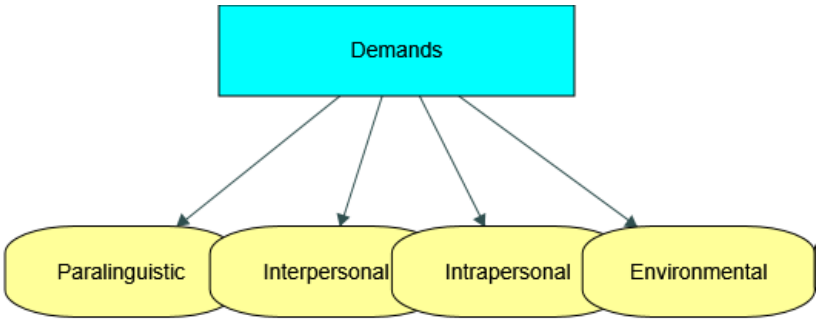


Figure 7-2 Demands of interpreting in the tertiary classroom (adopted from Dean and Pollard, 2013)

7.2.1 Environmental demands

The environment in which interpreting occurs often creates some demands to interpreters. Often, if the lighting in the room is not bright enough or is positioned at a place where it either faces the interpreters or throws shadows on them, it makes reading their signs difficult. Also, interpreting in conditions where there is a limited

amount of ventilation, or noise, or large classes could pose demands for interpreters. When interpreters were asked about the kinds of environmental demands they respond to in the classrooms, six out of ten revealed the stress they go through in the classroom as a result of the unfavourable ventilation and lighting conditions in the classrooms:

> *Yes, sometimes where I sit, though I'm sitting close to a window, the air is not enough so you see me sweating. (SLI02)*
>
> *The number of students in the class, the size of the classroom itself, lighting system, where you even sit to interpret for the students, at times students will be passing which will be blocking some of the signs from getting to the students. It poses a challenge to me (SLI03)*
>
> *At times those passing make noise so when the lecturers speak you can't hear (SLI04)*
>
> *For lighting is okay but for ventilation, sometimes we will be feeling the heat around. Sometimes the class will be crowded and sometimes there will be heat around. Sometimes the fan will not be working so the interpreter will be sweating but you need to do the work (SLI07)*
>
> *Seating arrangements and ventilation affect interpreters. (SLI08)*
>
> *During afternoon lectures, most deaf student can't see the interpreter because we sit near the window and the sun reflect on us and the number is also huge so you can't shift. (SLI09)*

7.2.1.1 Seating positions

Classroom seating arrangements and positions of sign language users often pose some challenges for the interpreters. Often, deaf students are seated at distances which are either too close or too far away from interpreters. The participants stated that these kinds of seating positions do not facilitate good communication in the classroom particularly in instances where classrooms are built in exam-room style but not in a lecture-room style. In some other instances, the interpreters stated that even if deaf consumers are well seated, there are some obstructions from other hearing students who may be moving about in the lecture rooms whilst classes are still ongoing. In their own words, they stated:

Some of the demands are, for instance, maybe the positioning as an interpreter, where you sit or stand, deaf students can't see you (SLI02)

Sometimes you go to the classroom and where your deaf students are sitting is very far from the interpreter (SLI05)

The classroom arrangement. Some of the classrooms, the chairs are arranged to be too close to each other so the distance between where I sit and the students sit is very close so sometimes interpreting is usually a problem because when the person is closer to you, visualization of whatever you sign is a problem (SLI06)

Sometimes, to find a place to sit is challenging and even if you get a seat, hearing students will be interrupting with their movements (SLI08)

7.2.1.2 Durations for interpreting

Two of the participants indicated that the number of hours required of them to interpret often puts stress on them and impacted on their next class assignments:

I interpret for let's say 3 hours, at a point in time, I see that am very tired and I feel like sleeping but I do my best to continue with the job (SLI02)

Sometimes you are already tired because of the duration of the lecture and you need to go for another lecture so already there is this inner tiredness and stress… (SLI06)

7.2.2 Interpersonal demands

Interpersonal demands are those demands that interpreters must deal with between themselves and other actors. Participants in this section stressed that lack of attention from deaf consumers, misunderstanding of concepts signed by deaf consumers, and questions and answers from deaf students were among the interpersonal demands with the other actors in tertiary classrooms.

7.2.2.1 Lack of attention

Deaf students' lack of attention in the classrooms was one of the interpersonal demands that interpreters spoke about. Since interpreting is a visual activity, it requires deaf consumers to constantly look at interpreters to follow and understand what is said in class. However, as a demand, four out of the nine interpreters indicated that some deaf students don't pay attention to their interpreting because

they are often involved in conversations whilst lectures are ongoing. Interpreters indicated that this often distracts them from their work.

> *What I have noticed is like, when you are not deaf students' favourite interpreters, they will not pay attention to you and that often confuses me (SLI01)*
>
> *You will be interpreting for them then they will be conversing. They will not pay attention to what you are saying (SLI03)*

In addition, participants expressed that due to the classroom arrangements and the things being displayed in the classrooms, deaf students get distracted and do not pay attention to what is being interpreted. An interpreter remarked:

> Basketry fall under art education and they have kept some sculpture and other things in the classrooms so sometimes when you are interpreting, *you will notice that deaf wouldn't focus on you. This really affects the way I interpret (SLI10)*

7.2.2.2 Deaf students misunderstanding of concepts

Some of the interpreters indicated that they deal with the demand of deaf students' misunderstanding of concepts used during interpreting. They stated they often get distracted by students who don't understand concepts used in the classroom.

> *Some deaf students don't understand some concepts so always I have to fingerspell it for them and leave the other especially when I interpret for at least three deaf students in the same class. (SLI01)*
>
> *The challenge is that sometimes I sign something to deaf consumer, and they say they don't understand me (SLI02)*
>
> *I become confused when lecturers want deaf students to understand something and deaf students don't. (SLI03)*

7.2.2.3 Questioning and answering

Questioning and answering as a tool of engagement in the classrooms was a demand that interpreters respond to in their assignments. They indicated that instead of deaf students to seek the attention of the lecturers and asking or responding to the lecturers questions, mostly the deaf students preferred to discuss those ideas with their interpreters whiles class activities are ongoing. These direct interactions

between the deaf students and the interpreters from deaf students, often disrupted interpreters from interpreting since they have to pause and respond to the needs of the students whilst the lecture is ongoing:

> *Sometimes too, if they have a contribution and I ask them to raise their hands for the lecturer to call them, they say no, or I am shy. (SLI01)*

> *…for instance, something has been projected as I am interpreting what the lecturer is saying, deaf students will ask me for clarification from me on the projections meanwhile the lecture will be ongoing (SLI02)*

> *Sometimes the lecturer might be saying something and your consumer, the student might also be signing to you (SLI06)*

7.2.3 Paralinguistic demands

Paralinguistic demands are the demands that interpreters encounter as a result of the way some actors use languages in the classrooms. Among the issues of language, they mentioned the pace at which both lecturers and deaf students communicated in the classrooms. The participants state that the pace at which lecturers speak often makes it challenging for them to interpret lessons in the classrooms. Mostly because it takes some time for interpreters to process what is spoken (processing time) they require lecturers to speak at a normal pace and pause occasionally for them to catch up on their processing time. However, interpreters indicated that sometimes lecturers forget their existence in the classrooms and speak too quickly. Participants further commented that occasionally some lecturers also use Ghanaian languages with which they are unfamiliar so there is often communication breakdown and interpreting is affected. As a demand, interpreters also described that some lecturers were moving about in the classroom which makes it difficult for them to hear the lecturers. Sometimes, lecturers even block the view of deaf students, so they are not able to see their interpreters.

> *Some lecturers do not talk louder for you to hear (SLI01)*

> *Some lecturers normally forget there are deaf students in the class so the rate at which they speak at times is faster. (SLI03)*

> *Sometimes they speak so fast that we need to prompt them (SLI04)*

Sometimes they use a Ghanaian language, sometimes they use idioms in Ghanaian language I don't understand (SLI06)

Some lecturers speak like they are preaching, very faster. (SLI07)

Lecturers sometimes use big words that I don't understand (SLI09)

Again, the participants reiterated the speed at which some deaf students sign poses demands for them. They indicated that deaf students sign at a faster pace which makes it difficult for them to follow and interpret. Other interpreters stated that they find it difficult to understand first year deaf students who often use concepts unknown to them. Another demand that participants said they encountered was related to the structure of the Ghanaian Sign Language (GhSL). Some interpreters indicated that it becomes difficult for them when they must convert GhSL into the English language. This has implications on the way deaf students are made ready for learning through interpreting in the classrooms.

When they sign, it is too fast… the level 100's, you see the way they sign is different from how we sign here in the university (SLI01)

If deaf students sign and you want to translate, you need to polish the English up for them there are potholes how they sign their English. The lectures also speak good English and you have to sign it in a way deaf will understand without the fantasies in it which at times causes a little challenge (SLI03)

Yes, the issue is that even though they have been taught how to sign at the university, at times they use their Junior High School (JHS) signing which is not correct and this makes me confused (SLI10)

7.2.4 Intrapersonal demands

This demand emerges from the interpreter's background, wellbeing, personality type, and knowledge and skills of interpreting. When interpreters were asked about what intrapersonal demands they encounter in the classrooms, four out of ten of them recounted instances where their intrapersonal conditions hindered their ability to interpret in classrooms. They stated the feeling of nervousness, shyness, limited sign language vocabularies as some of the demands they respond to in classroom settings:

I'm a shy type and I find a crowd to be something else for me (SLI04)

Sometimes I feel nervous especially when interpreting in a class where some students know about interpreting. (SLI05)

Sometimes, you will be interpreting, and you will be stuck for words. So sometimes it's a challenge that I think I need to know more (SLI07)

Sometimes, some of the courses that I am not conversant with, I find it very difficult signing some of the words (SLI09)

After analysing the demands interpreters encounter in tertiary classroom, the next section of this chapter describes some of the control options that interpreters use to manage their demands.

7.3 Control options

Controls are the decisions interpreters make to respond to the various demands which they encounter in their assignments (Dean and Pollard, 2013). Controls can either be employed before an assignment, during an assignment and post-assignment (see Figure 7-3 for the various control options). Interpreters were asked about how they manage the various demands in interpreting at tertiary classrooms. This aimed at establishing how interpreting are able to mitigate the challenges they encounter in the classrooms as they facilitate the interactions between deaf students and lecturers.

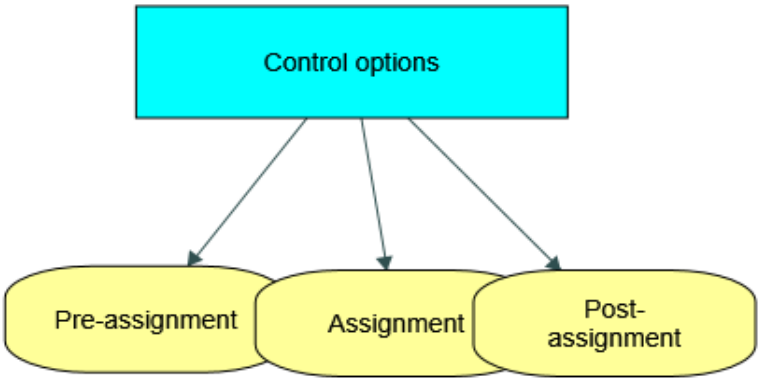


Figure 8-3 Control options interpreters employ in tertiary classrooms (adopted from Dean and Pollard, 2013)

7.3.1 Pre-assignment controls

Interpreters described some of their pre-assignment controls as follows.

7.3.1.1 Go to class early

Interpreters made comments suggesting they make sure they go to the venues early for their assignments to sort the demands on limited seats being available in the classrooms. They also indicated that they go to the classrooms early so they can introduce themselves to the lecturer in charge of the course to familiarise themselves with each other and use the opportunity to explain their roles in the classroom to the lecturers:

> *Sometimes what I do is, I try to tell deaf students to make sure to get seated earlier before class commences and also try to make sure that where she will sit will be good for interpreting. (SLI02)*
>
> *If the lecture starts at 7:30 am, I will be there early maybe somewhere around 7:20 so that I will be able to wait for the lecturer. (SLI05)*
>
> *I try to come early so that I will have that personal interaction and create rapport and relax before classes begin. (SLI08)*
>
> *Before I go for interpreting, I introduce myself to the lecturer and explain my role to them. Again, I tell the lecturers about how deaf students learn. (SLI10)*

7.3.1.2 Seek support

Five out of the ten interpreters indicated that they do pre-assignment preparations by contacting lecturers for their handouts and read to know the content to be discussed before the lecture. Some also contacted deaf students and interpreters for support and learn how to sign new concepts. These kinds of preparations helped interpreters to be familiar with the course content for the day and prepare them for their classes. Unfamiliar concepts are practiced during this preparation stage to facilitate smooth communication in the assignment. They also use the internet and other sources like libraries and their phone to find out how concepts are signed so that during their assignment, they can deliver accurately without many omissions:

I ask the lecturers for their handouts for deaf students. If lecturers refuse, I ask the students to contact their friends for their notes (SLI02)

When I realise that some concepts are unfamiliar to me, I learn them before the lecture begins so that I wouldn't find myself wanting. (SLI04)

Sometimes I use my phone to research concepts I can't sign. (SLI05)

I learn the lecture notes before the class (SLI07)

I went to the lecturer for his notes for the subsequent lesson to prepare ahead (SLI09)

7.3.2 Assignment controls

As interpreters interpret, they make decisions on the demands that emerged in their assignments. These decisions are assignment control options. Amongst the assignment controls, interpreters use in the classroom included writing on a board, prompting speakers and working in teams.

7.3.2.1 Writing on a board

A participant stated that in order to manage the demands of fingerspelling and deal with new concepts that come up during their assignments, they have a small board on which the co-interpreter writes the words that come up to show the deaf students. Although this is a traditional innovation that helps deaf students see the words that are used in the classrooms, it does not convey any meaning to deaf students who may not be familiar with those words. Also, as co-interpreters write on a board to display for deaf students, it takes the students' attention from what the on-task interpreter is communicating. In the case where this approach is used as the last resort, the lecturer must be asked to pause for the appropriate interpretations to be rendered to the students. In cases where there is no understanding by the student, lecturers should be asked to explain further:

> You work with someone so that person will write on the marker board when she notices they are not getting the word you are fingerspelling for them *(SLI01)*

7.3.2.2 Prompt speakers

Six of the interpreters commented that when lecturers speak faster or block their views for interpreting, they prompt the lecturers to slow down. In situations where they don't hear the lecturer's voice or don't understand the concepts used, they ensure that lecturers repeat themselves and also explain the new concepts to aid interpreting:

> *Lecturers are ready to repeat when I prompt them, so I always prompt them when I don't hear or understand what they say (SLI01)*
>
> *I have to prompt them to repeat what they say and then I try to interpret the same to deaf students (SLI02)*
>
> *When they are speaking faster, I prompt them or let my team interpreter alert them to slow down. (SLI03)*
>
> *I ask the lecturers to speak louder so that I can hear (SLI05)*
>
> *If the lecturer is moving fast, I normally prompt the lecturer (SLI07)*
>
> *At times, I prompt them, and they will slow down (SLI08)*

7.3.2.3 Work in teams

Team interpreting is when two or more interpreters work together on the same assignment in a setting. Interpreters revealed that they use this strategy to manage the stress they go through in interpreting long lectures all by themselves. Six out of the ten respondents indicated that when they face concepts that are not familiar to them, their team members assist them with those concepts. Also, when they get tired whilst interpreting, they switch with their team member for them to support them:

> *Since we go there as a team, we make sure before the lecture starts, we tell them we are a team (SLI01)*
>
> *In those bad times, at times you have team interpreters so if I'm not able to do it, I just swap with my team interpreter (SLI03)*
>
> *Sometimes I talk to my team interpreter that maybe I have this challenge if they can do that for me (SLI04)*
>
> *Sometimes when I am interpreting get tired, I stop interpreting, relax a bit then prompt my colleague to take over. (SLI06)*

I ask my team member to write on the board for me, then I continue interpreting for my deaf students (SLI07)

What I do is, I ask my co-interpreter to interpret whilst I sit to learn some of the concepts from him/her. (SLI09)

7.3.2.4 Stop interpreting

Two of the participants also indicated that in situations where they were not sure of what to sign, they pause and not sign anything until they were sure everything was okay for them to continue. This strategy makes deaf students miss some of the issues discussed in class. Though this is not a strategy to recommend since deaf students have the right to access every information in the classrooms, this strategy gives interpreters who work alone some breaks and avoid the situation of misinterpreting what lecturers teach:

So, when students are passing, I stop. After they pass, then I sign what the lecturer said previously then I follow up. (SLI03)

You just have to keep quiet. Maybe after the lecture, you try to meet your consumers and if you can assist them, you try to give more assistance to them. (SLI05)

7.3.2.5 Post assignment meeting

A respondent also indicated that his response to managing some of the demands he encountered in the classrooms was to make sure that after class he met his consumers to explain the areas which students didn't understand during the lecture.

I meet my consumers and ask them whether they understood everything or did anything go wrong so that I can go through the course *again with them in case they didn't understand me. (SLI07)*

7.4 Summary

This section of the analysis reveals various demand and controls option considerations that encounter as they mediate the interactions between deaf students and lecturers in tertiary classrooms. Analysis was done on interviews with 10 interpreters. Interpreters highlighted various types of demands ranging from environmental to intrapersonal. They described specific strategies, or control options

they use to manage those demands in the classrooms. Their comments rarely showed how the various control options they use are in line with standard international practices, however, in their context and because they were not professional interpreters, their responses indicate what they do in interpreting in tertiary classrooms. When interpreters encounter demands, they try to find whatever means available to them to help to manage those demands without necessarily considering the consequences and how those strategies will affect the interpreting process.

This chapter provides an understanding of what interpreters reveal they go through in the tertiary classroom context when the actors of this context come together with different socio-cultural understandings of inclusion. These findings also provides interpreters' perspectives of demands control considerations in the classrooms. In the next chapter, an analysis of video data based on the interaction between deaf students, lecturers and interpreters is done. This provides a clearer picture with snapshots evidence of the interaction and highlights what the participants do in the classrooms which could be compared with their expressions of expectations and practices within this context.

Chapter 8

Interactions between deaf students, lecturers and interpreters in tertiary classrooms

8.1 Introduction

The previous two chapters have analysed participants' understandings of tertiary inclusion and the demands control considerations interpreters make as they work with these participants in the classrooms with the tertiary context. This chapter presents the analysis of the interactions in tertiary classrooms. It begins by setting out the protocol designed to analyse the interactions between deaf students, lecturers and interpreters in tertiary classrooms. Six hours of video data were generated from tertiary classrooms where interpreters mediate the interactions between deaf students and lecturers to develop an understanding of the nature of interactions between the participants of this context. The analysis provides an insight into the collaborative support between the participants in the classrooms and how interpreters employ team interpreting to support the interaction in the classrooms.

The interaction data was also generated to give insight into inclusive practices identified above (from the interviews presented in Chapters 5 and 6) through the classroom interaction. This chapter describes participants' collaborative support in the classrooms and team interpreting through the multimodal analysis of the interaction data. Whereas the analysis of collaborative support focussed on how deaf students, lecturers and interpreters worked together in the classrooms to facilitate the students' learning outcomes, analysis of team interpreting focused on the interpreters and how they provided support to their team members in mediating the classroom interactions. These brought out what the participants do in the classrooms vis a vis their expressions of views regarding inclusion. From the literature review, it was evident that collaboration occurs when there is collaborative support from all actors in the classroom. Again, from the literature, team interpreting was central to successful interpreting in all contexts. Therefore, collaborative support and team interpreting were used to examine the interactions of the participants in the classrooms.

It was complex to capture participants' lag time, collaborative support, team interpreting and signs as they happened in the classrooms on audio, or through field notes (Almahrouqi, 2010); therefore, a video technique was used since it offered the opportunity for a post-classroom multimodal analysis. Videoing the participants allowed for repeated scrutiny of their interactions using slow-motion facilities such as EUDICO Linguistic Annotator (ELAN) (Heath and Hindmarsh, 2002, Hellwig, 2020) which helped in the multimodal analysis of the interactions. ELAN is computer software that can be used as a tool for annotating and transcribing video and audio data (Hellwig, 2020, Tapio, 2013). The analysis was done across deaf and hearing interaction in the classrooms and the ELAN was a good way to capture all aspects of this communication.

An issue that arose quite often in the analysis of the interview data was that for interpreting to facilitate inclusion, there should be collaborations among the actors. The participants revealed in the previous chapters that they expected themselves to work together to resolve all issues that came up in the classrooms to aid inclusion. This analysis was done to ascertain the participants' practices vis a vis their understandings. Since the dataset was large, sections of the videos that had instances of questioning and answering and interpreter omissions (interpreters missing what lecturers say/ deaf students sign) were used for selecting data for the interaction analysis because they provided scenes where the participants interacted in the classrooms.

8.2 How the various sections were transcribed

ELAN was used in annotating the video interaction data. I set up on ELAN three major tiers which were: lecturers, interpreters, and deaf students. The participants were used as tiers because it helped to analyse in any given time the simultaneous reactions of each participant in the classroom interactions. The three tiers were used to annotate the exact expressions from the participants either in speech or signs after which translations were added in English (see Figure 8-1. for screenshot of the ELAN interface). Any expression in sign language was written in capital letters in ELAN to distinguish the sign concepts from spoken language. The three tiers were set up

because they helped generate transcripts of the participants' reactions on their interactions in the classrooms. These transcripts and snapshots of stills from the interaction data helped in running a multimodal analysis of the collaborative support and team interpreting of the participants in the classrooms. Setting these tiers and time aligning them to the video data allowed annotating and analysis in each instance of involvement of each participant in interpreting in the classrooms.

Excerpts were taken from the videos of four courses where the participants were engaged in interactions. The analysis was done on sections where participants exhibited collaborative support by working with the interpreters in promoting inclusion in tertiary classrooms. All the excerpts were selected from the classroom interactions that were characteristic of questioning and answering dialogue and instances of interpreter omissions. To provide a clear context for each classroom interaction, each episode of the analysis was done considering the course which brought the actors together. Each episode begins with a description of the course. Before videoing participants, their profiles were taken in systemic order (deaf students, lecturers and interpreters). This data w used to describe the profile of each participant in every episode of the analysis.

The next section of the analysis describes collaborative support and team interpreting.

8.2.1 Collaborative support

This section of the analysis examined the concerted efforts of all the participants in ensuring that deaf students were involved in the classroom interaction. How the actors sought for help in cases where it was needed was analysed in this section. The engagements that ensued as the lecturers and deaf students provided collaborative support to cater for the lag times of the interpreters were also examined in this section. Simultaneous interpreting (interpreting as the speaker/signer speaks/signs at the same time) which often occurs in tertiary classrooms, interpreters follow lecturers/deaf students with some time delays that need to be considered by the lecturers/deaf students in order to facilitate mediation of classroom interactions by

interpreting. This section of the analysis was used to examine the interactions of the participants through collaborative support.

8.2.2 Team interpreting

This section of the analyses focused on the interpreters and their role in mediating classroom interactions. The analyses focused on two areas:

1. Where interpreters worked as a team to support each other in their assignments and the effectiveness of such collaborations in mediating the interactions. In these segments of the analysis, attention is paid to sections whereby co-interpreters fed the on-task interpreters with concepts, and also on aspects where co-interpreters switch with on-task interpreters to support them after some minutes.

2. The second focus of the analysis was on where interpreters worked alone, and the challenges they encountered including the omissions made during the interactions.

8.3 Course one

Course one was a second-year Art Education course for the first semester of the 2018/2019 academic year. Excerpts of the interaction data were analysed in instances, where the participants engaged in practices that facilitated interpreters mediating the interaction between the deaf students and the lecturers in the classroom. This section focused on instances where lecturers considered the lag times of interpreters, interpreters worked as a team, and the collaborative support from the participants to ensure that inclusion was achieved in the classroom.

8.3.1 Participants

Deaf07 was a second-year female deaf student in Special Education (SpEd, Education for Hearing Impaired, EHI) and Art. She had her basic education through secondary education in special schools for the Deaf in Ghana. Throughout her education at the basic and secondary school levels, she never learned through interpreters or depended on interpreters for any academic work. The only time she had interpreters was when she sat her Basic Education Certificate Examination

(BECE) and West Africa Secondary School Certificate Examination (WASSCE) where some of her teachers acted as interpreters to interpret instructions from invigilators during the exams. She also had interpreting services in social settings such as from the church, political rallies and occasionally on TV. Being in the university was her first time of learning through interpreting and with hearing students in the same classrooms. She had been in the class of L03 in the second semester of the 2017/2018 academic year, so she was familiar with L03. Deaf07 also attended her previous semester course in Art with interpreters (SLI08 and SLI10) who were her current interpreters in the course. Being with the lecturer and interpreters for over a semester has created some cordial relationships between the participants which facilitated their interactions in the classroom.

L03 was an Art Education lecturer who had taught Course one at the university for over eight years. Although without any professional training on how to teach deaf students through interpreting in tertiary classrooms, he had taught deaf students in the course for five years. He had gathered some experiences regarding how to teach deaf students through interpreters in tertiary classrooms because of his regular contact with deaf students. As a child, his mother taught deaf students in a school for the deaf in Ghana. So, he learned in the same classroom with deaf students. He also lived in a compound of the school, so he did a lot of social activities such as playing, going on errands and attending church together with deaf people. He learned to communicate in sign language with deaf students from that school. Though he had forgotten how to communicate with deaf people using sign language, his experiences with deaf people are still fresh in his mind and he was happy to do anything to support deaf students he taught in his class. He did his teaching of the course without any videoing and recordings. Videoing him in his class during the study was his first experience but he gave his consent to be video recorded and included in the study.

SLI08 was a national service person in the Department of SpEd. She had a Diploma in Sign language and a bachelor's degree in SpEd EHI and Art. She was in her second year of interpreting at the university at the time of the study. She was retained as an interpreter in the university because of her professional training in deaf

education and sign language had equipped her with some signing and interpreting skills. So, the university through SpEd uses the services of some of their students who have these skills to support deaf students. SLI10 also was a national service person at SpEd. He had a bachelor's degree in SpEd EHI and Social Studies. Like SLI08, SLI10 was retained to support deaf students through interpreting because, through training in the university, he had acquired some signing and interpreting skills and could communicate with deaf students in sign language. During the time of the study, SLI10 had spent two years interpreting in the university.

8.3.2 Analysis

In this section, an analysis was run from excerpts of the video where there was collaborative support from the lecturer to facilitate interaction to support the deaf student in the classroom. Again, an analysis was done on the collaborative support in the classroom. The analyses highlighted the interactions that occur in tertiary classrooms as lecturers understand the role of interpreters in the classroom and how they factor those roles in their teaching. The analysis also provides data on interpreters who work in teams and the efficiency it brought to their work in the classroom interaction.

8.3.3 Collaborative support

8.3.3.1 Lecturer supports interpreter’s lag times

An excerpt was taken from a one-hour video recorded section of Course One led by L03, interpreted by SLI08 and SLI10, and the student was Deaf07. This excerpt revealed how the deaf students, interpreters, and lecturer worked together to ensure that messages were conveyed to their desired destinations. In this episode, the lecturer provided information to his class on how linen fabric is made of lines that were interwoven to form materials (see Figure 8-1 for a picture showing the process on ELAN)

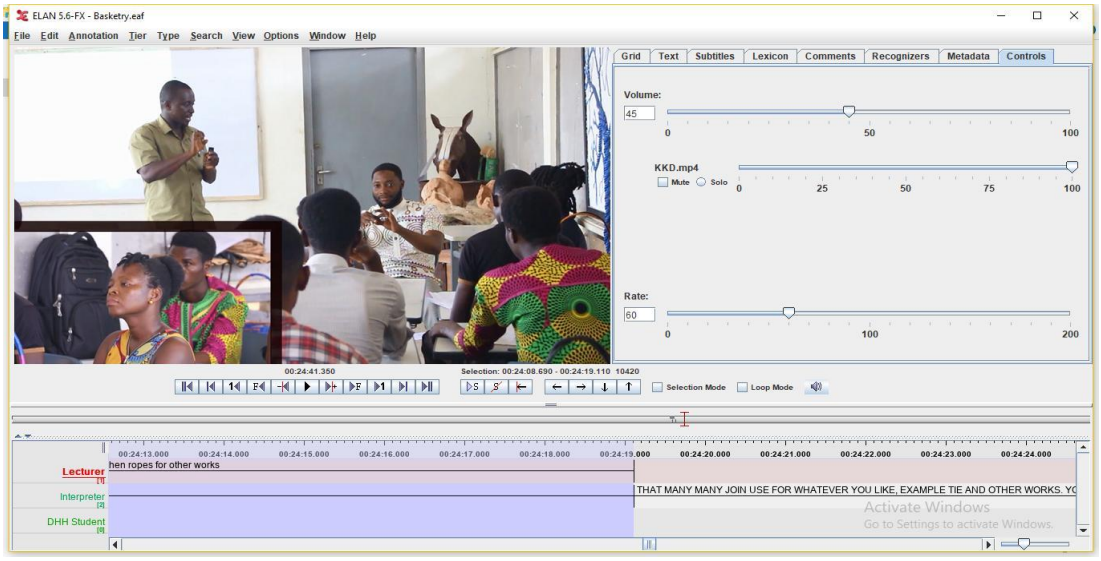


Figure 8-1. Lecturer explaining concepts to the class

In Figure 8-1, the lecturer was seen explaining a concept to the class. He paid attention to the interpreters by constantly watching him to ensure that he understood what he was teaching to his deaf student. The interpreter was seen interpreting the message of the lecture to the students whilst the deaf student was seen in the inset as watching the interpreter. The lecturer spent 10 seconds in stating "this is what is joined and woven into a fabric that can be used for ropes and other works". After making the statement, he looks at the interpreter to see if the interpretation was rendered to the student. Upon realizing the interpreter had not finished interpreting (due to the lag time) the concepts, he waited on the interpreter.

Figure 8-2a. Lecturer finishes explaining the concepts to the class

Figure 8-2b. Lecturer turned to look at the interpreter and waited

The interpreters spent 5 seconds extra in order to deliver the interpretation whilst the lecturer waited to ensure the message was interpreted for the student. This scenario

indicated that the interpreters had a lag time of 5 seconds in his interpretations. The lecturer being aware of the interpreter's lag time, supported the interpreter by pausing to ensure that the interpreter caught up with what he was teaching. Aside from the fact that the lecturer acknowledged the lag time of the interpreter, he also shifted his attention to the interpreter by watching him whilst he rendered interpretations to the deaf student. This collaborative support from the lecturer facilitated the interaction between the three actors in the classroom because the deaf student was seen to have paid attention to the interpreter. This kind of collaborative support helped in facilitating the interaction in the classroom.

8.3.4 Collaborative support

8.3.4.1 The co-interpreter supports on-task interpreter with signs of concepts

In this episode of the same lecture, the on-task interpreter missed the concept ‘summer' as used by the lecturer in his presentation (see Figure 8-3). He turned to the co-interpreters to seek support and the co-interpreter furnished the on-task interpreter with the spelling of the concept. Meanwhile, because the lecturer was observing carefully, he immediately provided further explanations to support the interpreter for the interpreter to render the interpretation to the student.

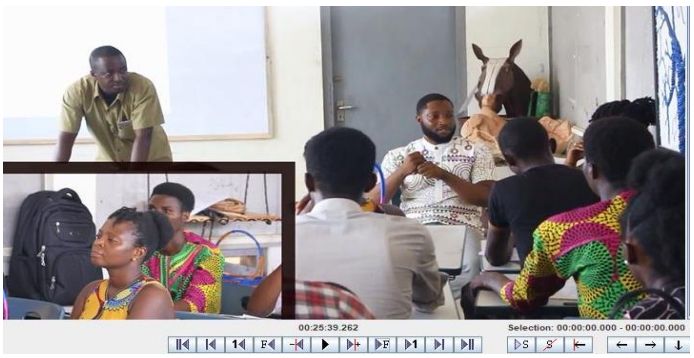


Figure 8-3. On-task interpreter seeks support from team member whilst lecturer looks on

Figure 8-4a and 8-4b provide illustrations of the interactions which occurred between the actors in this scenario. In figure 8-4a, after the co-interpreter had fed the on-task interpreter with the spelling of the concept, the on-task interpreter began to fingerspell the concept (SUMMER) to the student.

8.3.4.2 Lecturer supports interpreter

The lecturer, upon noticing the challenge the on-task interpreter had with the interpretation, gave further explanations to enable the interpreter to understand and sign the concept for the student (see Figure 8-4b).

Figure 8-4a. Interpreter fingerspells summer

Figure 8-4b. Lecturer explains summer whiles interpreter signs summer

In this episode, it can be realised that there were concerted efforts from the lecturer and the interpreters to ensure that a proper rendition of the interpretation was given to the student to ensure their understanding of the lecture. First, teamwork among the interpreters was exhibited when the on-task interpreter got stuck with a concept and solicited support from the co-interpreter. Also, because the co-interpreter was paying attention to the on-task interpreters, she hurriedly furnished the on-task interpreter with the unknown concept to facilitate the interpretations. Again, because the lecture was involved in the interpreting, to ensure that the student was receiving whatever he was teaching he constantly watched the interpreters whilst teaching and provided support whenever necessary. As he observed that the interpreter could not understand the concept used, he provided additional information to help the interpreter render the interpretation. This illustrates that the actors of this class collaborated with each other to achieve their desired outcome for inclusion in tertiary classrooms. Deaf student as seen in the inset of the figures (Figure 8-4a and 8-4b), was also involved in the class since she had fixed her eyes on the on-task interpreter during the lecture.

8.3.5 Team interpreting (team switching)

Interpreters become fatigued when they interpret continuously for more than 20 minutes (Dean and Pollard, 2013, Moser-Mercer et al., 1998, Zafirah et al., 2020). After 20 minutes, the quality of interpreting diminishes. So, interpreters must work in a team and switch among themselves every 20 to 30 minutes. Switching between interpreters provides the on-task interpreter with some rest, whilst they also rest their brains. This activity was seen in the class when after 28.31 minutes of interpreting, the on-task interpreter signalled the co-interpreters to take over (see Figure 8-5a). To ensure that no information was lost, the on-task interpreter waited until the point when the lecturer walked to the board to write. Ideally, the on-task interpreter would have informed the lecturer for the lecturer to wait whilst the interpreters switched. Yet, the lecturer because of his active involvement in the interpreting process noticed the switch between the interpreters and paused while for the interpreters settled (see Figure 8-5c). The on-task interpreter also informed the student about the switch to keep the student alert (see Figure 8-5b). In Figure 8-5d, the co-interpreters take over from the on-task interpreter and the lecture continued.

Figure 8-5a. On-task interpreter signals co-interpreter for switch

Figure 8-5b. On-task interpreter informs the student about the switch

Figure 8-5c. Lecturer pauses for interpreters to switch

Figure 8-5d. Co-interpreter on takes over and lecture continues

8.3.6 Summary

This analysis reveals instances of collaboration between the deaf student, lecturers and the interpreter in the classroom. Lecturers who are the leaders of these classroom settings need to engage in the interpreting by collaborating with the interpreters and deaf students to facilitate inclusion. As seen in the analysis, when the lecturer understood the lag times of the interpreters, he consistently watched the interpreters and was able to engage fully in the interpreting processes to ensure that what he taught was interpreted to his student. This made the student more involved in class activities. The lecturer also supported the interpreters by repeating concepts that appeared to be confusing to them. This boosted the confidence of the interpreters and even in scenarios where it became difficult for the on-task interpreter to understand concepts the lecturer used; the interpreters sought support from his team interpreter. It could also be learned that as interpreters work in teams, it reduces their stress since they can get support in the form of switching interpreters and receiving concept signs from the co-interpreters. This also helped to provide the best interpretation to the consumers of interpreting in tertiary classrooms. It could also be observed that although there were no questioning and answering sessions in this classroom, all the actors were engaged in the classroom interactions as a result of the fact that the lecturer participated in the interpreting.

The next episode of the analysis presents data from a different classroom setting where the lecturer was not very involved in the interpreting, except when there were questions and answers between her and the deaf student. This course was an example of the sort of interactions that emerged in a classroom situation where interpreters do not work in a team and interpret for longer periods of time on a course. Also analysed in this section were the omissions created in this process.

8.4 Course two

Episodes of interaction between the participants in first-year Graphic design course were chosen for this analysis. The analysis focused on some of the practices exhibited in the classroom among the participants and the sort of interactions that occurred in this tertiary classroom. Sections, where participants engaged in collaborative support during the questions and answers section, and when an omission was created in the classroom, were analysed.

8.4.1 Participants

Deaf10 was a first-year student in Graphic design. Throughout her education from basic through secondary school, she had never used interpreters for learning since she always attended a school for the deaf where teachers communicated directly to her in sign language. Her only encounter with interpreters in her education was when she sat BECE and WASSCE and some of her teachers interpreted the instructions of the exams. She had also received interpreting services in social settings such as church, hospital and on TV. Course Two was one of the courses she took in the university which had interpreting services.

L05 was a female Media and communication lecturer in Graphic design who had taught this course for more than one academic year. L05 had no professional training in special needs education or any orientation on how to teach deaf students through interpreters. However, she had taught deaf students in a course in the previous academic year, so she was quite familiar with the setup and with teaching deaf students through interpreters. Although L05 had no professional training for teaching deaf students through interpreting, she thought that when deaf students are

supported in inclusive settings the students could achieve their set educational goals. She shared her experiences on how she regularly raised concerns in her department staff meetings about the support given to deaf students in the university, and the need for concerted efforts to be made to provide the best practices in inclusive settings.

SLI02 was a part-time interpreter in the Department of Graphic design. He had over five years of experience in interpreting for deaf students in Graphic design in the university. Though SLI02 had no professional training in interpreting or education for deaf, his ability to sign prompted the department to retain him after his experience as an internship student. Upon completion of his bachelor's degree, he was retained to do his national service. Because SLI02 had a background in Graphic design, it facilitated his interpretations in courses in the department since he was familiar with most of the concepts used in those courses.

L05 and SLI02 had worked together in the previous academic year so they knew each other. However, for Deaf10, it was her first-time meeting with the lecturer and interpreter.

8.4.2 Analysis

This analysis focussed on excerpts of the classroom interactions in Course Two based on the lecturer’s reactions to the interpreter’s lag time. Because the interpreter was working alone, the deaf student tried to support him when the interpreter missed something the lecturer said. The sort of engagement which emerged afterward was analysed in this episode. Again, this analysis focused on sections of the classroom interactions where there were questions and answers among the participants and how both the lecturer and deaf students worked together to support the interpreter.

8.4.3 Collaborative support

8.4.3.1 Deaf student supports interpreter

This analysis began with an episode of the classroom interaction where the lecturer gave a list of four items involved in developing one’s idea for art. In the

interpretations, the interpreter, due to the lag time, had forgotten the fourth item (see Figure 8-6a). In Figure 8-6a, the interpreter was seen to have signed the concept "four" and had augmented the sign with the mouthing of four. However, the facial expression of the interpreter depicted that there were omissions since he had raised his eyebrows and fixing his gaze upwards to indicate he was trying to recall a concept. It is important to note that the analysis of the interview data had revealed that in situations like this, interpreters often prompted the lecturer in charge to ask for repetition of the concepts they have missed. In this class that was not the case, the interpreter tried to recall the forgotten concept without drawing the attention of the lecturer and the lecturer continued lecturing without noticing the challenge of the interpreter. This was because the interpreter failed to engage the lecturer and the lecturer was not involved in the interpreting at the time. This caused a communication breakdown between the actors since the interpreter was no longer interpreting what the lecturer was teaching.

Figure 8-6a. Interpreter misses a concept

Figure 8-6b. Deaf student feed interpreter with concept

In Figure 8-6a, it could be observed that the deaf student in the inset is seen paying close attention to the interpreter. Upon realizing the interpreter had missed the fourth item on the list of steps involved in idea development, the student fed the interpreter the fourth concept (see Figure 8-6b). This created an interaction between the interpreter and deaf student as the interpreter confirmed that was the fourth concept. This affected the quality of interpreting since the students did not received the right amount of information and also was burdened with the extra work of supporting the interpreter instead of her focussing on her studies. Again, the problem with this

support was that since the interpreter was not the one teaching, it is expected that the attention of the lecturer is drawn to confirm what the student had said was right or wrong, but that did not happen. Again, if the interpreter was working with a team member, at least the co-interpreter could have assisted to cater to the omission of concepts as a result of the on-task interpreter's lag time. So, if it was assumed that the student's response to the interpreter was wrong, the wrong interpretation of the lecture might have been rendered to the student without the lecturer knowing. Also, in both Figures (8-6a and 8-6b), the lecturer was seen to be lecturing without paying attention to the interactions between the interpreter and the student. In tertiary classrooms, it is expected that once there is any issue which required clarification, at least the right person's (in this scenario the lecturer's) attention should be drawn to get the issue resolved. This created a lot of omissions of concepts that the lecturer taught at the time.

As the conversation between the interpreter and the deaf student unfolded, the student drew the attention of the interpreter as the interpreter was seen not interpreting and seated ideally (see Figure 8-6c). When the student drew the attention of the interpreter (see Figure 8-6d), she began to express to the interpreter her misunderstanding of what the lecturer was teaching. In all these, the lecturer was not informed, and the interactions were between the interpreter and the student. So, there was engagement between the interpreter and the student, and the lecturer was left out. This practice does not support best practices in inclusive settings.

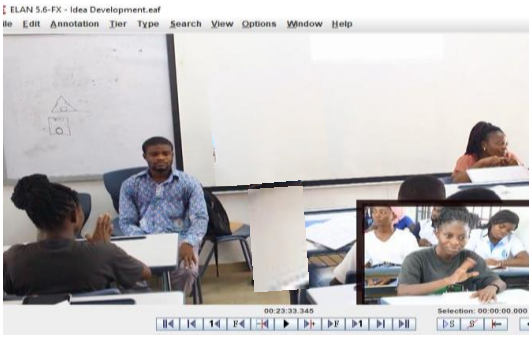


Figure 8-6c Deaf student draws interpreter's attention

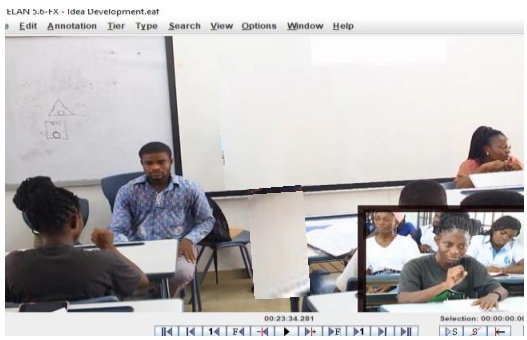


Figure 8-6d Deaf student spells to interpreter

In Figure 8-6e and 8-6f, the interpreter sought for repetition from the deaf student and confirmed that he understood what the student had told him. He did this by signing "yes" as see in Figure 8-6f. The interpreter and the student were seen to be engaged in conversations which did not involve the lecturer whilst the lecture was still ongoing.

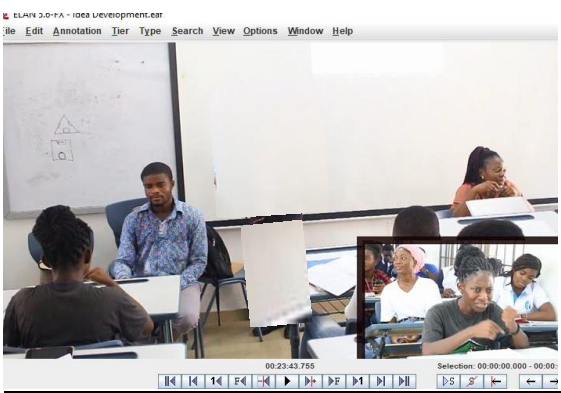
L: Samson, I haven't heard your voice today.
I: AGAIN
S: I SPELL AND WHY YOU ASK AGAIN? S-T-R-E-N

Figure 8-6e Interpreter seeks for repetition of concepts from deaf student

I: YES

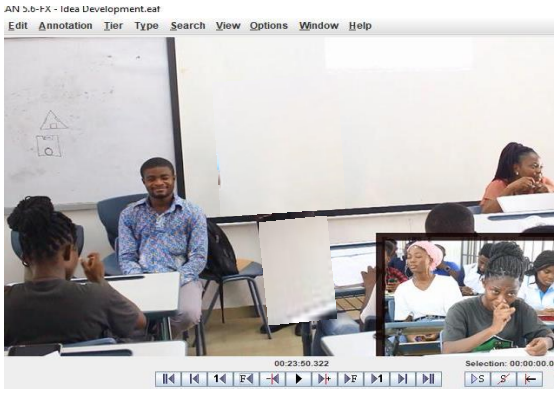
Figure 8-6f Interpreter confirms concept with deaf student

The student began to complain about not getting the details of what the lecturer was teaching (see Figure 8-6g). It was expected that in tertiary classrooms, when students are not clear with something, they raise their hands to call the attention of the lecturer however, this did not happen between the actors in this context. The student expressed her misunderstanding to the interpreter and the interpreter did not relay any information to the lecturer. As seen in Figure 8-6h, the interpreter smiles at the deaf student as she complains of not understanding the lecturer.



S: I DON'T UNDERSTAND THIS DETAILS.

Figure 8-6g Deaf student tells interpreters she doesn't understand



S: YOU UNDERSTAND?

Figure 8-6h Deaf student asks if interpreter understands

This interaction continued for some time while the lecture was still ongoing, and the interpreter in order to stop the student from complaining, asked her to wait (see Figure 8-6i) whiles he tilted his head towards to the lecturer to listen to what she was teaching. The interpreter chose to ignore the student as a way of resolving the misunderstanding of the student and to stop the student from engaging in conversations with him during the lecture. The student with disbelief in her face (see Figure 8-6i), kept quiet and the lecture moved on. Neither the student nor the interpreter informs the lecturer about what the student did not understand.

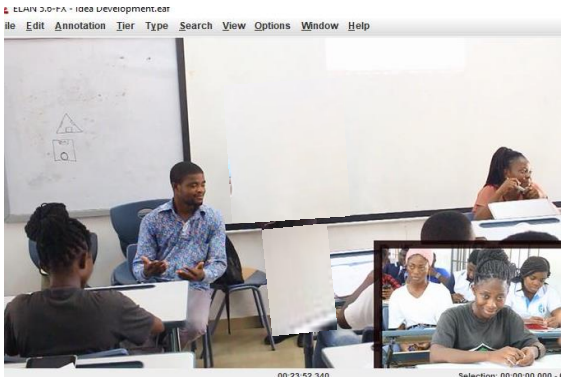


Figure 8-6i. Interpreters tells deaf student to wait

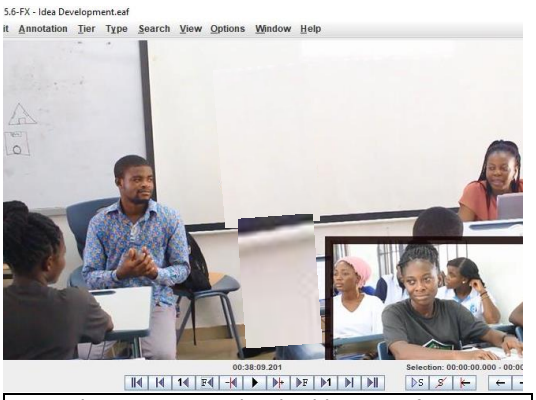
From the foregoing, it could be seen that when interpreters work alone for longer hours, irrespective of their expertise and experiences in interpreting, their efficiency reduces. In this interaction, the support provided by the deaf student turned out to be an interpersonal demand to the interpreters. Though the idea of the student was to help the interpreter with the omissions, it became evident that this created an interaction between the interpreter and the deaf student and that the lecturer was not involved in. Also, it is worth noting that not all unratified interactions between interpreters and deaf students during class hours are problematic since some may be used to clarifiy concepts used between the two cohorts. In this scenario it became problematic since the support provided by the student was based on her guess of the forth concept the interpreter was missing. In inclusive settings, one would have thought that since lecturers were in charge of the teaching and the role of the interpreter was to mediate the interactions between the lecturer and deaf student, it was necessary that the lecturer's attention was drawn, and the necessary clarifications sought. However, the interpreter did not involve the lecturer in this

interaction and chose to stop interpreting and pay attention to complaints from the student as a control option. Eventually, the interpreter asked the deaf student to wait without helping resolve the problem of the students. So, an omission created as a result of the interpreter's lag time and because the interpreter was working alone, led to an engagement between the interpreter and deaf students which led to further communication breakdowns in the lecture.

8.4.4 Collaborative support

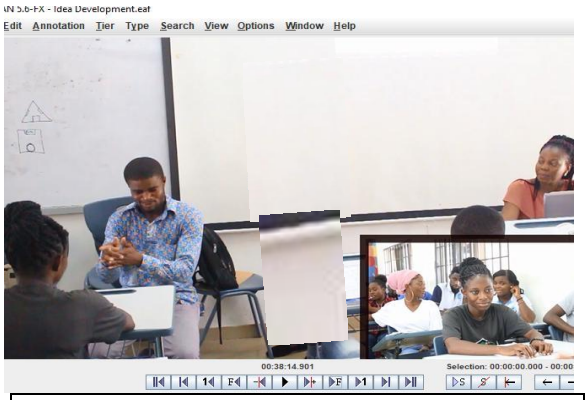
8.4.4.1 Lecturer and deaf student support interpreter's lag times

This section of the analysis was based on questioning and answering section between the participants. The focus was on the interactions created when the lecturer asked the deaf student a question and the student's responses. In Figures 8-7a and 8-7b, the lecturer asked a question, waited for some time (catered for interpreter's lag time) for the interpretations to be rendered to the student and still waited for her response. In this scenario, the interaction created here was between all three actors. It could be observed also that the lecturer catered to the lag time of the interpreter. The interpreter was seen to have encountered interpersonal demands from the lecturer, the deaf student and the hearing students in the class since all the students shifted their attention to the interpreter. However, it became easy for the interpreter to manage the demand since the lecturer was involved in the interpreting process by catering to the lag time of the interpreter which gave the interpreter some time to conveniently render the interpretation for the deaf student.



L: In what way can we develop ideas, Deaf10?

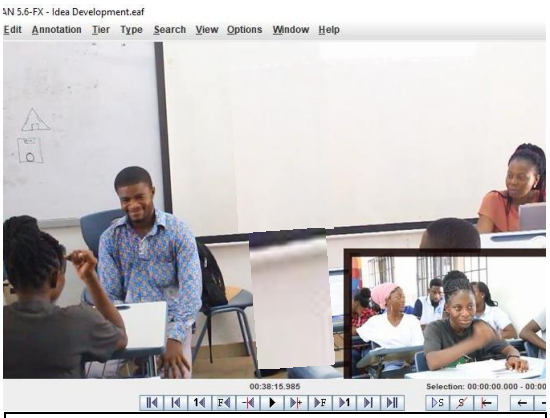
Figure 8-7a. Lecturer asks deaf student a question



I: WHAT WAY CAN IDEA DEVELOP, SHE ASK YOU?
E: She is asking you, in what ways can ideas be developed?

Figure 8-7b. Interpreter interprets the question to deaf student

As the student provided her responses, the interpreter took some time to understand what the student said in order to render the interpretation for the lecturer. The lecturer paid attention to the student and waited patiently for her responses. The interaction between the trio was clearly seen in Figures 8-7c and 8-7d. But as the student, provided her responses, the interpreter encountered a paralinguistic demand based on the way in which the student signed. In response to this demand, the interpreter sought for clarification from the student by asking for repetition from the student.



S: I EXPLAIN IDEA DEVELOPMENT FINISH, SAME WAY
E: I have finished explaining idea development

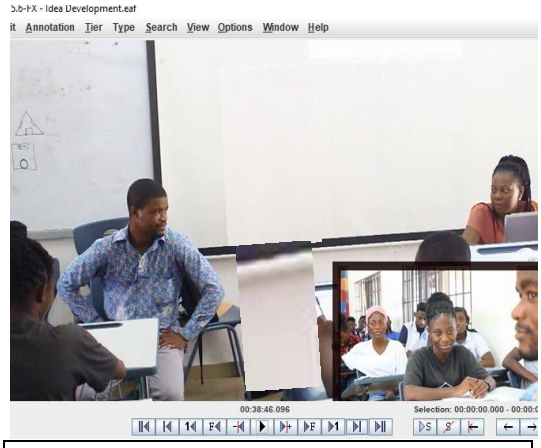
Figure 8-7c. Deaf student responds to the lecturer's question

I: EXPLAIN WAY AGAIN
E: Explain the way again
S: MAKE SKETCH ROUGH BEFORE FINAL IDEA
E: Making rough sketches before the final work

Figure 8-7d. Interpreter discusses responses with deaf student

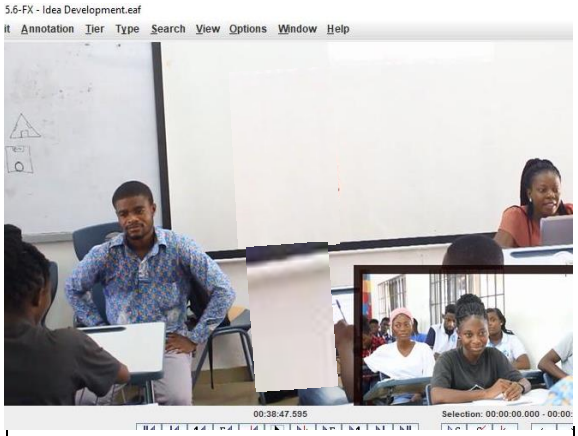
The interactions continued among the participants as finally the interpreter rendered interpretations of what the deaf student said to the lecturer in a consecutive

interpreting approach[11]. The lecturer upon receiving the responses from the student re-echoed her responses to the rest of the class whilst the interpreter and deaf student looked on (see Figures 8-7e and 8-7f).



I: Drawing from natural objects to get new idea

Figure 8-7e. Interpreter interprets deaf student's responses to lecturer



L: Did you hear that? She said drawing from memory or natural objects for concept development

Figure 8-7f. Lecturer tells deaf student's responses to class

This analysis revealed that when the lecturer initiated questioning and answering among the actors, all three actors were involved and collaborated to ensure that whatever was communicated got to their desired destinations. In this episode, it was observed that the lecturer was actively involved in the interpreting when she asked the student a question. Again, it could be observed that the lecturer dealt directly with the deaf student and demanded direct responses from the student without using any third person pronoun. On the part of the deaf student, she also provided the responses directly to the lecturer, though she and the interpreter agreed the meaning of what she was telling the lecturer before the interpreter finally rendered the interpretations to the lecturer. The interpreter also chose control options that could manage the major demands (interpersonal and paralinguistic). It can also be learned that for tertiary classrooms to be more interactive among the actors of interpreting, lecturers who are the leaders of the classroom interactions should make efforts to

[11] Consecutive interpreting is the type of interpreting in which the interpreters waits for the speaker/signer to finish conveying their message to understand the source message before rendering interpretations to the desired destination (Napier, 2011).

involve deaf students in class discussions, and that could keep the students alert and well prepared for the classes to help the students achieve their desired learning outcomes.

8.5 Course three

Excerpts were taken from a questioning and answering section in a second-year lecture. The essence was to use the demand control schema framework as a tool for analysing the interactions that existed among the actors in this lecture. Aspects of the lecture where a deaf student asked a question, how interpreters interpreted to the lecturer, and the interactions of the actors when the lecturer responded to this question were analysed. Analysis was also done on sections where interpreters used team interpreting to manage some of the demands they encountered in the class.

8.5.1 Participants

Description of Deaf07 has been given previously in this section (see description of participants under Course one, section 7.3.1).

L01 is a lecturer in the African Studies department who has over five years of experience in teaching deaf students through interpreting in tertiary classrooms in the tertiary level. L01 recounted that the only training he had in special needs education was when he did his bachelor's degree and was taken through Introduction to SpEd (Intro-SpEd). Though he had not been trained specifically on how to teach deaf students via interpreting, he used the knowledge gained from the Intro-Sped as a guide whenever he encountered any student with special needs. This understanding made him unofficially introduce himself to his special needs students before the start of his classes and also ensured that the students were seated in front of his class. He also ensured that whenever deaf students were in his class, interpreters were always present before he started his lectures.

SLI07 was a national service person in the SpEd. He did a bachelor's degree in SpEd EHI and Information and Communication Technology. He had over one academic year experience in interpreting for deaf students in tertiary classrooms. SLI07 had also interpreted in social settings such as in church and students' social gatherings.

SLI07 and Deaf07 were familiar with each other since they had met in the previous semester on a different course.

SLI09 was a fourth-year bachelor's internship student in SpEd EHI and Social Studies. Because she could communicate with deaf students, she was retained to support the students in interpreting. Interpreting for Deaf07 on Course three was her first time of working with deaf students and her first time of interpreting in an tertiary classroom.

8.5.2 Analysis

This analysis focussed on excerpts from the classroom interactions in Course three. The analysis was based on collaborative support the actors exhibited in facilitating classroom interactions during a questioning and answering section. How the lecturer and deaf students interacted with the interpreter in tertiary classrooms was analysed in this section. How interpreters worked as a team to ensure best interpreting practices was also analysed.

8.5.3 Collaborative support

8.5.3.1 Lecturer and deaf student support interpreter

Classroom interactions between the deaf students, lecturers and interpreters was seen in this episode as they engaged in the interpreting to ensure that questions from the student were interpreted to the lecturer and a response given appropriately. The student exhibited her involvement by taking the responsibility to raise her hand to draw the attention of the lecturer (see Figure 8-8a). This showed she was engaged in the lesson and was ready to collaborate with the lecturer and interpreter to facilitate the classroom interaction. Unlike other deaf students who would ask their interpreters direct questions and expected responses, this student acknowledged the distinctions in the roles of the interpreters and the lecturers. Since the student did not interrupt the interpreter in his interpretations, there was no demand for the interpreter at this stage of the classroom interaction. As the student took the initiative by raising her hand, the lecturer spotted her and invited her to ask her questions (see Figure 8-8b). This is an

indication that the lecturer also acknowledged the presence of sign language users in his class and was involved in interpreting in the classroom. He did this by shifting his attention to the student and communicated directly with the student to allow the student to ask her questions. These efforts from deaf students and the lecturer supported the interpreter in his assignment and reduced the interpersonal demands he had to contend with in the classroom.

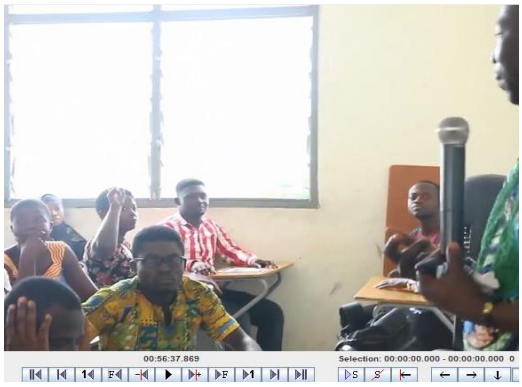


Figure 8-8a. Deaf student raises her hand

Figure 8-8b. Lecturer spots and calls deaf student

Figure 8-8c. Deaf student asks her question

Figure 8-8d. Interpreter interprets question to lecturer

The student asked her questions whilst both the lecturer and the interpreter concentrated on her (see Figure 8-8c). In this process, the interpreter managed the interpersonal demand on him through consecutive interpreting (see Figure 8-8d). The lecturer also waited and catered for his lag time until the interpreter received the full question from the student and was interpreted for the lecturer. Although the process was quite a time consuming, it allowed for the deaf student, lecturer and the interpreters to work together to facilitate the classroom interaction. All the actors contributed their part to ensure that the desired outcome of the conversation was

achieved in this interaction. When the lecturer received the question from the deaf student, he also provided responses that were interpreted to the student.

Figure 8-8e. Lecturer responds to deaf student's question

In these excerpts, it could be learned that when the actors played their roles by supporting each other in the classroom, it facilitated interpreting in mediating inclusion. This kind of understanding among the actors brought out the desired interactions in the classroom (between all the three actors) since it reduced the demands that were imposed on interpreters as a result of deaf students' interruptions in the process of interpreting. The lecturer who recognised this process gave some time to cater for interpreters' lag times. Since consecutive interpreting helps interpreters to render an accurate interpretation of messages they receive, in questioning and answering interactions in tertiary classrooms, it is pertinent that actors are encouraged to use it. This can only be achieved when each actor contributes their quota to support the process in the classroom.

8.5.4 Team interpreting

8.5.4.1 Co-interpreter supports on-task interpreter by signing a concept

Team interpreting was a key control option that the majority of interpreters indicated they used to manage demands in the classroom when they were interviewed. This part of the analysis focused on how interpreters used this control option to facilitate their interpreting in tertiary classrooms. In the lecture, it was observed that when an interpreter encountered a paralinguistic demand on how to sign a concept, SLI09 leaned towards SLI07 to whisper the concept to seek for support (See figure 8-8f and

8-8g). This was a control option the interpreter used when she felt she could not sign a concept. As seen in the figures, the co-interpreter provided the sign of the concept to the on-task interpreter to facilitate the interpretations.

Figure 8-8f. SLI09 whisper concept to SLI07 to seek support

Figure 8-8g. SLI07 feeds SLI09 with the concept

In figure 8-8h, the on-task interpreter quickly picked up the concept and continued with her interpretation. It is important that a lecture that lasts more than one hour long has two interpreters to facilitate interpreting (Maroney et al., 2020). As seen in the Figures (8-8f and 8-8g), the co-interpreter was alert and as soon as the on-task interpreter asked for support, he was ready to help. Interpreting alone without such support could mean that the on-task interpreter could have omitted the concept she couldn't sign. This would have denied the student full access to the information the lecturer provided in the lecture. Working as a team also helps the interpreter to have some rest when there is a switch.

Figure 8-8h. SLI09 grasp the concept and signs it to deaf student

8.6 Course four

Course four is one of the general courses for 3rd-year undergraduate students in the university. Episodes of this lecture were analysed for the collaborations between actors of interpreting when hearing students ask questions in the classroom. An analysis was done on how interpreters supported each other in teams and their effectiveness in promoting best practices in tertiary classrooms.

8.6.1 Participants

Deaf02 was a 3rd-year deaf student in the SpEd (EHI) and Art Education. Deaf06 is also a 3rd-year student in SpEd (EHI) and Social Studies. They are both direct entrant students from a secondary technical school for the Deaf who have never learned through interpreting except at the university level. Deaf02 and Deaf06 have two years' experience in learning through interpreters and with hearing students in the same classroom. Both deaf students have met L03 on a different course in their previous academic year, so they were familiar with each other.

L03 is a senior lecturer in the Department of Psychology and Education. He has taught deaf students through interpreters in tertiary classrooms at the tertiary level for over 10 years. As part of his professional training in his undergraduate studies, he did a course in Intro-SpEd which had equipped him with some knowledge on how to teach students with special needs in tertiary classrooms. Because of his experience in teaching deaf students, he has also acquired some knowledge in how to include deaf students in his class. L03 holds the understanding that the best practices of inclusion can only be achieved when all the actors involved are professionals. He stressed that interpreters should be professionals and not students who are on their internship. He thought deaf students should be given orientation from basic through to secondary schools on how to learn in tertiary classrooms.

SLI05 was a national service person in the SpEd. He had over one academic year experience in interpreting for deaf students at the tertiary level. SLI05 had a bachelor's degree in SpEd (EHI) and Political Science. During his undergraduate training, SLI05 took a course in Course four so he was familiar with most of the

concepts used in this course. He had also worked with Deaf02 and Deaf06 in the previous academic year when he worked as a student intern interpreter for deaf students in the university.

SLI01 was a fourth-year internship student in the SpEd (EHI) and Mathematics. Although SLI01 had training in sign language and interpreting, interpreting for deaf students in this course was her first time working in this context. She had worked as an interpreter in a different context such as religious meetings but not for teaching and learning for academic work. SLI01 had also taken Course four so was familiar with some of the concepts used in this course. Again, L03 had taught SLI01 before so they were familiar with each other. SLI01 had never worked with deaf students so they were not familiar with each other.

8.6.2 Analysis

This analysis focused on excerpts from the classroom interactions in the Course four. This analysis focused on sections of the classroom interactions where there were questions and answers among the actors and how the actors worked together to support the classroom interactions were analysed in this episode

8.6.3 Team interpreting

8.6.3.1 The co-interpreter supports active interpreting by signing a concept

In this episode, a hearing student asked the lecturer a question. As seen in Figure 8-9a, the lecturer paid attention to the hearing student trying to understand the question and respond appropriately. SLI01 (on-task interpreter) rendered interpretations to the deaf students whilst SLI05 (co-interpreter) looks at the on-task interpreter. As the interaction went on, the co-interpreter observed that the on-task interpreter was struggling in signing a concept to the students, so he supported by signing the concept to the students (see Figure 8-9b). As the co-interpreter signed the concept, both the on-task interpreter and deaf students repeated the concept by signing it (see Figure 8-9c).

HS: Does autocratic leadership involve the use of guns?
S: AUTOCRATIC LEADER USE?
E: You are a democratic leader, and there is an issue to respond to within 48hrs, but your school is on vacation. What will you do?

Figure 8-9a. SLI01 interprets whilst SLI05 looks on

S: AUTOCRATIC LEADER USE GUN?
E: Does autocratic leadership involve the use of guns?

Figure 8-9b. SLI05 supports SLI01 with a concept

Figure 8-9c. SLI01 and deaf students sign concept

What could be observed when a hearing student asked a question was that the lecturer focused on the question without necessarily paying attention to the sign language users in the class. Although the interaction which occurred in this context was between all the three actors, the interpreters and deaf students were more engaged with each other than they were with the lecturer. Usually interpreters as mediators are expected to convey messages between lecturers and deaf students in the classrooms. However, in this instance the engagement was between the students and the interpreters, and the interpreters demonstrated that they worked as a team. Whilst the on-task interpreter was interpreting, the co-interpreter paid attention and made sure that as soon as the on-task interpreter encountered a difficulty in

interpreting a concept, he provided collaborative support. The essence of working in teams was observed in this example. It helped also to provide a control option to a demand the on-task interpreter encountered.

In Figures 8-9d and 8-9e, the lecturer asked a question to the whole class expecting responses from the students. However, when the question was interpreted to the deaf students, the deaf students instead of raising their hands to be called upon by the lecturer to provide their answers chose to provide their answers directly to the interpreters. Deaf students responding to their interpreters often creates interpersonal demands for the interpreters. So, in this scenario, the interpreters chose to stop interpreting and observe the deaf students (see Figure 8-9d and 8-9e). It could also be noted that the interaction in the class at this stage was limited to the interpreters and deaf students and the lecturer was left out.

L: You are a democratic leader, and there is an issue to respond to within 48hrs, but your school is on vacation. What will you do?

S: YOU DEMOCRATIC LEADER, YOU NEED MAKE DECISION IN TWO DAY BY SCHOOL HOLIDAY, YOU DO WHAT?

E: You are a democratic leader, and there is an issue to respond to within 48hrs, but your school is on vacation. What will you do?

Figure 9d. Lecturer asks question whilst interpreter interprets to deaf students

S: YOU DECIDE, LATER YOU TELL PEOPLE

E: You decide and tell you, people, later

Figure 9e. Deaf students provide answers to interpreters whilst lecturer teaches

8.7 Summary

It could be learned that in tertiary classrooms various forms of interactions exist between deaf students, lecturers and interpreters to promote inclusion. The collaborative support from these participants were seen to be one way through which the actors collaborated in the classroom interactions. What could be seen in the

analysis was that, when lecturers were actively involved and supported interpreting, they helped sign language users to be involved in the class discussion which promoted the classroom interaction. Whenever lecturers did not involve themselves in the interpreting, interaction often existed between deaf students and their interpreters. These interactions often caused communication breakdowns between lecturers and interpreters and as such, no information was received by deaf students though teaching was occurring in the classrooms.

So, for lecturers to maximise the potentials of the deaf students, they need to ensure that they use various strategies such as directing questions to deaf students to get them actively involved in class activities and also to help the students achieve their educational outcomes. It is also important that deaf students appreciate the role of each actor in tertiary classrooms and utilise them appropriately. In the analyses, it could be learned that whenever deaf students asked lecturers questions directly, it created a positive classroom interaction between all the actors to facilitate inclusion. However, when those questions where directed to interpreters, it created a demand for interpreters and the interaction became limited to the students and their interpreters.

In addition, it could be learned that when interpreters work in teams, it not only gives the interpreters the opportunity to rest when they switch among themselves, it also boosts their confidence since whenever there was a concept which seemed difficult to sign by the on-task interpreter, the co-interpreters were always available to provide support by feeding the on-task interpreter with those concepts. It is also interesting to note that, irrespective of the number of years of experience that interpreters had, when they worked alone on courses for more than one hour, they tended to be more exhausted and omitted a lot of concepts and thereby not facilitating the interactions between the deaf students and the lecturers in the classrooms. Although some of the interpreting team members in the interactions were inexperienced, they provided some relief for their partners and supported each other to ensure that best inclusive practices were provided for their consumers.

The ongoing analysis of data in Chapters 6, 7 and 8 provides an understanding of how interpreters mediate the interactions between deaf students and lecturers in Ghanaian tertiary classrooms. First, in Chapter 5 the analysis pulls out the participants' socio-cultural understanding of inclusion. This provides evidence of the participants' understanding of inclusion which was based on their expectations and practices within this context. The expectations explain the role of deaf students, lecturers, interpreters and tertiary institutions in ensuring that universities are able set up classrooms that enable deaf students achieve their educational outcomes when they learn through interpreters. The practices of the participants as evidenced in the analysis also present the way the actors think they practice inclusion for deaf students. Each cohort of the participants stated their role in supporting the inclusion of deaf students in tertiary classrooms. This analysis highlights the need for deaf students to be ready for learning through interpreters, lecturers learning to engage in interpreting to support their interaction with deaf students, interpreters being proficient to mediate this interaction and tertiary institutions supporting students' diversity by embracing their learning needs. These set of analyses provide the context for understanding the Ghanaian tertiary education for deaf students and led to the analysis in Chapter 7.

In Chapter 7 the analysis focuses on the interpreters who have central role to play in the classrooms to ensure that the interaction between the deaf students and the lecturers are facilitated. I analysed the demand and control option considerations that interpreters encounter as they work in the classroom context where the actors come together with different socio-cultural understanding of inclusion of deaf students. The analysis presents the environmental, interpersonal, paralinguistic and intrapersonal demands that interpreters encounter in these classrooms and the control options they use to manage the demands. Chapters 6 and 7 clearly illustrate the views of the participants regarding inclusion of deaf students in tertiary classrooms and the interactions that occur in this context. However, these analyses do not present the actual nature of the interaction in the classrooms in ensuring that deaf students' learning outcomes are maximised. Chapter 8 therefore presents analysis of video

data that focuses on the collaborative support of participants in the classrooms and the team interpreting interpreters use to facilitate interactions of these classrooms.

It has become evidently clear in the analysis that the way interpreters mediate the interactions between deaf students and lecturers in tertiary institutions is a complex process. However, when collaboration is strengthened between the actors of these contexts and everyone plays their role, the deaf students could achieve positive learning outcomes.

Having presented the analysis of data, the next chapter of the study reflects on the current research in this area in the light of your findings and discusses the contributions that the study makes.

Chapter 9

Discussion

9.1 Introduction

This chapter discusses and synthesises the findings of the study presented in Chapters 6, 7 and 8. As discussed in Chapter 1 this study is situated within the socio-cultural learning theory (Chaiklin and Lave, 1993, Cole, 1996, Cole and Engestrom, 1994, Leontiev, 1981, Vygotsky, 2012, 1978) and draws on the demands control schema as a way to examine interaction (DC-S, Dean and Pollard, 2013). Interaction between deaf students and lecturers in the classrooms occurs when all the actors who have roles to play actively support and engage in the interpreting to mediate the interaction. For deaf students to achieve their learning outcomes in tertiary classrooms, the interaction around learning needs to be efficient. This means that for learning to occur in these classrooms of actors of various socio-cultural understandings of inclusion and interpreters encountering different demand and control option considerations, the interaction between the learners (deaf students) and what needs to be learned (what lecturers teach) needs to be mediated by a proficient adult (interpreters) (Vygotsky, 1978). Therefore, within the context of this study, deaf students must exhibit the readiness required for learning through interpreting; lecturers need to actively engage with the deaf students through their interpreters; interpreters must be proficient enough to mediate the interaction between the deaf students and the lecturers; and the institutions also need to embrace individual student's diversity and provide them with the needed support. I begin the discussion by first presenting key findings as revealed in the analysis to correspond to the research questions (9.2). The discussions are organised around the thematic areas of the research raised by questions in the study. Section 9.3 discusses the participants' socio-cultural understandings of inclusion which centres on lecturers' engagements in interpreting in the classrooms (9.3.1); deaf students' readiness for learning in these contexts (9.3.2); interpreters' proficiencies in mediating interactions between lecturers and deaf students (9.3.3); and institutions' readiness to

support the diversities of all students (9.3.4). These sections of the discussion are based on data generated from the survey (5.4.1) and interviews with deaf students, interpreters, lecturers and heads of departments aimed at addressing the research question that sought to examine the participants' socio-cultural understandings of inclusion, and deaf students' expectations of interpreting and their readiness for learning through interpreting. Section 9.4 discusses the demand and control option considerations of interpreting within the tertiary classroom contexts. These are based on the interviews with interpreters in response to research question on the demands and control option considerations that arise as a result of having lecturers, deaf students and interpreters of different socio-cultural backgrounds and understandings coming together to interact in the classrooms. 9.4.1 discusses the demands interpreters encounter in the classrooms; and 9.4.2 discusses the control options interpreters employ to manage the demands they encounter in the classrooms.

Section 9.5 discusses the mediating role of interpreting in facilitating classroom interaction between lecturers and deaf students. This is based on video data from the classrooms aimed at highlighting the nature of the interaction between deaf students, lecturers and interpreters. 9.5.1 highlights the collaborative support exhibited by the participants to facilitate the classroom interactions; and 9.5.2 discusses how team interpreting facilitates these interactions. Section 9.6 synthesises the discussions around the research questions and describes how the overarching research question has been addressed. Then, a collaborative inclusive learning model is proposed (9.6) and section 9.7 provides the methodological reflections of the study. 9.8 also provides reflections on the overarching research question of the study. Finally, section 9.9 provides a summary of the chapter.

9.2 Findings on participants' socio-cultural understanding of tertiary inclusion (addressed the first research question)

1. Deaf students through the survey expressed positive perceptions about interpreting in these contexts in terms of the support the universities provide for them and their readiness to learn through interpreting

2. All the participants' understandings of inclusion were found to be based on their expectations and practices in these contexts. They expressed diverse expectations of themselves in these contexts and how they think their roles influence their practices. They also stated their practices, which they considered to be the inclusion for deaf students in tertiary classrooms.

9.2.1 Findings on the demands and controls considerations of interpreting in tertiary classrooms (addressed the second research question)

1. The study revealed that interpreters encounter intrapersonal, environmental, interpersonal and paralinguistic demands. These demands often emanated from the characteristics and roles of the interpreters, deaf and hearing students, and the lecturers in the classrooms; and the way the environments have been set up for inclusion.
2. The study also discovered that as a result of the demands on the interpreters, they employed control options that helped them manage their demands before their assignments (pre-assignment control options), during the assignments (assignment control options), and after their assignments (post-assignment control options).

9.2.2 Findings on the nature of the interactions between deaf students, interpreters, and lecturers in the classrooms (addressed the third research question)

1. The findings of the study revealed that most of the actors exhibited some form of collaborations in the classrooms. However, these collaborations were more effective whenever the lecturers were involved or initiated interaction. Whenever lecturers were involved in the classroom interpreting and tried to engage deaf students in their lessons, there were collaborative interactions that included all the actors. However, when the collaboration was initiated by deaf students, the interactions were often limited between them and the interpreters. It also emerged that when deaf students engaged directly with

their lecturers during lessons, it brought about interactions among all the actors and limited the demands interpreters encountered.

2. The study also found that when interpreters worked as a team, they were more efficient in their interpreting and supported each other. However, interpreters who worked alone irrespective of their proficiency had more omissions and were less accurate in their interpretations. Such interpreters had a lot of demands to respond to as compared with those interpreters who work as a team. In the classrooms, a major control option that interpreters who worked as a team often relied on was the support from their colleagues. Those interpreters who worked alone often chose to ignore some concepts, serving as control options to their demands in the classrooms and that led to omissions in their interpretations.

The next section of the chapter presents the discussion of findings in response to the research questions as described in 9.1, and then synthesised with the literature to bring out the contributions that this study makes. The discussion is organised around three thematic areas that emerge from the analysis of the findings and address the research questions. From the findings, the key areas of discussions that arise in addressing the research questions are socio-cultural understanding of inclusion; demands and control considerations of interpreting in tertiary classrooms; and the classroom interactions within tertiary classrooms.

9.3 Socio-cultural understandings of inclusion

To examine how interpreters mediate the interaction between deaf students and lectures of tertiary classrooms, the participants' socio-cultural understandings of tertiary inclusion that stress the need for them to play their respective roles and offer collaborative support to ensure that deaf students achieve their learning outcomes was raised. This theme emerges from the research questions that address the participants' understandings of inclusion and deaf students' expectations of interpreting and their readiness for learning through interpreting in tertiary classrooms. As evidenced in the findings, the socio-cultural understandings of inclusion centre on the collaborations and engagements of all the actors involved in

the practice of a context. In tertiary classrooms, the activities of the key actors (i.e., heads of departments, lecturers, deaf students and interpreters) define the success or otherwise of the practice. For example, lecturers' engagements with interpreting; deaf students' readiness for learning in the classrooms; the proficiency of interpreters in mediating the classroom interactions; and the institutions' embracement of students' diverse learning needs constitute the socio-cultural understandings of this context. This helps to address the research question. This question was developed after I realised from the literature review that controversies were surrounding how inclusion are conceptualised in different contexts. Therefore, rather than focusing on the numerous inconclusive definitions of inclusion, I raised this question to provide the contextual understanding of participants of this study who are key actors of inclusion in tertiary classrooms. The sub-sections present detailed discussions of each component that constitutes the participants' socio-cultural understandings of tertiary inclusion.

9.3.1 Deaf students readiness for learning

Unlike previous studies that suggested that deaf students should be able to read lips to actively participate in classroom interactions (Vermeulen, Denssen and Knoors, 2012), findings of this study indicated that deaf students need to be prepared to learn through an interpreter. The findings revealed that for inclusion to be achieved at the tertiary level, there is a need for deaf students to acknowledge their roles and play them accordingly. Being prepared and ready for the academic demands at the tertiary level is essential for students in making informed decisions about their learning. It implies that more preparation is required by the students before they enter tertiary classrooms. This must include the deaf students' understanding of how to access learning through interpreting (Fobi and Oppong 2018, Heyerick and Vermeerbergen 2012, Leeson 2012, Maroney 2016, Maroney et al., 2020, Oppong, Fobi, Adu and Acheampong, 2017). As learning is co-constructed through the collaboration of all actors (Heo, et al., 2010, Vygotsky, 2012, Zhang, et al., 2007), every actor particularly the student who is at the centre needs to put in their best effort so that their set educational goal could be accomplished. The students need to know the kind of

support required for their studies and should know how to ask for it. Even in the context when the required support is absent, deaf students could devise alternative means to access learning. For example, as indicated in the analysis, some students stated that they record lectures when their interpreters are absent so that later, they can ask for someone to help them by providing the interpretation to catch-up with their learning. Exhibiting this readiness is an essential requirement for deaf students to learn through interpreters in tertiary classrooms (Emmorey, 2004, Wang and Napier, 2013). Deaf students who have positive academic experiences and are intrinsically motivated can adapt to learning in tertiary classrooms (Conway, 2006, Leeson, 2012, Matthew, 2007). Aside from being motivated for learning, deaf students require academic skills such as being able to make decisions independently and the ability to initiate tasks that facilitate their learning (Leeson, 2012). These skills equip them to cope with the social and academic demands of learning in tertiary classrooms. A student who is self-motivated and has these skills can learn from lecturers and through interpreters when all the actors combine their expertise in tertiary classrooms (Vygotsky, 1978).

9.3.2 Lecturers engagements in interpreting in the classrooms

The findings of this study have evidenced that lecturers' engagements with interpreting in the classrooms facilitate interactions between them and the deaf students. These lecturers create interactive classrooms, share resources with students and interpreters and appreciate the roles of the interpreters and students (Bontempo, 2012, Haung and Napier, 2015, Leeson, 2012). Having an interactive classroom supports the collaborative idea of learning whereby every actor provides their best to ensure that students' learning needs are met (Marsharck et al., 2005). In such contexts, to facilitate the classroom interactions, lecturers try to understand the roles of interpreters (Bontempo, 2012, Leeson, 2012, De Meulder, Napier and Stone, 2018, Roy, 2000) by appreciating interpreters' lag times which enables interpreters to catch up with lessons and also be familiar with topics discussed in the classrooms (De Meulder, Napier and Stone, 2018, Napier, 2016, Russell, 2007). Furthermore, lecturers who engage in classroom interpreting should communicate directly with deaf

students to boost the students' confidence in the classrooms and promote their learning (Bently-Sassaman and Dawson, 2012, Pöchhacker , 2016). An interactive classroom which recognise the learning needs of each student provides the students with opportunities to actively engage with the learning resources to achieve optimal learning outcomes (Bontempo, 2012, Leeson, 2012, Napier 2016, Pöchhacker, 2016). When lecturers engage in interpreting in the classrooms, it creates confidence in the students and interpreters and supports the students to achieve their unique learning outcomes (De Meulder, Napier and Stone, 2018, Marschark et al., 2005, Napier 2016, Roy, 1999, Russell, 2007). These findings support the socio-cultural theory that stresses that positive learning outcomes could be achieved through social interactions (Cole and Engestrom, 1994, Vygotsky, 1978). Deaf students could attain optimal learning outcomes when lecturers engage with the classroom interpreting to facilitate the interactions between them and their students (Snowman, McCown and Biehler, 2012).

9.3.3 Proficient interpreters

Throughout the interviews with the participants, it became evident that the quality of interpretations rendered in these contexts greatly influences deaf students' participation in lessons (Heyerick and Vermeerbergen, 2012). The findings of this study support the idea that interpreting is not just about the ability to mediate between languages (Bontempo, 2012, Leeson, 2010, Roberts, 1992), but interpreters also need to be well vested in content knowledge of the courses they interpret, be intelligent and also have an understanding of inclusion in tertiary classrooms (Bentley-Sassaman and Dawson, 2012, De Meulder, Napier and Stone, 2018, Heyerick and Vermeerbergen, 2012, Marschark, 2005, Napier and Leeson, 2015, Napier and Rohan, 2007, Russell and McLeod, 2009).

Skilful professional interpreters who have control over both spoken and sign languages (Bontempo, 2012, Dean and Pollard, 2001, 2013, Witter-Merithew et al., 2004) could facilitate the interactions between lecturers and deaf students in the classrooms. Interpreters' versatility in adjusting between these languages boosts their confidence in their assignments and facilitates the interactions in the classroom

(Napier and Leeson, 2016). When interpreters are skilful in interpreting, their consumers develop faith in their support (de Wit and Slius, 2014), and that creates a conducive learning environment for deaf students. Deaf students who have such positive experiences with interpreters in the classrooms are often more confident and feel included in class activities (Bontempo, 2012, Leeson, 2012, Marschark et al., 2006). Aside from being skilful in interpreting, findings of this study revealed that interpreters need to be professionals who work with professional codes of ethics and have gone through the requisite training and certifications (Dean and Pollard, 2011, Oppong, Fobi and Fobi, 2016, Russell and McLeod, 2009). This supports the socio-cultural framework of learning whereby an experienced person plays a pivotal role in helping learners (Chaiklin and Lave, 1993, Cole, 1996, Cole and Engestrom, 1994, Vygotsky, 1978, 2012). The study revealed the need for interpreters to be well equipped in their profession and develop skills that could mediate inclusion in tertiary classrooms.

Interpreters also require competency-based skills, cognitive abilities and knowledge in both spoken and sign languages (Botempo, 2012, Leeson, 2010, Napier, 2011, Stone, 2007), activity-based training (Patrie, 1994), willingness to learn (Napier, 2002, 2011), ability to adapt to different classroom contexts (Marschark et al., 2004), and knowledge of course contents (Heyerick and Vermeerbergen, 2012, Napier, 2015). Knowing one's roles does not in itself help interpreters to render the quality of interpreting that is required in mediating inclusion for deaf students. Though the understanding and knowledge about the consumers enable interpreters to prepare adequately to play their integral mediating roles in tertiary classrooms (Heyerick and Vermeerbergen, 2012, Napier, 2015), interpreters need also to be equipped with the required skills and expertise that are required of them to function in these classrooms (Bontempo, 2012, Dean and Pollard, 2013).

9.3.4 Institutions' support for student' diversities

Within the tertiary context, findings of this study revealed that the actors recognise the roles of institutions in constructing their settings in such a way that embraces diverse students learning needs and provides the required supports required to help the

student achieve their full potentials (Russell and McLeod, 2009, Winston, 2004). The findings revealed that the participants expect tertiary institutions to make available both human and material resources to support positive learning experiences for deaf students that facilitates the students' educational outcomes (Doherty, 2012). By providing conducive learning environments that support inclusion of deaf students, universities provide good seats, lighting, and ventilation that supports interpreting (Herring, 2018, Napier, 2001, 2011). Such environments are also made safe for learning and support individual student's uniqueness in the classrooms (Hamilton and Tee, 2010, Hamilton and Tee, 2013, Salter et al., 2017).

Institutions could also provide interpreting support and educate the members of staff and students about inclusion to make deaf students feel welcomed and have positive deaf cultural experiences that facilitate their learning (Doherty, 2012). There must also be institutional policies that guide the recruitment and retention of interpreters (Russell, 2007, Russell and McLeod, 2009). Furthermore, for institutions to consider the learning needs of deaf students, they are required to consider in their recruitment of deaf students the admissions criteria that can help the students and also meet standard practices (Locker-McKee and Biederman, 2003, Russell and McLeod, 2009). Institutions need also to assess the needs of the students on their entry since not every student has the sign language proficiency that could enable them to learn through interpreters (Johnson and Schembri, 2007, Maroney, 2016, Marschark, 2002, Wang and Napier, 2013), so that the appropriate or alternative support could be provided for the students.

A classroom context, which aims to promote inclusion, and also to help the individual student accomplish their learning outcomes, the understandings these actors bring into the practice influence to a very large extent their practices (Salter, 2015, Vygotsky, 1978). To start with, these actors have expressed good understandings of inclusion in tertiary classrooms and have developed our understandings of the socio-cultural perceptions that they bring into the classrooms. These understandings revolve around the deaf students' readiness for learning through interpreting; lecturers' engagement with interpreting and their ability to support the students; the

proficiencies of interpreters in mediating the classroom interactions; and the institutions embracement of the diversities that each student brings to the classrooms. These set the pace for a good collaborative working environment where each key actor has an integral role in ensuring that deaf students are able to learn within this context. Every actor is expected to play their role to facilitate inclusion for deaf students in tertiary classrooms.

Having discussed the participants' socio-cultural understanding of inclusion, the next section of the discussion will focus on the demands and control options that interpreters encounter and consider as they engage in these practices in the classrooms to address research question *c* of this study.

9.4 Demand control considerations of interpreting in tertiary classrooms

Having established the participants' socio-cultural understandings of inclusion, the demands and control options that interpreters encounter provide an understanding of role of interpreting in mediating the interaction between deaf students and lecturers in the classroom. This section of the discussions presents the synthesis of findings on the demands and control option considerations (DC-S) of interpreting with literature. Since interpreting mediates the classroom interactions, an understanding of the DC-S interpreters encounter in the classroom will help to analyse the role of interpreting in mediating interactions within this context.

9.4.1 Demands in the classrooms

Tertiary classrooms with lecturers, interpreters, and deaf students (actors) of diverse understandings of inclusion present different forms of demands that interpreters will have to manage. The impact of these understandings on the interpreters transcends through the interpreters' characteristics, their interactions with the other actors in the classrooms, and the potential influences of the environment within which they work (Dean and Pollard, 2013). The findings of this study reveal different forms of demands that interpreters encounter in the classrooms that influence the quality of

services they render to mediate the classroom interactions of deaf students and their lecturers. The results of this study indicate that interpreters' inherent characteristics such as their feeling of nervousness, shyness and limited sign language vocabularies affected the way they interpreted in the classrooms. These qualities hindering the work of interpreters in the classroom are intrapersonal demands (Biggs, 2003, Dean and Pollard, 2013). The internal factors such as thoughts of interpreters, proficiency of interpreting and stage fright, affect the way interpreters can deliver the services in the classrooms (Bontempo, 2012, Leeson, 2005, 2012, Powell 2013). As it was revealed in the analysis, it is evident that interpreters who had these kinds of feelings in their assignments could not render interpretations to their expectations. The consumers of these services will also be affected since these demands on interpreters could present a lot of omissions and in effect reduce the desired interactions in the classrooms (De Meulder, Napier and Stone, 2018).

Aside from the intrapersonal demands of interpreting in the classrooms, some of the interpreters had issues with the accent of the lecturers' and deaf students' communications in the classrooms. These are classified as paralinguistic demands (Dean and Pollard, 2013). The way the lectures and deaf students articulated their narratives either too fast, too slow or the volume of their speech have a significant effect on the way interpreters interpret in the classrooms (Dean and Pollard, 2013, Herring, 2018, Napier, 2011). The problem may even be exacerbated when the actors involved in these kinds of renditions are not prompted to modify their communication strategies to help the interpreters in the classrooms. It also gets compounded when interpreters are late learners of sign language and are not fully immersed in the way deaf students communicate (Bentley-Sassaman and Dawson 2012, Moody, 2011). In a context where interpreters are less proficient, they often face these kinds of demands because of their inability to fathom the way proficient deaf signers communicate (Biggs, 2003, Dean and Pollard, 2013, Leeson, 2012, Powell, 2013).

Other demands which were evident in the study were interpersonal (Dean and Pollard, 2013). Though paralinguistic demands could be classified as interpersonal

demands, paralinguistic demands are often intended to explain how an interlocutor communicates to interpreters that affect the quality of interpreting. On the other hand, interpersonal demands are often about what an actor says or does that have an impact on interpreters (Dean and Pollard, 2013). These demands deal with the impact on interpreting as a result of what happens between deaf students, interpreters, and lecturers whilst interpreting in the classroom. The findings of this study suggest that some actors in the classrooms did not pay attention to the interpreters in the classrooms and often did their own business whilst in class. Deaf students also were reported to have interrupted interpreters with questions whenever they had a misunderstanding of concepts taught in class. Though the interpreters saw these as interuptions, deaf students in some instances were seeking for clarifications of concepts, an indication that the students were attentive and showed their autonomy and their readiness for learning in the classrooms. In the context where most of the classroom activities are presented in the "lecture mode" teaching approach, when deaf students have a questions not related clarificatons of concepts interpreted, the expectation was that they draw the attention of the lecturer and ask their question. However, the findings of this study revealed that some deaf students directly asked their interpreters questions and demanded responses from the interpreters. The findings of this study are supported by Maroney et al. (2020) who suggested that most deaf students in tertiary classrooms do not know how to use interpreting services. When deaf students do not understand the role of their interpreters and see them as teachers (Adu, 2016, Oppong et al, 2017), often it presents great demands that interpreters would need to manage. To manage these demands in the classrooms, interpreters need to understand the way their consumers process things (Bontempo, 2012, Heyerick and Vermeerbergen, 2012, Leeson, 2012, Napier 2011, Nicodemus, Swabey and Taylor, 2014, Napier, 2015), the culture of the consumers (Fobi and Oppong, 2019, Witter-Merithew and Nicodemus, 2010) and possibly try to provide some orientations before the start of an assignment.

Lastly, this study establishes that poor room lighting, haphazard seating arrangement, inadequate ventilation and long duration of lectures were the key environmental demands the interpreters encountered in the classrooms (Dean and Pollards, 2013).

Dean and Pollard (2013) explained that these demands arise from the context in which the interpreting occurs. In an tertiary classroom, the environments need to be set up in a conducive way to facilitate learning for each student and to help them achieve their educational goals (Heyerick and Vermeerbergen, 2012, Napier, 2004, 2005, 2015). When interpreters encounter these kinds of demands in the classrooms, it limits their communication flow and therefore affects the way they facilitate interactions between deaf students and lecturers in the classrooms (Antia, 2002, Hyde and Power, 2004, Stinson and Kluwin, 2003). In a classroom, where communication often breaks down because of the environment, the goal of inclusion is often affected (Bontempo, 2012). Therefore Leeson (2012) suggests the need for institutions to eradicate such demands in the classrooms to facilitate communication and learning for actors. Though the various actors have roles to play in the classrooms to facilitate inclusion for deaf students, institutions have the mandate to ensure that all the relevant indicators that support inclusion are provided, and also the various forms of demands that the environment brings about are eradicated.

Discussing demands without looking at the ways interpreters manage them in the classrooms will limit the discussion to problems without meaningful suggestions. Therefore, the next section will discuss the various control options that interpreters use as they encounter demands in the classrooms.

9.4.2 Control options employed

Control options are the resources that interpreters have at their disposal to manage the demands they encounter during their mediation of tertiary classroom interactions (Dean and Pollard, 2013). The findings of this study support research that found that when interpreters are aware of the demands they are likely to encounter in their assignments, they prepare themselves ahead with resources that will enable them to manage the demands in their assignments (Arumí Ribas and Vargas-Urpi, 2017, Dean and Pollard, 2013, Englund, Dimitrova and Tiselius, 2009, Gile, 2009, Herring, 2018). These preparations are what Dean and Pollard (2013) referred to as pre-assignment control options. From the analysis of this study, interpreters revealed that they try to solicit support on how to sign concepts that may be new to them in the

classrooms. Bontempo (2012) posited that it is relevant that interpreters possess the quality of knowing their needs and seeking support before they take up assignments. Bontempo stressed that for interpreters to be able to ask for support, they need to have a mixture of temperaments that help them to cope and endure the influence of others in their work. One other finding of the study was that interpreters try to familiarise themselves with course contents for them to improve on the quality of their interpretations. This finding is supported by the literature that suggested that when interpreters prepare for an assignment by equipping themselves with the relevant content knowledge relating to the courses, they can deliver efficient interpretations in tertiary classrooms (De Meulder, Napier and Stone, 2018, Leeson, 2012). Having content knowledge of a course boosts the confidence of interpreters and also gives them a better understanding of the issues being discussed in the classrooms so that appropriate interpretations could be rendered for the consumers (Bontempo, 2012, Leeson, 2012). Aside from the content knowledge and the support interpreters seek, they also are required to professionally work within their code of ethics (Dean and Pollard, 2011, 2013). Professionally trained interpreters are familiar with the ethos associated with their work and can explain that to their consumers (Bentley-Sassaman and Dawson, 2012, Patrie, 1994).

When class activities begin, the control options that interpreters use during this period are the assignment controls (Dean and Pollard, 2013). Findings of this study support the idea that when interpreters come from different professional backgrounds to work in tertiary classrooms, they bring diverse control options, some of which may not be professional but help them in managing the demands they encounter (Maroney et al., 2020). For example, it was evident in Chapter 6 that interpreters employed control options such as writing on a board new concepts in a lecture that may not be accessible to deaf students in the classrooms or even stop interpreting when faced with demands. Other forms of control options that were evident in the findings of the study were that interpreters prompted their speakers/signers whenever they didn't understand a concept used (Bentley-Sassaman and Dawson, 2012, De Meulder, Napier and Stone, 2018). When interpreters prompt speakers/signers for repetition of concepts, it helps to give clarity to the interpreters so that they could render

appropriate interpretations to their consumers in the classrooms. It also gives the interpreters some time to reflect quickly as the speaker/signer and prepare to reiterate whatever was said previously but missed by the interpreter. During assignments, one of the most efficient controls that were evident in this study and support the literature was when interpreters worked in teams (Bentley-Sassaman and Dawson, 2012, De Meulder, Napier and Stone, 2018). Working in teams enabled the interpreters to support each other in situations where there was disruption from other deaf students in the classrooms. Wherever the co-interpreters could deal with the issues that some deaf students encountered whilst classes were ongoing, they saved the on-task interpreters the stress of having to respond to each student in ongoing class discussions. Team interpreting also helps interpreters to support each other and gives on-task interpreters rest whenever they switch (Bentley-Sassaman and Dawson, 2012, De Meulder, Hoza, 2010, Napier and Stone, 2018, Stone, 2007).

After assignments, interpreters had meetings with their consumers to discuss ways of improving their services for their next assignment. This is what Dean and Pollard (2013) classified as post-assignment control options. These control options are often used as reflective discussions where interpreters talk about their work in the classroom and try to brainstorm on the things they did right and those that require improvement (Maroney, 2016, Maroney et al., 2020). Post assignment controls give interpreters the idea of how to approach their next assignment with confidence, whilst limiting the errors committed in their previous works. Findings of this study have revealed that in the tertiary classroom context, interpreters encounter different demands (for example, asking interpreters content related questions instead of directly them to the lecturers) that are often absent in platform, TV, health and other settings of interpreting. Due to the forms these demands take, findings of the study have revealed that interpreters also try strategies that suit them, especially considering their professional background, in rendering these services in tertiary classrooms.

This section of the discussions has revealed the demand and control option considerations that interpreters make in these contexts, and this helps to understand

what interpreters go through when they work in tertiary classrooms. The way interpreters manage the demands have also been made explicit and presents the integral mediating roles of interpreting in inclusive educational context. The next section of the discussion will focus on the nature of interactions between the participants tertiary classrooms.

9.5 Classroom mediated interactions

This section of the discussion is developed based on the interactions of participants in the tertiary classrooms. This discussion focusses on the actual classroom interactions between lecturers and deaf students mediated by interpreting vis a vis their socio-cultural understandings of inclusion and the demands and control options of interpreting in these contexts. The discussions bring out two main areas of classroom interactions, i.e., collaborative support and team interpreting.

9.5.1 Collaborative support

This section of the discussion focusses on the collaboration among the actors in the classrooms. Findings of this study support other studies that indicate that for classroom collaborations to be effective, teachers should take the lead in engaging students of diverse needs (Salter, 2015, Salter, Swanwick and Pearson, 2017), where they serve as facilitators to the learners (Calkins and Light 2008, Light and Calkins 2008). The study revealed that in classes whereby lecturers set the pace by engaging themselves in interpreting and involving deaf students in their class activities, all the other actors were automatically involved in the class interactions. Having an tertiary classroom that is interactive and has all actors playing their respective roles support learning and ultimately help students of diversified learning needs to achieve their learning goals. Leadership within these classrooms is essential since it sets the pace for meaningful classroom interactions.

9.5.2 Team interpreting

The study revealed that interpreters who worked often had more omissions that in effect did not allow them to convey the full messages that lecturers taught in class. In

situations where interpreters worked alone, they often limited the classroom interactions to themselves and the deaf students, with little or no involvement of the lecturers. Therefore, the learning goal of interacting in the classroom is not achieved. Whenever deaf students supported interpreters who worked alone, interpreting ceased, and the classroom interaction was limited to the interpreters and deaf students whilst lectures were in progress. Deaf students tend to shift focus from class discussions and dwell much on trying to resolve issues with the interpreters. These often are as a result of interpreters not working in teams. When interpreters do not work in teams, the quality of interpreting is often affected. On the other hand, in the classroom context, when deaf students took responsibility and directly asked their questions of lecturers, interaction was fostered among all the actors in the classrooms and limited the demands on interpreters in the classrooms (Heyerick and Vermeerbergen, 2012, Maroney et al., 2020). This finding also suggests that when deaf students are aware of their roles as students and play them accordingly, information flows freely to their desired destinations and learning in this context is supported (Leeson, 2012). In tertiary classrooms, Leeson stresses the need for deaf students to have skills that allow them to cope with the academic demands. Again, when deaf students actively play their roles in the classrooms, they learn to appreciate the roles of the other actors in the classrooms. For example, they learn how to study through interpreters (Leeson, 2012, Maroney 2016, Maroney et al. 2020), and also how to take turns in their interactions (Adami and Swanwick, 2019, Carty, Goswell, Leigh and Napier, 2018). When deaf students are well prepared for learning in tertiary classrooms, they often have positive academic experiences in their learning (Adu, 2016, Oppong et al., 2017). De Wit and Sluis (2014), Dean and Pollard (2013) and Turner and Harrington (2000) added that as part of the preparations deaf students need for learning in tertiary classrooms is to develop an understanding of the roles of the actors and also to actively engage in the interpreting process in the classrooms. In collaborative tertiary classrooms where all actors appreciate their role and play them accordingly, learning is often accomplished (Vygotsky, 1978).

9.6 A collaborative inclusive learning model

The way interpreting mediates interactions between deaf students and lecturers has implications for a collaborative inclusive learning model where all actors support each other to help students achieve their learning outcomes (see Figure 9-1).

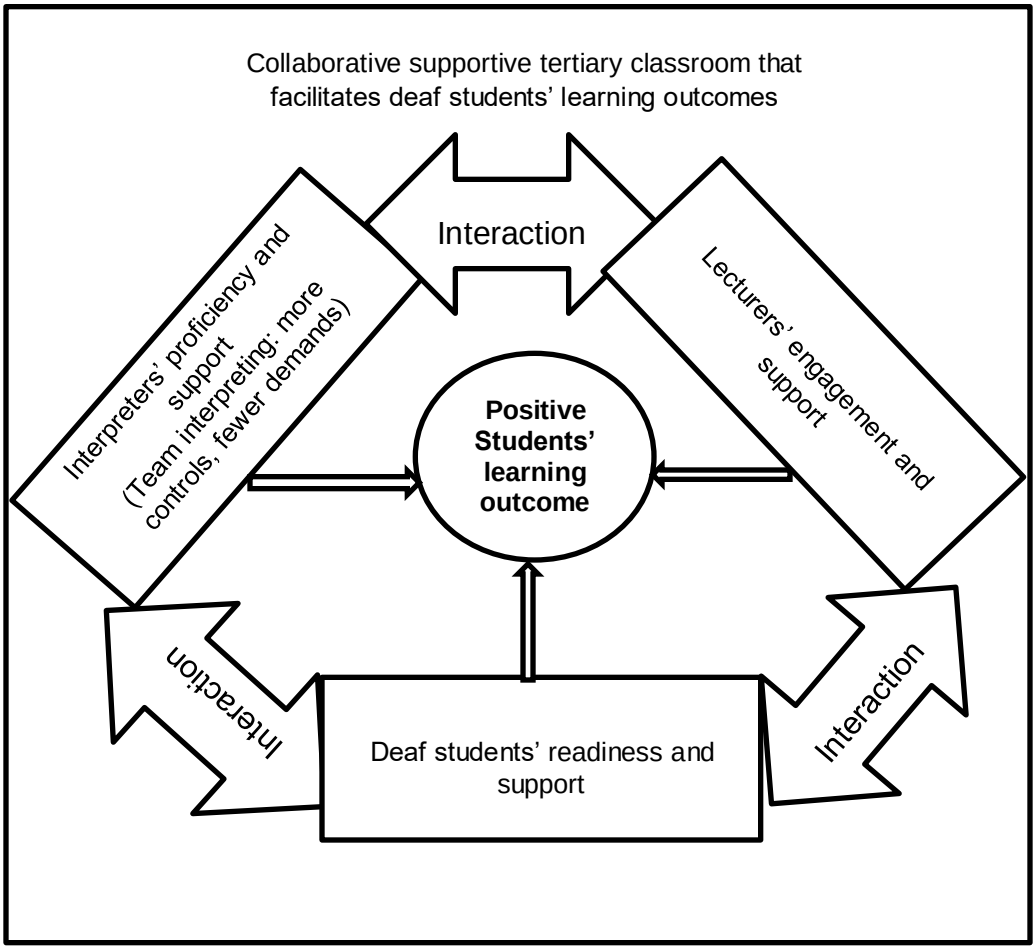


Figure 9-1 Interactive inclusion model (author's proposed model of inclusion for deaf students)

Figure 9-1 presents interaction between deaf students, lecturers and interpreters in tertiary classroom that support deaf students' learning outcomes. In this model, first, the institution needs to be set up in a way the embraces and supports deaf students' learning needs. The institutions must provide a conducive learning environment by embracing the unique learning needs of individual students and actively engage their staff and students through orientations of how deaf students learn and the complexities that emerge as a result of having them in the same classrooms as their

hearing colleagues. The institutions must also ensure they consider the students learning needs during their application and assess them to establish their unique needs so that they could provide the requisite support for the students' learning. In addition to these, institutions should also employ and retain qualified competent interpreters to interpret for the students in both academic and social settings so that the students could have a sense of belonging in these settings. This will create a conducive environment for the students' learning. Within the classrooms where the mediated interactions occur, the deaf students whose learning is under study also need to come to this context well prepared for learning through interpreting. They are expected to be proactive in their learning, know how to use interpreters by learning and understanding their roles in the classroom. The students should also understand their role as students and play them accordingly in the classrooms.

The lecturers would have to play an active role in these settings by engaging with the interpreters and deaf students. They also need to understand the students' learning needs and devise ways of helping them to participate in class activities, thereby helping the students to achieve positive learning outcomes. Interpreters who mediate the learning and teaching in these classrooms need to be proficient in interpreting, be dynamic and learn the ways of their consumers whilst they prepare to work in teams so that they encounter fewer demands in the classrooms because of the increased control options available to them through team interpreting. Interpreters need to be well-read and have at least a basic understanding of the courses they are assigned to interpret. When the actors in the classrooms come together with these understandings and work together for the common goal of helping the students achieve their unique learning outcome, then, successful inclusion for the students can be achieved in the classrooms.

Since the actors come from different backgrounds and with diverse socio-cultural understandings of inclusion, it is essential that each actor has in mind their role and collaborate with each other to create collaborative support that facilitate classroom interactions mediated by interpreters. In this, every actor supports the other when needed and this ultimately helps to sustain the interactions that lead to the students'

achievement of their learning outcomes. This reduces the demands of interpreting in this context and creates more control options to support interpreting to facilitate the interactions between the actors. The bidirectional arrows between the actors Figure 9-1 suggests the connection of the interaction between the actors and the collaborations required to sustain inclusion through interpreting. These collaborations should exist within an institution that is set up in a way that embraces and supports students' diversities and working to achieve the students' learning outcomes in the classrooms. In these collaborations, team interpreting should be central in the interactions since it mediates the process for deaf students and lecturers. Interpreters working as team will enhance the mediation and promote the triadic interactions of the context. When all these are set up, then deaf students can access positive learning outcomes in tertiary classrooms.

9.7 Methodological reflections

Throughout the review of the literature there was scarcity of studies that had considered the role of interpreting in mediating interactions between deaf students and lecturers in tertiary classrooms. The methodology adopted in this study allowed for data to be collected from surveys, one-to-one interviews and videos aimed at addressing different aspects of research questions raised in the study and ultimately responded to the overarching research question (see Table 6-1). This methodology gave each participant a voice and allowed for the documentation from the users' perspective:

1. The deaf students, lecturers, interpreters and heads of departments' socio-cultural understandings of inclusion.

2. The demands interpreters encounter in tertiary classrooms and the control options they employ to manage the demands.

3. The interactions that exist between lecturers, deaf students and interpreters in the classrooms.

To ensure that the methodology was robust, each stage of the data collection and the methods used aimed at generating data that targeted a specific research question. As a researcher and a practitioner who has associations with the Deaf community, I gave each stakeholder involved in inclusive of deaf students in tertiary classrooms, a voice by allowing them to express their views and experiences. I also used different methods to collect data from the same participants. Again, in some instances, the same methods were used to collect data from different participants to have accounts of actors involved in ensuring that interpreting mediates the interactions between deaf students and lecturers in tertiary contexts. My research questions have undergone several revisions as my study progressed because initially I had an uncertain idea of the kind of data to expect and my research questions pointed in directions that were difficult to tease out the data that could support them. Hence, the modifications of the questions began. It is out of the adaptations of the research questions that I began to get a clearer insight into the data generated and which part of it was fit for the study (see Appendix I for the revisions that the research questions went through before arriving at the final research questions).

The research process provided the participants with the opportunity to reflect on their expectations and practices regarding inclusion. It also allowed observing participants' classroom interactions as against what they say they do in tertiary classrooms. To ensure that the research process generated data that reflected the participants' perspectives, I asked them directly about their understandings and expectations of tertiary inclusion and interpreting. The participants continued to discuss their understandings concerning their expectations and practices. Interpreters were also asked to talk about the demands and control options they encounter in the classrooms. The final stage of the data was collected through videos of classroom interactions between deaf students and lecturers mediated by interpreting. This revealed the kind of activities that happen around collaborative support and team interpreting in the classrooms and the interactions which emerge out of that. The methodology used made the participants confirm their beliefs with what they do in the classrooms and helped the participants to question and review their practices.

9.8 Reflection on the overarching research questions

This study aimed at developing an understanding of how interpreters mediates the interaction between deaf students and lecturers in tertiary classrooms. I examined inclusion for deaf students through the socio-cultural learning theory (Vygotsky, 2012, 1978) and the demand and control schema (Dean and Pollard, 2013). Whereas literature abounds on what constitutes learning for deaf students, and the factors that militate against the students (Marchark et al., 2004, 2005, Salter, 2015, Wang and Napier 2013a, Wang and Napier 2013b, Meinzen-Derr et al., 2018), and also a large amount of literature on interpreting (Powell, 2013, de Wit, 2011, Leeson 2005, 2012, Bentley-Sassaman and Dawson, 2012, Kaminskienė and Kavaliauskienė, 2012, Napier 2009), there is little known about the learning of deaf students in contexts where interpreting plays an integral mediating role. By examining the two different aspects of knowledge surrounding the education of deaf students together, I tried to tease out the socio-cultural understandings surrounding the context within which these practices occur, i.e., the inclusive context. Therefore, I first examined the participants' socio-cultural understandings of tertiary inclusion to provide context for the study.

Having established the context for the study, the next research question aimed at probing the demands and control option considerations (DC-S) of interpreting as various actors of different socio-cultural understandings interact in the classrooms. This extension of the study had not been done in previous studies, so, I analysed the data using the Dean and Pollard's DC-S within the socio-cultural learning theory to bring out the issues surrounding interpreting in tertiary classroom contexts. Finally, having established the socio-cultural understandings of the participants and the associated demands encountered in the classrooms, a question on the participants' enactments of the understandings expressed helped to fully address the overarching question of how interpreting mediates the interactions between deaf students and lecturers in tertiary classrooms. Since a similar study in the literature used a discourse analysis (Roy, 1999) to examine the interactions between a deaf student, a lecturer, and an interpreter, this study did a multimodal analysis of the interactions

between deaf students and lecturers mediated by interpreting within different tertiary classroom contexts. The research questions and the methods used presented multi-level data from surveys, interviews and videos to examine what previous studies have not done. This study makes the following key contributions:

1. There is a dearth of studies examining interpreters mediating the interactions between deaf students and lecturers in tertiary classrooms in the LMIC contexts. This study is the first of its kind to investigate the interactions and bring out how deaf students, lecturers and interpreters work together (or do not work together) to facilitate deaf students learning outcomes in tertiary classrooms using different methods including a multimodal analysis of the classroom interactions. A methodological contribution through the robust processes involved in data collection, analysis and interpretation enabled the examinations of participants' socio-cultural understandings of inclusion and their enactment of their practices in tertiary classrooms. The iterative methodological processes gave each actor in tertiary classrooms a voice to explain their understandings of inclusion, expectations of interpreting and the demands and control options of interpreting. These were further examined through the multimodal analysis of the classroom videos of the interactions. The videos allowed for a post-classroom observation analysis of the interactions through ELAN. Furthermore, the study presents a multimodal analysis of classroom interactions between deaf students and lecturers mediated by interpreters. This allowed for the analysis of participants interactions, collaborative support, and interpreters' lag times and team interpreting. The study brings out at a given time in the classrooms, what lecturers, deaf students and interpreters do to facilitate classroom interactions and learning. This highlights the collaborative support that is exhibited in the classrooms to facilitate the interactions between deaf students, lecturers and interpreters. The study also brings out the demands and control options of interpreting in tertiary classrooms from interpreters' perspectives and from videos of the classroom interactions. The study reveals that team interpreting within this context reduces the demands of the setting by providing more

control options. The study presents a better understanding of the interactions between deaf students, lecturers and interpreters through multimodal analysis as compared with previous studies that used discourse analysis (Roy, 1999).

2. The second contribution of this study is that it brings together the ideas from both the Vygotskian (1978) socio-cultural learning theory which has been used widely to explain young children's learning and Dean and Pollard's (2013) DC-S which has been less often used in the tertiary classroom context. The socio-cultural theory had not been used to examine the role of interpreting in mediating tertiary classroom interactions. The DC-S has also not been used to examine the mediation role of interpreting in tertiary classrooms. In this study, the idea of mediation of the socio-cultural theory was extended to cover interpreting as a mediator of tertiary classroom interactions and combined with the DC-S in the tertiary context. Through this process, learning in tertiary classrooms has been defined as a co-constructive activity between deaf students and all the major actors of these classrooms working together to help the students meet their unique needs and achieve their ultimate educational outcomes.
3. This study also contributes to the existing body of knowledge by bringing out the participants' socio-cultural understanding of inclusion which previous studies have not done in the LMIC context. From the existing literature, the understanding of inclusion was often based on the expectations of key stakeholders. In this study, in addition to the stakeholders' understandings of inclusion based on their expectations, is their understandings based on their practices within the inclusive context. This provides a deeper understanding and a better way of describing inclusion at the tertiary level for deaf students. It highlights the key contributions of each actor in ensuring that available resources and expertise are utilised to facilitate the students learning in these contexts.
4. The study makes theoretical contributions by proposing a model for the inclusion of deaf students in the classroom. This model proposes that though inclusion is dynamic, at a given time every actor who has a role to play must

accept and play their roles whilst they collaborate with other actors to ensure that the unique learning needs of each student are addressed using all available resources and expertise. The model emphasises the need for lecturers and deaf students to engage directly with each other in the classrooms.

This is how the overarching research question has been addressed in the study.

9.9 Summary

In this chapter, I discussed and addressed the overarching research question by bringing together the data from surveys, interviews and videos of participants' classroom interactions as presented in Chapters 8, 7 and 8. Throughout these discussions, I synthesised the main findings with the literature and pointed out how each research question has been addressed. I also make methodological and research question reflections to bring out the key contributions of this study. In the next chapters, I will present the conclusion of the study by stating the summary of the entire study, contributions, implications, and recommendations of the study.

Chapter 10

Conclusion

10.1 Introduction

This study has set out to provide deeper understandings of how interpreters mediate the interactions between deaf students and lecturers in tertiary classrooms in order to create awareness, improve tertiary education and the learning outcomes for deaf students. 10.2 provides the synopsis of the study by describing the content of each chapter in the study. 10.3 describes the limitations and in section 10.4, I provide the research implications and recommendations. 10.5 gives the final reflections of the study.

10.2 Summary of study

In this study, I have investigated the role of interpreters in mediating the interactions between deaf students and lecturers in tertiary institutions in Ghana. In Chapter 1, I set out the rationale and research questions by providing the background and my motivation for this study. In Chapter 2, I describe the context of the study by explaining the Ghanaian tertiary education for deaf students, how it has developed over time and the integral role of interpreters in mediating interactions for deaf students and lecturers in this context. The chapter explains the issues within this context and justifies the need for this study. Chapter 3 provides a review of literature on the understanding role of interpreting in the inclusion of deaf students in tertiary classrooms. Chapter 4 highlights the nature of the interactions between deaf students, lecturers and interpreters in the classrooms. Chapter 5 presents the methodology of the study.

In Chapter 6, I analysed data of participants' socio-cultural understandings of inclusion and interpreting. This chapter provided the context for understanding the participants' background and socio-cultural understandings of inclusion and interpreting which helped to provide context for the study. Chapters 7 and 8 present the analyses of the demands and control options of interpreting in the classroom and

the nature of interactions that exist between deaf students, lecturers and interpreters. Chapter 9 provided discussions of the analysis chapters and reflected on the methodology and the overarching research question of the study. Chapter 10 concludes the study by providing the general overview of the study, research implications and contributions made to literature, recommendations, limitations and the final reflections of the study.

The overarching research question of the study aimed at examining how interpreters mediate the interactions between deaf students and lecturers in tertiary classrooms. Three sub-questions were developed to support in responding to the overarching question. The first question sought the understanding of participants regarding the inclusion of deaf students in tertiary classrooms and the expectations of deaf students on interpreting and their readiness for learning through interpreting. The analysis and discussion around this question suggest that the participants in the study's understandings of inclusion are based on their expectations and practices in this context. This indicates the roles of deaf students, lecturers, interpreters and heads of departments of tertiary institutions and how best they can collaborate to ensure deaf students achieve positive learning outcomes. The discussion reveals the need for deaf students to be academically ready for tertiary education and know how to learn through interpreters in this context. The lecturers are also encouraged to engage with the sign language users in the classrooms by supporting interpreting and interacting directly with the deaf students through their interpreters. This will help the students to be involved in classroom activities and support their learning outcomes. Interpreters need to be professionally trained and proficient in mediating the interactions in the classrooms. They can achieve this by developing their knowledge and skills of interpreting and learn the course contents to support the deaf students' learning. Finally, tertiary institutions have the ultimate task of ensuring that the learning needs of deaf students are catered for by providing the requisite support (human and material resources) to fully include the deaf students in all facets of their academic and social lives in the universities.

Research sub-question two aimed at investigating the demand and control option considerations that interpreters make as they encounter various actors of tertiary classrooms with different socio-cultural backgrounds whilst interpreting for deaf students and lecturers. It is revealed in the study that when interpreters are well prepared and have various forms of control options, they will be able to manage the demands of interpreting in tertiary classrooms. What research sub-questions one and two did was to present the participants' views about the inclusion and demand and control option considerations. In research sub-question three the goal was to find out the nature of interactions between the deaf students, lecturers and interpreters through video recordings. This provided a clearer picture of the practices of the participants to confirm what they had already indicated in the interviews and survey questionnaires. Through this question, it became evident that when there is collaborations between deaf students, lecturers and interpreters in tertiary classrooms, then demands of interpreting will be reduced since more control options are made available to the interpreters. It supports the mediation process through interpreting and thereby the interactions between deaf students and their lecturers become positive and also facilitate positive learning outcomes for the students.

Therefore, for interpreters to mediate the interactions between deaf students and lecturers in tertiary classrooms, it required the concerted efforts of every actor involved and interpreters should work as teams in all cases and contexts within the classrooms. This will improve the interactions and ultimately support the positive learning outcomes of deaf students.

10.3 Limitations

Though the survey data was gathered from deaf students of most tertiary institutions across Ghana, the one-to-one interviews and the video data were collected from a single tertiary institution. I think that the study could have been better enriched if the interviews and videos were extended to all the tertiary institutions.

Furthermore, I think this study would have been more comprehensive if the interviews had considered the preparation deaf students receive before they are admitted to learn through interpreting in tertiary classrooms.

10.4 Research implications and recommendations

As argued throughout this study, for deaf students to achieve their learning outcomes in tertiary classrooms, there is the need for collaborations between all the actors of these contexts to utilise their expertise and available resources. This study has implications for deaf students (sign language users), lecturers and interpreters involved in the inclusion in tertiary classrooms, institutions that practice inclusion for deaf students, policymakers and researchers in the following ways:

1. Deaf students: this study has implications for deaf students because the study raises the awareness of the readiness required for the students to learn through interpreting in tertiary classrooms. This means that more efforts need to go into the language and academic preparations of the students to facilitate their interactions with lecturers through interpreting to achieve their learning outcomes. Furthermore, the study demonstrate the need that deaf students be made ready to learn through interpreting since the study showed that some of the students did not know how to use the service and had no experience using interpreters before arriving at the tertiary institution. This will help the students know how to engage with both the lecturers and interpreters in a way that will not interfere with interpreting and ultimately the classroom interactions that lead to learning.
2. Lecturers: Since I found that lecturers who engage actively in classroom interpreting foster the interactions between them and the deaf students, I recommend that lecturers develop a key interest in all the students' unique learning needs and engage actively in the processes surrounding the students' learning and use the available resources and expertise in the classrooms. There is also the need for lecturers to work closely with deaf students and interpreters to achieve their shared goals in the classroom.

3. Interpreters: Interpreters who work in tertiary classrooms need to undergo professional training and develop an understanding of the way deaf students learn. Again, they should work as team so that they will support each other in the classrooms and limit the omissions that are likely to emerge when they work alone. Interpreters who work as team will have more control options to manage the demands of interpreting in these contexts and facilitate the classroom interactions between the deaf students and the lecturers. They should also be prepared and proficient in terms of their signing skills, content knowledge, team interpreting skills and develop collaborative working skills that foster deaf students' learning in the inclusive contexts. There also needs to be educational opportunities for interpreters.
4. Tertiary institutions: Tertiary institutions need to develop an understanding of the diversities of students and make sure that each student is provided with the right supports and logistics. First, institutions need to assess each student to know whether they are suitable for learning through interpreting. This could help avoid the misconceptions that all deaf students are the same and use sign language; therefore, the misconceptions that the provision of interpreting removes their communication barriers and thereby facilitates the learning for all deaf students tertiary classrooms can be minimised. Institutions also need to have explicit policies on the inclusion of deaf students, i.e., policies that consider the recruitment and maintenance of interpreters. Again, the policies should cover the orientations and training given to students and staff about inclusion, and the understanding that students come from diverse backgrounds and have unique learning needs. Institutions need policies that support the hiring and retention of interpreters, such as the provision of teams when the lecture is longer than one hour. When institutions are set up this way, it will develop the understandings of staff and students on inclusions of deaf students and the roles required of each actor in ensuring that the classroom interactions are facilitated through interpreting. Lastly, tertiary institutions should develop professional interpreter education programmes that trains

interpreters to develop professional code of conduct and certify them to practice.

5. Policymakers: For effective inclusion of deaf students at all levels of education, there is a need for policymakers at both national and institutional levles to ensure that well-structured detailed policies that have the inputs of all stakeholders are put in place to guide the practice. Again, there should be measures of ensuring that there is no gap between the policies and its implementations, therefore, policymakers at the national and institutional levels should collaborate in the policy enactment and implementations so that when each stakeholder is involved in the structuring of the policies, they will see the need to support its implementations. This could be achieved if the right people are well-resourced to play their roles within these contexts.
6. This study has implication for theoretical development of inclusion for deaf students in tertiary classrooms. Therefore, further research is required into mediated learning and inclusion of deaf students in classrooms of LMIC.

10.5 Final reflection

My background as a teacher of the deaf and an interpreter has influenced greatly the way I conceptualised this study at the initial stage. Having in mind the challenges deaf students have in their learning and the many factors that contribute to this process, I was keen in knowing how these factors influence the academic achievements of the students. However, without knowing where to start and the process involved finding answers to questions that were ambiguous; my supervisors plus the knowledge gathered from the literature, made me decided to reflect on my practices and restructure my questions to target specific responses. As an interpreter and teacher. I decided to examine interpreting in tertiary institutions in Ghana. This raised further question of what about interpreting within these contexts that were worth investigating. After three years of critical discussions with my supervisors and my engagements in the training on a PhD, I have now come to the realisation of what I wanted to study. Researching about the interactions between deaf students and lecturers mediated by interpreting in tertiary classrooms has given me a deeper

understanding of the socio-cultural contexts and nexus of the activities that work to set up successful inclusion for deaf students at all levels of education. To begin, I have come to the realisation that inclusion and learning for deaf students cannot be defined well enough without considering all the actors and resources surrounding them. Each actor's socio-cultural understanding and background is important. Their interactions with others when they come together is also key and finally how they can understand each other and work together to achieve a common goal is all that is required to set up successful interactions in tertiary classrooms.

I have also come to realise that research is an iterative process that requires mental fortitude and zeal to complete. Though it could be challenging and sometimes frustrating when one perseveres there is going to be a light at the end of the tunnel. Reflecting on my research expertise before this study, I can now say that I have seen tremendous improvement in my questioning, listening, critiquing and critical writing abilities that are all key requirements of independent studies. I think there is no point in giving up. With perseverance, one is able to win if only they decide to. My goal was to develop myself into an independent researcher and I think these three years of rigorous processes have made me one. Giving what this study has been able to bring up and the contributions that it makes to knowledge, I think the thesis provides the platform for developing a better understanding of the role of interpreting in the inclusion of deaf students in tertiary classrooms. This study advocates for the need for collaborative support between the actors of these classrooms so that deaf students could achieve positive learning outcomes.

Using mixed methods in this study allowed for a thorough examinations of the research questions and provided data that reflects the views of all the participants. This methodology allowed for a probe of the participants views through the multimodal analysis of the video interaction data of the classrooms to provide an indept understanding of the nature or interactions between deaf students, lecturers and interpreters in inclusive tertiary classrooms. Future researcher could employ this mothology to examine similar issues in other tertiary classrooms in Ghana and beyond. Since this is one of the few studies that examines the roles of interpreting in

the inclusion of deaf students in tertiary classrooms, it makes a significant contribution to deaf education and interpreting in both the Global South and North. I hope that this study informs further reseach, policy and practice of inclusion for deaf students at various levels of education across the world.

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Appendixes

Appendix A Ethics approval

The Secretariat
University of Leeds
Leeds, LS2 9JT
Tel: 0113 343 4873
Email: ResearchEthics@leeds.ac.uk

UNIVERSITY OF LEEDS

Daniel Fobi

School of Education

University of Leeds

Leeds, LS2 9JT

ESSL, Environment and LUBS (AREA) Faculty Research Ethics Committee

University of Leeds

26 April 2021

Dear Daniel

Title of study:	**Sign language interpreting at a tertiary institution in Ghana**
Ethics reference:	**AREA 17-189**

I am pleased to inform you that the above research application has been reviewed by the ESSL, Environment and LUBS (AREA) Faculty Research Ethics Committee and following receipt of your response to the Committee's initial comments, I can confirm a favourable ethical opinion as of the date of this letter. The following documentation was considered:

Document	Version	Date
AREA 17-189 daniel_fobi_ethical_review_form.doc	2	22/08/18
AREA 17-189 Provisional questionnaire and interview questions.docx	1	23/07/18
AREA 17-189 final Information and Consent Forms.docx	1	23/07/18
AREA 17-189 RAS letter of support_D Fobi.pdf	1	23/07/18
AREA 17-189 Daniel Fobi Fieldwork Assessment Form MED risk V5 Oct - 17- ESSL.doc	1	23/07/18

Please notify the committee if you intend to make any amendments to the information in your ethics application as submitted at date of this approval as all changes must receive ethical approval prior to implementation. The amendment form is available at http://ris.leeds.ac.uk/EthicsAmendment.

Please note: You are expected to keep a record of all your approved documentation and other documents relating to the study, including any risk assessments. This should be kept in your study file, which should be readily available for audit purposes. You will be given a two week notice period if your project is to be audited. There is a checklist listing examples of documents to be kept which is available at http://ris.leeds.ac.uk/EthicsAudits.

We welcome feedback on your experience of the ethical review process and suggestions for improvement. Please email any comments to ResearchEthics@leeds.ac.uk.

Yours sincerely

Jennifer Blaikie

Senior Research Ethics Administrator, the Secretariat

On behalf of Dr Kahryn Hughes, Chair, AREA Faculty Research Ethics Committee

CC: Student’s supervisor(s)

Appendix B Light touch Ethics Approval

The Secretariat
University of Leeds
Leeds, LS2 9JT Tel: 0113 343 4873
Email: ResearchEthics@leeds.ac.uk

UNIVERSITY OF LEEDS

Daniel Fobi

School of Education

University of Leeds

Leeds, LS2 9JT

ESSL, Environment and LUBS (AREA) Faculty Research Ethics Committee

University of Leeds

26 April 2021

Dear Daniel,

Title of study: **A pilot study on sign language interpreting in a tertiary institution in UK**

Ethics reference: **LTEDUC-095**

I am pleased to inform you that the above application for light touch ethical review has been reviewed by a representative of the ESSL, Environment and LUBS (AREA) Faculty Research Ethics Committee and I can confirm a favourable ethical opinion as of the date of this letter. The following documentation was considered:

Document	Version	Date

LTEDUC-095 LightTouchEthicsForm, Daniel Fobi (200802593)	1	09/01/2018

Please notify the committee if you intend to make any amendments to the original research as submitted at date of this approval, including changes to recruitment methodology. All changes must receive ethical approval prior to implementation. The amendment form is available at http://ris.leeds.ac.uk/EthicsAmendment.

Please note: You are expected to keep a record of all your approved documentation, as well as other documents relating to the study. You will be given a two week notice period if your project is to be audited, there is a checklist listing examples of documents to be kept which is available at http://ris.leeds.ac.uk/EthicsAudits.

We welcome feedback on your experience of the ethical review process and suggestions for improvement. Please email any comments to ResearchEthics@leeds.ac.uk.

Yours sincerely

Jennifer Blaikie

Senior Research Ethics Administrator, the Secretariat

On behalf of Dr Kahryn Hughes, Chair, AREA Faculty Research Ethics Committee

CC: Professor Ruth Swanwick and Dr Jackie Salter

Appendix C introductory letter by supervisors

School of Education
Hillary Place
University of Leeds
Leeds LS2 9JT
T +44 (0) 113 343 4535
F +44 (0) 113 343 4541

UNIVERSITY OF LEEDS

16th March 2018

Dear Sir,

APPLICATION TO CONDUCT A STUDY ON SIGN LANGUAGE INTERPRETING AT UEW

I would like to seek permission for Daniel Fobi, who is completing his doctoral studies at the University of Leeds, School of Education, to conduct research on sign language interpreting in your institution. The research is part of project that he is conducting as part of the fulfilment of the degree requirements for the award of a PhD in Deaf Education at the University of Leeds, UK.

The aim of his study is to examine issues of sign language interpreting at the tertiary level by analysing how the following influence the best practices of interpreting for Deaf or Hard of Hearing (deaf F) students: 1) Lecturers' role in teaching deaf students through interpreters, 2) The proficiency of sign language interpreters, 3) deaf students' preparedness for educational interpreting, and 4) The conduciveness of the university setting for sign language interpreting.

For this work he will ask to have access to **deaf students, sign language interpreters, lecturers who teach deaf students** and **heads who have deaf students in their departments**. He will **observe** sign language interpreted lectures, conduct **interviews** with the participants and also give some participants **questionnaires** to respond to. Participants will be given information sheets about the study and will be asked to sign consent forms should they agree to participate in the study.

He also plans to conduct an analysis of the academic achievement of deaf students. He will therefore also ask for access to **academic transcripts of deaf students** and the **admission requirements** for admitting deaf students into UEW.

I hope that you are able in principle to support his project and I know that Daniel would be happy to discuss this with you in further detail. He can be contacted at: eddfo@leeds.ac.uk.

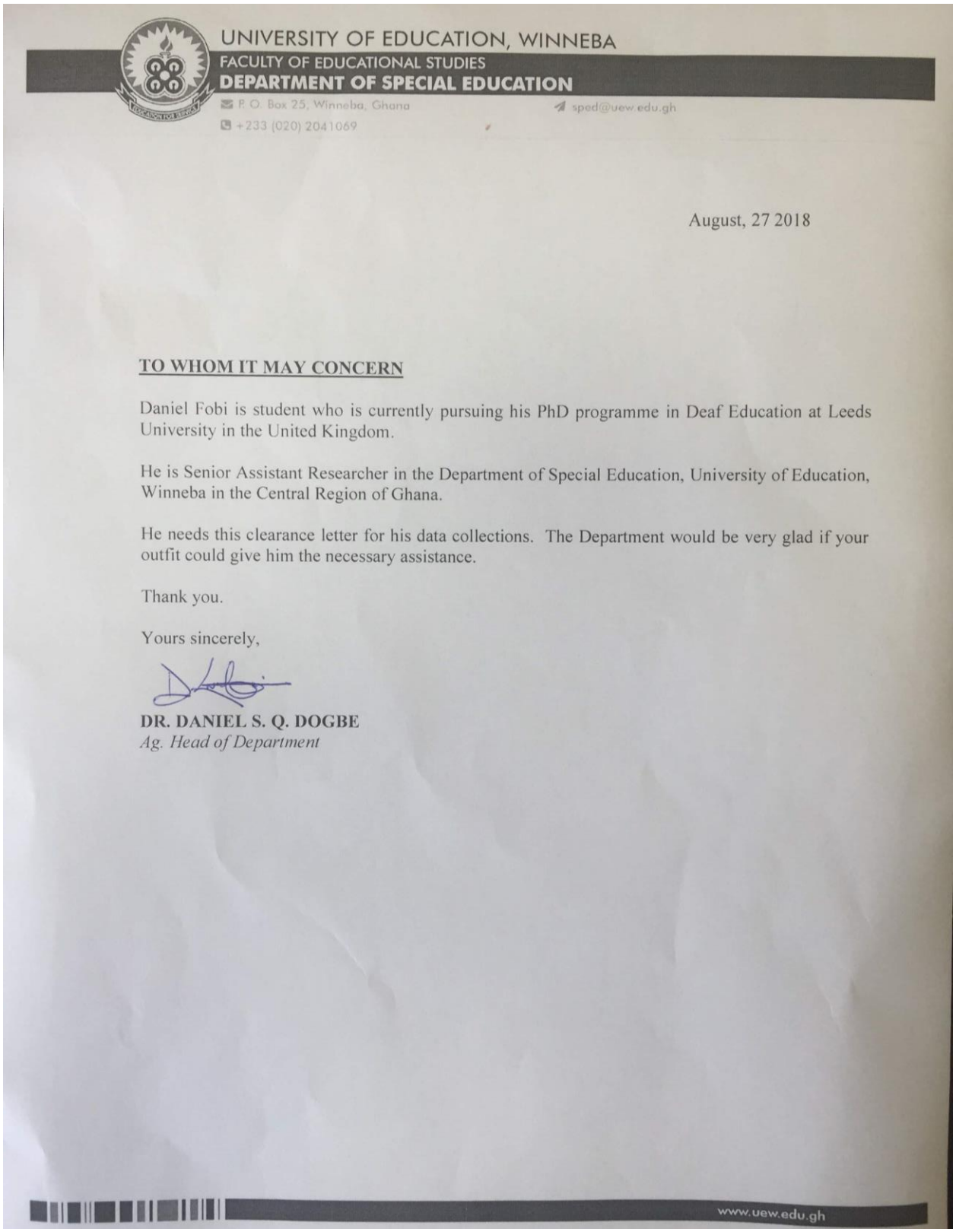
Yours sincerely,

Ruth Swanwick

Ruth A Swanwick PhD, MEd, PG Dip/ToD, PGCE, BA
Professor of Deaf Education
Director of Research and Innovation
School of Education

University of Leeds

Appendix D UEW approval and introductory letter



UNIVERSITY OF EDUCATION, WINNEBA
FACULTY OF EDUCATIONAL STUDIES
DEPARTMENT OF SPECIAL EDUCATION
P. O. Box 25, Winneba, Ghana
sped@uew.edu.gh
+233 (020) 2041069

August, 27 2018

TO WHOM IT MAY CONCERN

Daniel Fobi is student who is currently pursuing his PhD programme in Deaf Education at Leeds University in the United Kingdom.

He is Senior Assistant Researcher in the Department of Special Education, University of Education, Winneba in the Central Region of Ghana.

He needs this clearance letter for his data collections. The Department would be very glad if your outfit could give him the necessary assistance.

Thank you.

Yours sincerely,

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

Appendix E Participants information sheet and consent forms

UNIVERSITY OF LEEDS

Lecturers' Information Sheet

Sign language interpreting in a tertiary institution in Ghana

General information
You are invited to participate in a research project. This study is being carried out at the University of Leeds, UK for the award of a Ph.D. It is crucial to know, and understand why this project is being conducted, and what will be required of you before you decide to take part or not. Please carefully read the following information and discuss it with others if you wish. Please if there is anything unclear to you, or would need further information on, kindly ask. Take time to decide whether or not you wish to take part.

Who is the researcher?
Daniel Fobi is a PhD researcher in Deaf education at the School of Education, University of Leeds, UK currently conducting research into *sign language interpreting at a tertiary institution in Ghana*. The researcher before his PhD studies had worked as a sign language interpreter and a sign language tutor in Ghana.

What is the project's purpose?
There is a dearth of research on sign language interpreting at tertiary educational settings in Ghana. Although inclusive education is being practiced at UEW where Deaf and hard of hearing (deaf) students access their education through interpreters, little is known about the role of lecturers (source), interpreters (mediators), deaf students (consumers) and the setting. This study aims at examining how interpreting mediates learning and teaching in this context.

Why have I been chosen?
You have been chosen to be involved in this study because you are a lecturer who has taught deaf students through sign language interpreters for at least one academic year at the University of Education, Winneba (UEW).

Do I have to take part?
You may either decide to participate or not. In case you chose to be involved, you will be given this information form to keep. Also, you will be given a consent form to sign. You can withdraw from the study within 2 weeks of signing the consent form without given any reason. Your data will be destroyed and will not be included in the study. Any notification of withdrawal 2 weeks after signing the consent form will not be considered because data by that time would have been analysed and used in the study.

What will being part of the study involve?

You will be interviewed between 30 to 45 minutes about the role you play to promote best practices in interpreting for your deaf students when you teach them through interpreters. Also, you will be observed and video recorded for 1 hour in your lecture which involves sign language interpretation. The essence of videoing you is not to judge the quality of your work. It is to analyse the interactions that exist between you, deaf students and interpreters in promoting learning and teaching in the classroom. The analysis will be used for research purposes and no information about you will be revealed in the research report.

Will there be any disadvantages?
There are no anticipated risk or disadvantages of taking part in this study.

What are the possible benefits of taking part?
There are no material benefits for participation. It is believed that this study will provide participants with the opportunity to:

- Engage in current research relevant to their everyday practices
- Contribute to the body of knowledge which may help inform future working practices for deaf students, lecturers, and interpreters in facilitating learning and teaching at tertiary institutions.

How will the content of the observation and interviews be recorded?
The content of the observation will be video recorded using a camcorder in your presence at your lecture which is mediated by sign language interpreting. The interview will be audio recorded and your responses will be transcribed verbatim. Your name will be pseudonymised and your identity will be anonymised. All data from you will be used for research purpose. None of your data will be used to judge the quality of your work. In case you do not want to be video recorded by still want to participate in the study, I will arrange an alternative form of collecting your data. This will include having a checklist of what I want to observe from you in a lecture and checking them during the observation.

What happens if the research study stops earlier than expected?
If it is necessary for the study to end earlier than expected, reasons for that decision will be provided to you.

Will my taking part in this project be kept confidential?
Any contributions made during the interviews and observation will be kept strictly confidential. You will not be identified in any reports or publications because it is only the interactions between you and the researcher that will be analysed.

What will happen to the results of the research project?
Results of this study will be used to support my PhD. Also, results of the study will be published in referenced peer reviewed journals and open access websites.

Contact for further information
Should you require any further information or would like to discuss the project in more detail please do not hesitate to contact me

Daniel Fobi,

School of Education
Telephone +233(0)277143230 (call or WhatsApp)/ +44(0)7425363041
eddfo@leeds.ac.uk

Prof. Ruth Swanwick
School of Education
+44(0)113 343 4582
r.a.swanwick@education.leeds.ac.uk

Dr. Jackie Salter
School of Education
+44(0)113 343 4601
j.m.salter@leeds.ac.uk

Many thanks for taking the time to read this information and for considering taking part.

Consent form for lecturers

Consent form for lectures in a study entitled: *Sign language interpreting in a tertiary institution in Ghana*

Please write your initials next to the statements you agree with

I confirm that I have read and understood the information sheet which explains the above study and I have had the opportunity ask questions about the research.

I understand that my participation is not compulsory, which I can withdraw at any time without giving any reasons.

I understand that any personal information will be anonymised/pseudonymised in research.

I give permission for the interview to be audio-recorded

I give permission for me to video recorded in a lecture

I understand that data collected from both the interviews and observations will be kept strictly confidential.

I agree to inform the lead researcher should my contact details change.

Name of participant

Participant's signature

Participant's email

Date

Name of lead researcher

Signature

Date*

*To be signed and dated in the presence of the participant.

Interpreter s' Information Sheet

Sign language interpreting in a tertiary institution in Ghana

General information
You are invited to participate in a research project. This study is being carried out at the University of Leeds, UK for the award of a PhD. It is crucial to know, and understand why this project is being conducted, and what will be required of you before you decide to take part or not. Please carefully read the following information and discuss it with others if you wish. Please if there is anything unclear to you, or would need further information on, kindly ask. Take time to decide whether or not you wish to take part.

Who is the researcher?
Daniel Fobi is a PhD researcher in Deaf education at the School of Education, University of Leeds, UK currently conducting research into *sign language interpreting at a tertiary institution in Ghana*. The researcher before his PhD studies had worked as a sign language interpreter and a sign language tutor in Ghana.

What is the project's purpose?
There is a dearth of research on sign language interpreting at tertiary educational settings in Ghana. Although inclusive education is being practiced at UEW where Deaf and hard of hearing (deaf) students access their education through interpreters, little is known about the role of lecturers (source), interpreters (mediators), deaf students (consumers) and the setting. This study aims at examining how interpreting mediates learning and teaching in this context.

Why have I been chosen?
You have been chosen to be a participant of this study because you are an interpreter who has interpreted for deaf students for at least an academic year at the University of Education, Winneba (UEW).

Do I have to take part?

You may either decide to participate or not. In case you chose to be involved, you will be given this information form to keep. Also, you will be given a consent form to sign. You can withdraw from the study within 2 weeks of signing the consent form without given any reason. Your data will be destroyed and will not be included in the study. Any notification of withdrawal 2 weeks after signing the consent form will not be considered because data by that time would have been analysed and used in the study.

What will being part of the study involve?
You will be interviewed between 30 to 45 minutes on the proficiencies interpreters need in order to serve their consumers at the university level. Also, you will be observed and video recorded for 1 hour in a lecture which involves sign language interpretation. The essence of videoing you is not to judge the quality of your work. It is to analyse the interactions that exist between you, deaf students and lecturers in promoting learning and teaching in the classroom. The analysis will be used for research purposes. No information about you will be revealed in the research report.

Will there be any disadvantages?
There are no anticipated risk or disadvantages of taking part in this study.

What are the possible benefits of taking part?
There are no material benefits for participation. It is believed that this study will provide participants with the opportunity to:

- Engage in current research relevant to their everyday practices
- Contribute to the body of knowledge which may help inform future working practices for deaf students, lecturers, and interpreters at tertiary educational settings.

How will the content of the observation and interviews be recorded?
The content of the observation will be video recorded using a camcorder in your presence at a lecture which is being mediated by sign language interpreting. The interview will be audio recorded and your responses will be transcribed verbatim. Your name will be pseudonymised and your identity will be anonymised. All data from you will be used for research purpose. None of your data will be used to judge the quality of your work. In case you do not want to be video recorded by still want to participate in the study, I will arrange an alternative form of collecting your data. This will include having a checklist of what I want to observe from you in a lecture and checking them during the observation.

What happens if the research study stops earlier than expected?
If it is necessary for the study to end earlier than expected, reasons for that decision will be provided to you.

Will my taking part in this project be kept confidential?
Any contributions made during the interviews and observation will be kept strictly confidential. You will not be identified in any reports or publications because it is only the interactions between you and the researcher that will be analysed.

What will happen to the results of the research project?
Results of this study will be used to support my PhD. Also, results of the study will be published in referenced peer reviewed journals and open access websites.

Contact for further information
Should you require any further information or would like to discuss the project in more detail please do not hesitate to contact me

Daniel Fobi,
School of Education
University of Leeds
Telephone +233(0)277143230 (call or WhatsApp)/ +44(0)7425363041
eddfo@leeds.ac.uk

Prof. Ruth Swanwick
School of Education
+44(0)113 343 4582
r.a.swanwick@education.leeds.ac.uk

Dr. Jackie Salter
School of Education
+44(0)113 343 4601
j.m.salter@leeds.ac.uk

Many thanks for taking the time to read this information and for considering taking part.

Consent form for interpreters

Consent form for interpreters in a study entitled: *Sign language interpreting in a tertiary institution in Ghana*

	Please write your initials next to the statements you agree with
I confirm that I have read and understood the information sheet which explains the above study and I have had the opportunity ask questions about the research.	
I understand that my participation is not compulsory, which I can withdraw at any time without giving any reasons.	
I understand that any personal information will be anonymised/pseudonymised in research.	
I give permission for the interview to be audio-recorded	
I give permission for me to video recorded in a lecture	
I understand that data collected from both the interviews and observations will be kept strictly confidential.	
I agree to inform the lead researcher should my contact details change.	

Name of participant	
Participant's signature	
Participant's email	
Date	
Name of lead researcher	

Signature	
Date*	

*To be signed and dated in the presence of the participant.

Deaf and hard of hearing (deaf) students' Information Sheet

Sign language interpreting in a tertiary institution in Ghana

General information
You are invited to participate in a research project. This study is being carried out at the University of Leeds, UK for the award of a Ph.D. It is crucial to know, and understand why this project is being conducted, and what you will be required of you to do before you decide to take part or not. Please carefully read the following information and discuss it with others if you wish. Please if there is anything unclear to you, or would need further information on, kindly ask. Take time to decide whether or not you wish to take part.

Who is the researcher?
Daniel Fobi is a PhD researcher in Deaf education at the School of Education, University of Leeds, UK currently conducting research into *sign language interpreting at a tertiary institution in Ghana*. The researcher before his PhD studies had worked as a sign language interpreter and a sign language tutor in Ghana.

What is the project's purpose?
There is a dearth of research on sign language interpreting at tertiary educational settings in Ghana. Although inclusive education is being practiced at UEW where Deaf and hard of hearing (deaf) access their education through interpreters, little is known about the role of lecturers (source), interpreters (mediators), deaf students (consumers) and the setting. This study aims at examining how interpreting mediates learning and teaching in this context.

Why have I been chosen?
You have been chosen to be a participant of this study because you are a deaf student who has been in the university for one academic year and access learning through sign language interpreting

Do I have to take part?
You may either decide to participate or not. In case you chose to be involved, you will be given this information form to keep. Also, you will be given a consent from to sign. You can withdraw from the study within 2 weeks of signing the consent form without given any reason. Your data will be destroyed and will not be included in the study. Any notification of withdrawal 2 weeks after signing the consent form will not be considered because data at the point would have been analysed and used in the study.

What will being part of the study involve?

You will be interviewed for between 30 to 45 minutes about your preparedness for educational interpreting at the tertiary level. Also, you will be observed and video recorded for 1 hour in a lecture which involves sign language interpretation. The essence of videoing you is not to judge you. It is to analyse the interactions that exist between you, interpreters, and lecturers in promoting learning and teaching in the classroom. The analysis will be used for research purposes. No information about you will be revealed in the research report.

Will there be any disadvantages?

There are no anticipated risk or disadvantages of taking part in this study.

What are the possible benefits of taking part?

There are no material benefits for participation. It is believed that this study will provide participants with the opportunity to:

- Engage in current research relevant to their everyday practices
- Contribute to the body of knowledge which may help inform future working practices for deaf students, lecturers, and interpreters at tertiary institutions.

How will the content of the observation and interviews be recorded?

The content of the observation will be video recorded using a camcorder in your presence at a sign language interpreted lecture. The interview will also be video recorded and your responses will be transcribed. Your name will be pseudonymised and your identity will be anonymised. All data from you will be used for research purpose. None of your data will be used to judge the quality of your work. In case you do not want to be video recorded by still want to participate in the study, I will arrange an alternative form of collecting your data. Such alternatives include, you communicating in sign language for me to write down whatever you sign, or you writing your responses to the questions I will pose to you in the interviews.

What happens if the research study stops earlier than expected?

If it is necessary for the study to end earlier than expected, reasons for that decision will be provided to you.

Will my taking part in this project be kept confidential?

Any contributions made during the interviews and observation will be kept strictly confidential. You will not be identified in any reports or publications because it is only the interactions between you and the researcher that will be analysed.

What will happen to the results of the research project?

Results of this study will be used to support my PhD. Also, results of the study will published in referenced peer reviewed journals and open access websites.

Contact for further information

Should you require any further information or would like to discuss the project in more detail please do not hesitate to contact me

Daniel Fobi,
School of Education
University of Leeds
Telephone +233(0)277143230 (call or WhatsApp)/ +44(0)7425363041

E-mail address: eddfo@leeds.ac.uk

Prof. Ruth Swanwick
School of Education
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r.a.swanwick@education.leeds.ac.uk

Dr. Jackie Salter
School of Education
+44(0)113 343 4601
j.m.salter@leeds.ac.uk

Many thanks for taking the time to read this information and for considering taking part.

Consent form for deaf and hard of hearing (deaf) students

Consent form for deaf students in a study entitled: *Sign language interpreting in a tertiary institution in Ghana*

	Please write your initials next to the statements you agree with
I confirm that I have read and understood the information sheet which explains the above study and I have had the opportunity ask questions about the research.	
I understand that my participation is not compulsory, which I can withdraw at any time without giving any reasons.	
I understand that any personal information will be anonymised/pseudonymised in research.	
I give permission for the interview to be audio-recorded	
I give permission for me to video recorded in a lecture	
I understand that data collected from both the interviews and observations will be kept strictly confidential.	
I agree to inform the lead researcher should my contact details change.	

Name of participant	
Participant's signature	
Participant's email	
Date	
Name of lead researcher	
Signature	
Date*	

*To be signed and dated in the presence of the participant.

Heads of departments' Information Sheet

Sign language interpreting in a tertiary institution in Ghana

General information
You are invited to participate in a research project. This study is being carried out at the University of Leeds, UK for the award of a Ph.D. It is crucial to know, and understand why this project is being conducted, and what you will be required of you to do before you decide to take part or not. Please carefully read the following information and discuss it with others if you wish. Please if there is anything unclear to you, or would need further information on, kindly ask. Take time to decide whether or not you wish to take part.

Who is the researcher?
Daniel Fobi is a PhD researcher in Deaf education at the School of Education, University of Leeds, UK currently conducting research into *sign language interpreting at a tertiary institution in Ghana*. The researcher before his PhD studies had worked as a sign language interpreter and a sign language tutor in Ghana.

What is the project's purpose?
There is a dearth of research on sign language interpreting at tertiary educational settings in Ghana. Although inclusive education is being practiced at UEW where Deaf or hard of hearing (deaf) access their education through interpreters, little is known about the role of lecturers (source), interpreters (mediators), deaf students (consumers) and the setting. This study aims at examining how interpreting mediates learning and teaching in this context.

Why have I been chosen?

You have been chosen to be a participant of this study because you are a head of a department who has deaf students offering courses in your department at the University of Education, Winneba (UEW).

Do I have to take part?
You may either decide to participate or not. In case you chose to be involved, you will be given this information form to keep. Also, you will be given a consent from to sign. You can withdraw from the study within 2 weeks of signing the consent form without given any reason. Your data will be destroyed and will not be included in the study. Any notification of withdrawal 2 weeks after signing the consent form will not be considered because data by that time would have been analysed and used in the study.

What will being part of the study involve?
You will be interviewed for between 30 to 45 minutes about how your outfit creates conducive environment for sign language interpreting.

Will there be any disadvantages?
There are no anticipated risk or disadvantages of taking part in this study.

What are the possible benefits of taking part?
There are no material benefits for participation. It is believed that this study will provide participants with the opportunity to:

- Engage in current research relevant to their everyday practices
- Contribute to the body of knowledge which may help inform future working practices for deaf students, lecturers, and interpreters at tertiary institutions.

How will the content of the interview be recorded?
The interview will be audio recorded and your responses will be transcribed verbatim. Your name will be pseudonymised and your identity will be anonymised. All data from you will be used for research purpose. None of your data will be used to judge the quality of your work.

What happens if the research study stops earlier than expected?
If it is necessary for the study to end earlier than expected, reasons for that decision will be provided to you.

Will my taking part in this project be kept confidential?
Any contributions made during the interviews and observation will be kept strictly confidential. You will not be identified in any reports or publications because it is only the interactions between you and the researcher that will be analysed.

What will happen to the results of the research project?
Results of this study will be used to support my PhD. Also, results of the study will published in referenced peer reviewed journals and open access websites.

Contact for further information
Should you require any further information or would like to discuss the project in more detail please do not hesitate to contact me

Daniel Fobi,
School of Education
University of Leeds
Telephone +233(0)277143230 (call or WhatsApp)/ +44(0)7425363041
eddfo@leeds.ac.uk

Prof. Ruth Swanwick
School of Education
+44(0)113 343 4582
r.a.swanwick@education.leeds.ac.uk

Dr. Jackie Salter
School of Education
0113 343 4601
j.m.salter@leeds.ac.uk

Many thanks for taking the time to read this information and for considering taking part.

Consent form for heads of departments (HODs)

Consent form for HODs in a study entitled: *Sign language interpreting in a tertiary institution in Ghana*

	Please write your initials next to the statements you agree with
I confirm that I have read and understood the information sheet which explains the above study and I have had the opportunity ask questions about the research.	
I understand that my participation is not compulsory, which I can withdraw at any time without giving any reasons.	

I understand that any personal information will be anonymised/pseudonymised in research.	
I give permission for the interview to be audio-recorded	
I understand that data collected from both the interviews will be kept strictly confidential.	
I agree to inform the lead researcher should my contact details change.	

Name of participant	
Participant's signature	
Participant's email	
Date	
Name of lead researcher	
Signature	
Date*	

*To be signed and dated in the presence of the participant.

Ghanaian Sign language (GhSL) experts' Information Sheet

Sign language interpreting in a tertiary institution in Ghana

General information
You are invited to participate in a research project. This study is being carried out at the University of Leeds, UK for the award of a Ph.D. It is crucial to know, and understand why this project is being conducted, and what you will be required of you to do before you decide to take part or not. Please carefully read the following information and discuss it with others if you wish. Please if there is anything unclear to you, or would need further information on, kindly ask. Take time to decide whether or not you wish to take part.

Who is the researcher?
Daniel Fobi is a PhD researcher in Deaf education at the School of Education, University of Leeds, UK currently conducting research into *sign language interpreting at a tertiary institution in Ghana*. The researcher before his PhD studies had worked as a sign language interpreter and a sign language tutor in Ghana.

What is the project's purpose?
There is a dearth of research on sign language interpreting at tertiary educational settings in Ghana. Although inclusive education is being practiced at UEW where Deaf or hard of hearing (deaf) access their education through interpreters, little is known about the role of lecturers (source), interpreters (mediators), deaf students (consumers) and the setting. This study aims at examining how interpreting mediates learning and teaching in this context.

Why have I been chosen?
You have been chosen to because you are a Ghanaian Sign language (GhSL) expert who can vet whether or not the video transcripts are true reflection of the content in the video recorded GhSL interviews and observations.

Do I have to take part?
You may either decide to participate or not. In case you chose to be involved, you will be given this information form to keep. Also, you will be given a consent from to sign.

What will being part of the study involve?
- You will be given transcripts of interviews and observations which were done in GhSL to confirm whether or not they have been transcribed to reflect the content of the observations and interviews in the videos that will be provided to you.
- You will be asked to sign a consent form indicating that you will keep contents of the data confidential and will not disclose them to any third party.

Will there be any disadvantages?
There are no anticipated risk or disadvantages of taking part in this study.

What are the possible benefits of taking part?
There are no material benefits for participation. It is believed that this study will provide participants with the opportunity to:
- Engage in current research relevant to their everyday practices
- Contribute to the body of knowledge which may help inform future working practices for deaf students, lecturers, and interpreters in education settings particularly at the tertiary level.

What happens if the research study stops earlier than expected?
If it is necessary for the study to end earlier than expected, reasons for that decision will be provided to you.

What will happen to the results of the research project?
Results of this study will be used to support my PhD. Also, results of the study will published in referenced peer reviewed journals and open access websites.

Contact for further information
Should you require any further information or would like to discuss the project in more detail please do not hesitate to contact me

Daniel Fobi,
School of Education
University of Leeds
Telephone +233(0)277143230 (call or WhatsApp)/ +44(0)7425363041
eddfo@leeds.ac.uk

Prof. Ruth Swanwick
School of Education
+44(0)113 343 4582
r.a.swanwick@education.leeds.ac.uk

Dr. Jackie Salter
School of Education
0113 343 4601
j.m.salter@leeds.ac.uk

Many thanks for taking the time to read this information and for considering taking part

Consent form for Ghanaian Sign language (GhSL) experts

Consent form for GhSL experts in a study entitled: *Sign language interpreting in a tertiary institution in Ghana*

	Please write your initials next to the statements you agree with
I confirm that I have read and understood the information sheet which explains the above study and I have had the opportunity ask questions about the research.	
I understand that my participation is not compulsory, which I can withdraw at any time without giving any reasons.	
I understand that any personal information in the study I come into contact with will be kept confidential and I will not disclose the content to any third party.	

I understand that data collected from both the interviews and observations will be kept strictly confidential.	
I agree to inform the lead researcher should my contact details change.	

Name of participant	
Participant's signature	
Participant's email	
Date	
Name of lead researcher	
Signature	
Date*	

*To be signed and dated in the presence of the participant.

Appendix F protocols for data collection

Interview protocol for deaf students

Question: Please tell me the preparation you have made in order to access educational interpreting for your course here in the university

Prompts

1. Can you explain to me how familiar you are in accessing sign language interpreting services?

2. For how long have you been using GSL and how fluent are you in using the GSL?

3. Can you explain to me the knowledge and skills you expect your interpreters to possess in order to provide the best interpretation to you?

4. Tell me some of the strategies you employ in with the sign language interpretations offered to you here in the university

5. What measures do you put up in order to meet the academic demands in the university

6. In your own view how do expect lecturers to contribute to make sign language interpreting effective to you?

7. In your own view how do expect classroom environment to be set up in order to make sign language interpreting effective to you?

8. Please tell me some of the demands you face in interpreted lectures and how you are able to control such demands.

- Please is there anything you would like to talk about that I didn't ask?

- Please do you have any suggestions to make in order to ensure effective sign language interpretation?

Interview protocol for lecturers

Main Question: Please can you tell me the contributions you offer to make sign language interpreting in your course effective/ successful?

Question: Please can you tell me some of the specific roles you play in supporting sign language interpreting your course?

Probes:

a. How many years have you taught in the university?

b. How years have you taught deaf students?

c. Can you tell me the training you have had about teaching through sign language interpreters?

d. What kind of support do you offer sign language users in your class?

e. How do you know deaf students follow and understand your lecture?

Question: Please can you comment on how familiar you are with the roles of sign language interpreters in your lectures?

Prompts:

a. How do you relate with sign language users in your lectures (deaf students and interpreters)?

b. Can you tell me in your own view what the roles and responsibilities of interpreters are/apart from interpreting; what other responsibilities do they have in the university?

c. Which areas do you consider of great challenge to the work of sign language interpreters in your course?

d. How have these challenges affected the work of sign language interpreters in your course?

Question: Please tell me how proficient you expect sign language interpreters to be in order to interpret your course.

Prompts:

a. How knowledgeable do you prefer interpreters to be in your discipline?

b. How important is it to you that interpreters have prior experience interpreting in your specific discipline? Why?

c. What type of educational background do you prefer interpreters to have in your specific discipline?

d. How important is it to you that interpreters understand the specific vocabularies and jargons unique to your discipline?

e. When interpreters in your discipline encounter concepts they do not understand while interpreting, how do you expect them to address the issue?

f. What are other competencies or skills that you feel interpreters in your discipline must possess that have not been mentioned in this interview?

Question: Please what are the challenges you encounter when you engage in sign language interpretation in your course?

Prompts:

a. Do you see the sign language users to be cooperative? Kindly explain

b. In your own view, what environment should the university provide for successful sign language interpretation?

c. Please tell me how prepared a deaf student should be in order to access your course.

d. How easy/difficult is it for you to successfully or otherwise engage in the sign language interpretation in your course?

e. Please tell me some of the demands you face in interpreted lectures and how you are able to control such demands.

- Please is there anything you would like to talk about that I didn't ask?

- Please do you have any suggestions to make in order to ensure effective sign language interpretation?

Interview guide for interpreters

Main question: Please can you comment on the proficiencies an interpreters should have in order to interpreters at the tertiary level?

Question: Please tell me some of the interpreting demands you encounter at the tertiary level and the control options you employ to contain them?

Probes:

a. Does the classroom environment posse any challenge for you? If yes, what form does it take and how do you control it?

b. Do you face any interpersonal demands? If yes, what form does it take and how do you control it?

c. What about intrapersonal demands? How do you solve that?

d. Is there any linguistic demands you encounter during your interpretation? How do you control those demands?

e. How long have you been signing?

f. How long have you been interpreting?

g. Please describe the training you received in signing and in interpreting.

Question: In your own view what are the requisite training and skills interpreters need in order to interpret at the tertiary level?

Prompts:

a. What educational level must interpreters have?

b. What professional qualification will be good?

c. Is it enough to know two languages (English and GSL) to interpret? If yes why, if no why?

Question: Can you tell me how you learned sign language and became an interpreters and for how many years?

Prompts:

a. Tell me whether or not you have any background knowledge about the course you interpret for and how that knowledge/lack of knowledge affect your interpretation?

b. How long have you interpreted in this course?

c. Do you think the number of year have any impact on the quality of your interpretation? Can you explain further?

Question: Please tell me what goes into your pre and post-assignments?

Prompts:

a. Do you meet with your consumers before you take an assignment? Please explain.

b. Please tell me what you do after an interpreting assignment.

c. What are some of the challenges you encounter when you work with your consumers (deaf students and lecturers)

d. In your view, how do you expect lecturers to contribute to the success of sign language interpretation?

e. In your view how do expect classroom environment to be set up in order to make sign language interpreting effective to you?

f. Please tell me how prepared a deaf student should be in order to access sign language interpretation in the university.

- Please is there anything you would like to talk about that I didn't ask?
- Please do you have any suggestions to make in order to ensure effective sign language interpretation?

Interview guide for institutional heads

Main Question: Please tell me how the university have made their environment conducive for sign language interpretation.

Question: Please tell me how your institutions support sign language interpreting for deaf students?

Probes:

a. How many interpreters have you got to support deaf students, and how many deaf students do you have?

b. Have you run any orientation/s for your lectures about how to teach using sign language interpreting?

c. Do you have any additional services you provide to deaf students? Please explain.

Question: Can you tell me how you recruit and retain sign language interpreters for deaf students?

Prompts:

a. How often do you recruit interpreters?

b. What are the requirements that an interpreter needs to meet before they are recruited?

c. In your own view how proficient should an interpreter in order to interpret here in your institutions

d. Please tell me about the remunerations for the interpreters.

e. Do you think the university has a succession plan for interpreters?

f. Please tell me about how deaf students are admitted into the University.

g. Please tell me about their entry requirements

Question: Please tell me some of the challenges you think classrooms here in the university pose to successful sign language interpreting process.

Prompts:

a. In your own view, do you feel the institution takes adequate care of all the services of sign language interpreters in the school?

b. Please tell me about the seating arrangements in the lecture halls

c. Please tell me about the ventilations in the lecture halls

d. Please tell me about the lighting in the lecture halls

Question: Please tell me how you ensure that an effective sign language interpreting is provided to deaf students?

Probes:

a. Please tell me about how you supervise sign language interpreting

b. Please who does the supervision?

c. Please who does the supervisors report to?

d. In which ways have your institution tried to cope with the challenges emerging from signed sign language interpreting?

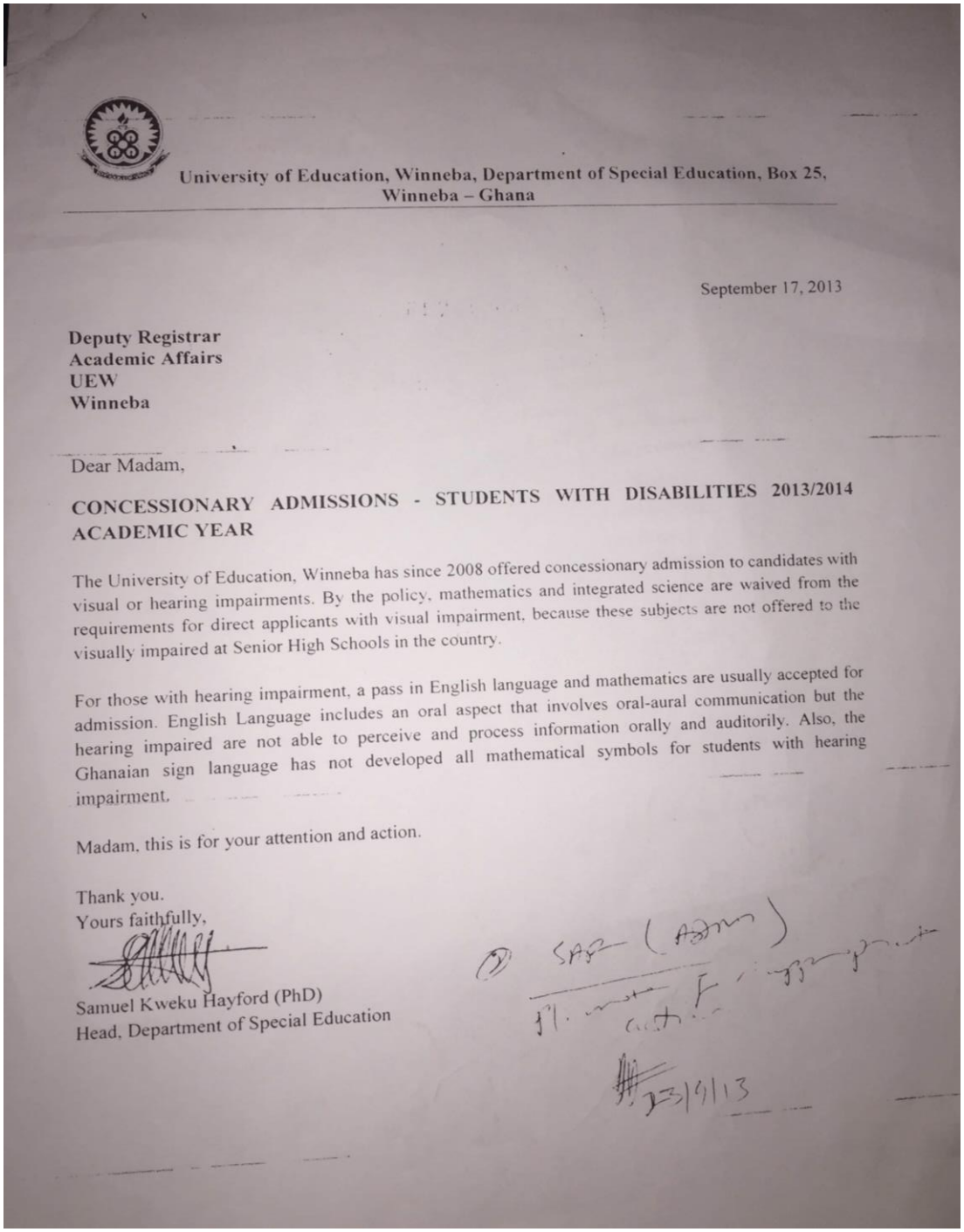
- Please is there anything you would like to talk about that I didn't ask?
- Please do you have any suggestions to make in order to ensure effective sign language interpretation?

Appendix G adapted communication questionnaire for deaf students

Variables	Level	Please tick where appropriate
Gender	Male	
	Female	
Age Group	20 – 24 years	
	25 – 29 years	
	30 – 34 years	
University	UEW	
	UG	
	TTC	
	KTU	
Academic Level	Level 100	
	Level 200	
	Level 300	
	Level 400	
Preferred Language	Spoken Language	
	Sign Language	
Years of Usage	1 – 10 years	
	11 – 20 year	
	21 – 30 year	
	31 – 40 year	
Academic Programme	Special Education	
	Graphic Design	
	Art Education	
	ICT	
	Fashion	
	Social Work	
	Technology	
	Early Childhood	
	Building Technology	
	Food Technology	
	Hospitality Technology	
	Accounting	
	Other	

	Statement	Disagree	Undecided	Agree
1	I do not like the way interpreters fingerspelling to me			
2	The university provides sign language interpreters in every lectures for me			
3	Interpreters interpret in a very fast way in the classroom			
4	Overall I will rate my interpreters as proficient			
5	I am satisfied with the way lecturers involve themselves in sign language interpreting in my classes			
6	The university environments is not conducive for learning through sign language interpreting.			
7	I understanding simultaneous communication (speech and sign together)			
8	I can produce signs in GSL (Ghanaian Sign language)			
9	I can understand others when they communicate to me in GSL (Ghanaian Sign language)			
10	I cannot communicate in signed English			
11	I understand signed English when others communicate to me			
12	I prefer to use GSL to communicate in class			
13	I prefer to use GSL to present my assignment and exercises			
14	Overall the interpreting services at the University is very satisfactory			

Appendix H a letter from the head of SpEd to the admission office of UEW



University of Education, Winneba, Department of Special Education, Box 25, Winneba – Ghana

September 17, 2013

Deputy Registrar
Academic Affairs
UEW
Winneba

Dear Madam,

CONCESSIONARY ADMISSIONS - STUDENTS WITH DISABILITIES 2013/2014 ACADEMIC YEAR

The University of Education, Winneba has since 2008 offered concessionary admission to candidates with visual or hearing impairments. By the policy, mathematics and integrated science are waived from the requirements for direct applicants with visual impairment, because these subjects are not offered to the visually impaired at Senior High Schools in the country.

For those with hearing impairment, a pass in English language and mathematics are usually accepted for admission. English Language includes an oral aspect that involves oral-aural communication but the hearing impaired are not able to perceive and process information orally and auditorily. Also, the Ghanaian sign language has not developed all mathematical symbols for students with hearing impairment.

Madam, this is for your attention and action.

Thank you.
Yours faithfully,

Samuel Kweku Hayford (PhD)
Head, Department of Special Education

Appendix I rephrased research questions

First research questions	Revised research questions	Final research questions
a. How does sign language interpreting mediate learning and teaching at tertiary classrooms? b. How is learning and teaching conceptualised and realised at the tertiary level? c. How is interpreting analysed using the demand control schema? d. What preparations do the various actors need to promote learning and teaching through interpreting? e. What are some of the demands for all the actors involved in interpreting, and what control options are employed to meet those demands in learning and teaching process? f. What views do deaf students have on sign	1. How does sign language interpreting mediate inclusion in tertiary classrooms? a. What are inclusion, and how do sign language interpreting actors perceive them in tertiary context? i. What understanding do sign language interpreting actors have on inclusion in tertiary classrooms? i. What perceptions do deaf students hold on sign language interpreting in tertiary classrooms? b. Given the actors' understanding of inclusion, what demand control schema considerations are encountered when sign language interpreting mediates inclusion? i. What are the demands on sign language interpreters in the classrooms? i. What control options do sign language interpreters employ to manage those demands? c. What collaborations exist between the actors in the classroom in order to promote inclusion in the tertiary level? i. How do the actors work together to provide collaborative support in the classrooms?	1. How do interpreters mediate interactions between deaf students and lecturers in tertiary classrooms? a. What understandings do deaf students, interpreters, lecturers and heads of departments (actors) have on tertiary classroom interactions mediated by interpreting? i. What expectations do deaf students have on interpreting, and what are their readiness for learning through it in tertiary classrooms? i. What understandings do the actors have on tertiary inclusion? b. Given the actors' understandings of inclusion, what demand control schema considerations are encountered when interpreting mediates tertiary classroom interactions? i. What are the demands of interpreting in the classrooms? i. What control options do the interpreters employ to manage those demands? c. What is the nature of the interactions between deaf students, interpreters, and lecturers in the classrooms? i. What collaboration exists between the deaf students, lecturers and interpreters in facilitating the classroom interactions?

language interpreting at the tertiary level?

g. What support do tertiary institutions offer to enhance learning and teaching through sign language interpretation at inclusive settings?