



**DEAF PRESERVICE TEACHERS' LEARNING EXPERIENCES AT AN
INSTITUTION OF HIGHER LEARNING**

by

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DECLARATION

I, Simi Laljith (223088131), hereby declare that this thesis is my original work. I have produced this work under the supervision of Dr Zanele Zama in the School of Education, University of KwaZulu-Natal. I declare that this work has never been submitted to any University for qualification purposes. The studies and work of other authors have been acknowledged through a comprehensive citation and referencing process and by adhering to acceptable and reputable norms for academic writing.



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ABSTRACT

The introduction of the White Paper 6, allowed students with hearing impairments to enrol in different Institutions of Higher Learning. However, their academic success was influenced by the type and the level of support they received. The aim of this study was to explore the experiences of Deaf and Hard of Hearing preservice teachers at the Institution of Higher Learning. This study intended to determine the kind of support that Deaf or Hard of Hearing preservice teachers' need for their learning and development. The study was conducted in one Institution of Higher Learning that offers a Bachelor of Education as a teaching profession in KwaZulu-Natal, South Africa. An interpretive paradigm and an exploratory case study research design approach were adopted in this study. Three Deaf preservice teachers were purposively sampled. Qualitative data was collected through semi-structured interviews, unstructured lecture room observations, and reflective journals. The data were thematically analysed using inductive analyses, and the results are presented in this thesis as the collated key findings. The study was underpinned by the Sociocultural Theory of Cognitive Development developed by Lev Vygotsky in year 1962. Findings from the study indicated that while Deaf students are accommodated and supported in an Institution of Higher Learning, there are still some challenges that affect their learning and development. The Institution provided interpreters for each student, dictation apps, PowerPoint presentations and videos, however, there were significant gaps identified. There is a clear need for the Institution to provide more advanced learning technologies such as induction loops in lecture rooms, enhance Deaf awareness and provide more interpreters to improve Deaf students learning opportunities. Further research is required for teacher educators to explain how they support Deaf and Hard of Hearing learning.

Keywords: Deaf, Hard of Hearing, preservice teachers, Institution of Higher Learning, SASL

DEDICATION

I dedicate this work to my late paternal grandmother, Dhularie Durgapersadh. Without her teachings, I would not have been where I am today. The morals and values she inculcated in me will always reside within me. She will always be remembered.

This study is also dedicated to my parents and loving husband. I know they are proud of this achievement. Without their endless love and encouragement, I would never have been able to complete my graduate studies. I love you all and I appreciate everything that you have done for me.

I further dedicate this work to all Deaf and Hard of Hearing students entering tertiary institutions. May you find a world worthy of your passion, dedication and talent. If you do not, help us build one.

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LIST OF ACRONYMS

ALD	Assistive Learning Device
DoE	Department of Education
CI	Cochlear Implant
FM	Frequency Modulation
K-K12	Kindergarten to 12 th Grade
KZN	KwaZulu-Natal
NSFAS	National Student Financial Aid Scheme
SASL	South African Sign Language
UKZN	University of KwaZulu-Natal
US	United States
WHO	World Health Organisation
ZDP	Zone of Proximal Development
PT	Preservice Teacher

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CHAPTER 1

Introduction and Background to the Study

1.1 Introduction

Throughout history, Deaf and Hard of Hearing people strived for their identity as ‘complete’ humans. The Department of Higher Education is committed to equitable and quality education. As a result, they adhered to the constitutional obligation to support inclusivity and accommodated students with disabilities in the education system (Batista & Garcia, 2023). Many Institutions of Higher Learning included South African Sign Language (SASL) as a module and provided interpreters to support Deaf and Hard-of-Hearing students.

This chapter provides a broad overview of the research report and introduces the reader to the research plan. The chapter begins with a discussion of the background, the problem statement and the significance of the research. The next section provides the purpose and rationale of the study which followed the research objectives, research questions and the location of the study. This chapter also provides clarification of the key concepts, a synopsis of the theoretical framework and discusses the research design. The chapter also succinctly describes each of the five chapters in this thesis.

1.2 Background to the study

In the 20th century, very few Deaf or Hard of Hearing students were accommodated in the Institutions of Higher Learning. Equality of education was not evident in South Africa and as a result, many students with disabilities including Deaf or Hard of Hearing students were excluded from the education system. Kelly et al., (2020) assert that very little to no access to courses via sign language was offered. Although Deaf or Hard of Hearing students were accommodated in schools, little support for learning and development was provided. This caused Deaf or Hard of Hearing students to leave school with education levels far below those of hearing students (Oppong, 2018). The exclusion hindered their opportunity to fully achieve their learning goals.

The education experiences of students with disabilities became a concern for parents, teachers and communities. In order to alleviate the situation, in 2001 the Department of Education (DoE) implemented the Education White Paper 6: Special Needs Education Building an inclusive education and training system. The main intention of the White Paper 6 was to build

an inclusive education and training system to accommodate students with special needs in the education system (Department of Education [DoE], 2001). That action confirmed the commitment to the provisioning of equitable and quality education for all students within one inclusive education system. Through White Paper 6, the South African government committed to creating special needs education as an integrated component of the education system.

The Department of Higher Education also committed to the inclusion of diverse students including those with disabilities. Bell and Swart (2018) affirms that the Institution of Higher Learning began to accept students with special education needs after White Paper 6 was introduced. Therefore, Deaf or Hard of Hearing students were allowed to enrol in different Institution of Higher Learning to further their studies.

Many Institutions of Higher Learning opened Disability Support Units to provide services for students with disabilities to learn. Therefore, Deaf or Hard of Hearing students and all other students with disabilities expected enough learning support similar to hearing students enrolled in Institution of Higher Learning (Batista & Garcia, 2023). However, many students with disabilities, including Deaf or Hard of Hearing students, experience learning challenges in different Institutions of Higher Learning. Makiwane (2018) asserts that the poor functioning of Disability Support Units affects learning development for many students. Therefore, the literacy levels of many Deaf or Hard of Hearing students are lower than those of hearing students (Frumos & Rosa, 2019).

1.3 Statement of the problem

The type and the level of support that Deaf or Hard of Hearing students receive in Institution of Higher Learning influence their academic success. While Deaf or Hard of Hearing students always anticipate getting the same kind of support that they receive in high schools when they enroll in institutions of higher learning, Bell and Swart (2018) assert that that is not always the case. Deaf and Hard of Hearing students still face numerous obstacles and hurdles at the university level (Makiwane, 2018). Moreover, very little is known about Deaf or Hard of Hearing preservice teachers' learning experiences in the South African Institutions of Higher Learning.

The number of Deaf and Hard of Hearing students who receive their education in general education lecture rooms with hearing students has rapidly increased. This change in the

education of Deaf and Hard of Hearing students is mainly due to the development of the legislation that supports inclusive education for students with disabilities (Biermann, 2016). However, the social and academic experiences of the support services for Deaf and Hard of Hearing students are not explored in order to determine the effectiveness of these services in terms of equal epistemological access to education (Khalid, 2018). Institutions of higher education in South Africa have transformation and equality policies that are aimed at opening education access to all people. However, there is no documentary evidence of any monitoring or evaluation of these policies. Several studies indicated that Deaf and Hard of Hearing students experience difficulties participating and interacting with teachers and hearing students (Albash, 2023; Frumos & Rosu, 2019). Therefore, there is an urgent need to identify all key issues concerning their participation and interaction in general educational setting.

1.4 Purpose and Rationale of the study

1.4.1 Purpose of the study

The purpose of the study was to examine the Deaf or Hard of Hearing preservice teachers' learning experiences in an Institution of Higher learning. It sought to explore all the opportunities and the challenges that Deaf or Hard of Hearing preservice teachers encounter in their learning journey. Examining learning support was another way to address the needs of students who are Deaf or hard of hearing. Additionally, this study's primary goal was to ascertain what kind of learning support preservice teachers who are Deaf or Hard of Hearing obtained for their development.

1.4.2 Rationale of the study

My interest in conducting this study was driven by my personal and professional experiences of teaching Deaf and Hard of Hearing students in a particular Deaf high school in KwaZulu-Natal (KZN). During my years of teaching in a Deaf or Hard of Hearing school, I developed good relationships with the students and became familiar with them and maintained contact even after matriculation. Many of my former high school students share their Institution of Higher Learning experiences when they come for a visit. Therefore, Deaf or Hard of Hearing students shared their challenges and experiences although they were accommodated and supported by Institutions of Higher Learning. Therefore, the support provided was inadequate. While they anticipate full learning assistance, that was not available in some Institutions of Higher Learning.

Deaf or Hard of Hearing students mentioned that the interpreters are usually available for them to understand lectures but raised concerns that some of them have an English language barrier which makes it challenging to understand lectures. Many mentioned that they started realising the difference between basic sign language and English, which is used as a medium of instruction in most South African Institutions of Higher Learning. Deaf or Hard of Hearing students have to repeatedly ask for word clarification to understand what they have to learn. They also mentioned that because lecturers are not equipped with enough skills to handle basic sign language, they are not permitted to use basic sign language when doing presentations. Therefore, Deaf or Hard of Hearing students have to do their presentations in English to obtain better marks. However, most of them prefer using sign language for their presentations.

In support of my experiences, the literature affirms that many Deaf or Hard of Hearing students do not receive adequate support for their learning and development in various South African Institution of Higher Learning (Bell et al., 2016). They added that this is the case as many Institutions of Higher Learning frequently lack financial and human resources to support Deaf or Hard of Hearing students. Moreover, Batista and Garcia (2023) found that Deaf or Hard of Hearing students encounter communication difficulties as they are generally taught by lectures that do not understand sign language. Sign language is the native tongue for those who have been deaf since birth, and as such, it is related to their cognitive development. Batista and Garcia (2023), identified that the primary issue faced by Deaf or Hard of Hearing students is the incapacity to comprehend and understand academic subjects as the lecturers do not show empathy towards them. In addition, Kisanga (2019) posit that the educational hurdles that Deaf or Hard of Hearing students face are that lecturers that are reluctant to provide lecture notes, they experience reading difficulties, and they are over-reliant on oral lectures.

1.5 Significance of the Study

This study seeks to assist teacher educators in understanding preservice teachers' learning needs in different Institutions of Higher learning. The findings make a valuable contribution to the education of Deaf and Hard of Hearing students, aligning with Education White Paper 6, which was implemented by Institution of Higher Learning to protect the rights of all students with disabilities. Therefore, this study expects to make a major contribution to future research endeavours while also bridging the research gaps between enabled and Deaf or Hard

of Hearing preservice teachers. The study provided valuable insights into how educational institutions can better support Deaf and Hard of Hearing students.

1.6 Research Objectives and Research Questions

1.6.1 Research Objectives

The objectives of this dissertation are to achieve the following:

- i. To understand Deaf or Hard of Hearing preservice teachers' learning needs in an Institution of Higher Learning.
- ii. To comprehend how Deaf or Hard of Hearing preservice teachers' learning needs are provided in an Institution of Higher Learning
- iii. To examine why Deaf or Hard of Hearing preservice teachers' learning needs are provided in that way in an Institution of Higher Learning.

1.6.2 Research Questions

The aim of the study was to provide an in-depth exploration of the experiences of Deaf and Hard of Hearing preservice teachers at the University of KwaZulu-Natal (UKZN) by finding answers to three critical questions, namely:

- i. What are the learning needs of Deaf or Hard of Hearing preservice teachers in an Institution of higher learning?
- ii. How are Deaf or Hard of Hearing preservice teachers' learning needs provided in an Institution of higher learning?
- iii. Why are Deaf or Hard of Hearing preservice teachers' learning needs provided in that particular way in an Institution of higher learning?

1.7 Location of the Study

The study was located in one Institution of Higher Learning that offers a Bachelor of Education as a teaching profession in KwaZulu-Natal (KZN), South Africa (SA). The Institution enrolls a variety of preservice teachers who meet the requirements including the Deaf and Hard of Hearing. This Institution has a policy that supports staff and students with disabilities. The Policy was formulated in 2004 and is now in its 19th year of existence (Mjilo, 2019). Furthermore, the Institution has a Disability Support Unit, which is a central service that is located in the Division of Student Services to support all preservice teachers with

disabilities. Preservice teachers with disabilities are also aided with registration, provided orientation programmes and other support. The Disability Support Unit aimed to enhance equity and support quality learning for all preservice teachers with disabilities.

1.8 Clarification of key concepts

In this section, I intend to clarify the key concepts within the context of my study.

Deaf

According to Vinoth and Nirmala (2017), Deaf refers to persons without hearing. Therefore, Deaf people, the Deaf community and Deaf culture refer to a group of people who are linguistic and cultural minorities in many nations who frequently view themselves as a community (Allman, Boser & Murphy, 2019).

Hard of Hearing

According to Disabilities, Opportunities, Internetworking and Technology (2022), Hard of hearing refers to someone with mild-to-severe hearing loss. In these individuals, some hearing capability is still present. This study defined Hard of Hearing Preservice Teachers as students who are in the process of becoming teachers and who are acquiring the knowledge and skills necessary to be capable (Kelly et al., (2020). They are pursuing a Bachelor of Education degree at a South African Institution of Higher Learning

Preservice teachers

Preservice teachers are defined as university students who are preparing to become teachers to qualify for a Bachelor of Education degree (Burn & Mutton, 2015). Similarly, Darling-Hammond (2014) describes a preservice teacher as an actively registered student who is training to become a teacher at a particular university.

Institution of Higher Learning

The term Institutions of Higher Learning includes universities, colleges and various professional schools that prepare students for careers in law, theology, medicine, business, music and other different careers (Alemu, 2018). In this study, the Institutions of Higher Learning refers to a teacher training school for students who want to become teachers.

1.9 Synopsis of the Theoretical Framework

The study was underpinned by the Sociocultural Theory of Cognitive Development. Khalid (2018) points out that Lev Vygotsky (1962-1978) was a Russian psychologist and teacher who developed a theory about how social interactions influence cognitive development. The study employed Vygotsky's sociocultural theory of Cognitive Development to explore the involvement, interaction and learning experiences of Deaf or Hard of Hearing preservice teachers in an Institutions of Higher Learning. Drawing on the theory was important for this study because it helped to understand how Deaf or Hard of Hearing students participate and interact with hearing students in the Institutions of Higher Learning lecture room, as well as how the lecturers provide varied methods of instruction that allow students to learn, participate and interact with each other.

The major concept of Vygotsky's Sociocultural Theory of Cognitive Development is that social interaction plays a fundamental role in the development of cognition. According to Daniels (2017), social interaction promotes cognitive growth, and by drawing on this concept, Vygotsky is able to show that knowledge is seen as social in nature and constructed through the processes of interaction, communication, and collaboration among children in social settings. Vygotsky (1978) points out that the learning context has significantly influenced learning and development and claims one particularly effective technique to build skills and strategies is through collaboration and engagement with more experienced peers.

1.10 Synopsis of Research Design and Methodology

1.10.1 Research Paradigm

A research paradigm is a way of thinking, seeing, characterizing, and carrying out research, claim Bertram and Christiansen (2020). A research paradigm is used to find the meaning of the study. Creswell & Creswell (2018) assert that other paradigm types exist, including the post-positivist paradigm, critical paradigm and interpretive paradigm which is related to this research study. However, an interpretive paradigm was used for this research study.

The interpretive paradigm was employed to investigate the learning experiences of Deaf and Hard of Hearing preservice teachers at an Institution of Higher Learning. This approach facilitated an understanding of the subjective aspects of human experiences (Cohen et al., 2018). The key categories of people's views about the world are the ontology, epistemology, axiology and methodology of research that are discussed below (Denzin & Lincoln, 2018).

Ontology is a branch of philosophy that examines the assumptions people rely on to perceive something as meaningful or real (Yin, 2011). Ontology refers to the fundamental nature or essence of a social phenomenon. Epistemology, on the other hand, explains how individuals acquire knowledge and understand truth or reality (Creswell & Creswell, 2018). It centers on the nature of human knowledge and understanding, enabling researchers or students to expand, enhance, and deepen insights within their area of study. Cohen et al. (2018) also identified methodology as how researchers go about obtaining knowledge about the world as it was explained above. This includes how they collect data depending on their views of what exists and what can be known and how they describe and explain the phenomena (Bertram & Christiansen, 2020). After that, the axiology of the interpretive paradigm highlights the importance of visible values. The researcher developed good relations with the participants so that they could feel comfortable enough to explain their learning experiences.

1.10.2 Research Approach

This study adopted a qualitative approach to explore the learning experiences of Deaf or Hard of Hearing preservice teachers in an Institution of Higher Learning. According to Bertram & Christiansen (2020), the qualitative approach was grounded in a naturalistic setting. Qualitative studies look at data in detail which has a wider research base (Creswell & Creswell, 2018). Therefore, using this approach generated data in the field at the site where participants experience the issue or a problem under study. The approach allowed for openness, and flexibility, which are favoured by qualitative researchers.

1.10.3 Research Design

The research design was the framework used to gather and analyse data to address the research questions (Bertram & Christiansen, 2020). According to Cohen et al. (2018), a case study is identified as a systematic and in-depth research of one particular case in its context. The study used an exploratory case study research design to gather data from participants. Exploratory case studies examine situations where the case being studied does not have a distinct or definitive set of outcomes (Yin, 2018). The study of cases is often qualitative in nature; thus, an exploratory case study approach allowed the pre-service teachers' experiences to be explored in the natural setting. In this study, the exploratory case was a group of Deaf or Hard of Hearing preservice teachers enrolled in a particular Institutions of Higher learning. It allowed the participants to explore the situation they were facing (Denzin & Lincoln, 2018).

It also allowed capturing the reality of the participants' lived experiences and thoughts about their experiences in an Institution of Higher Learning.

1.10.4 Data Generation Methods

In a qualitative study, data collection refers to the concepts and procedures employed by researchers to produce data from a sample of data (Cohen et al., 2018). The researcher gathered extensive data using semi-structured interviews, reflective journals and unstructured observation with the participants.

1.10.4.1 Semi-structured interviews

The qualitative approach of this research enabled the use of semi-structured interviews for comprehensive data collection. These interviews were the main method employed to gather information in line with the research objectives (Bertram & Christiansen, 2020; Yin, 2018). Semi-structured interviews were conducted to comprehend and assess the situation in the context of the research study. The researcher used an interview guide, consisting of open-ended questions, allowing participants to share their insights and knowledge related to the study. Semi-structured interviews allowed the participants to ask probing questions when needed. As a researcher and a teacher in a Deaf and Hard of Hearing school, the researcher was the interviewer as the researcher understood sign language and carefully listened to the interviewees' responses to make sense of the data. All the interviews were video recorded to allow the researcher to carefully watch when analysing data.

1.10.4.2 Reflective journals

Reflective journals were utilised as a method of data collection. Reflective journals are written records of what the researcher did, thought, and felt throughout the research collection process (Bertram & Christiansen, 2020). The researcher recorded data using field notes. According to Yin (2018), the recording of data should be a silent partner and not call attention to itself. The data was recorded without disrupting a participant's rhythm or pace. According to Yin, (2018) one of the key advantages of using this method was that the researcher gains a deep understanding into the research subjects due to the proximity to them and hence the research is extensive, thorough and accurate. Reflective journals were analysed using document analysis. This means analysing the text for themes and patterns.

1.10.4. 3 Unstructured observation

According to Bertram and Christiansen (2020), unstructured observation refers to writing a free description of what the researchers observe. The advantage of unstructured observation as a data collection method was that it is a powerful method for gaining insight into situations. This method helped the researcher to see exactly what was really going on in the lecture room. There were field notes written as the observations were conducted in a Higher Institutions of Learning lecture room. Field notes are the notes that researchers take while conducting their research in the field (Bertram & Christiansen, 2020, p.107). Therefore, the researcher observes and records phenomena without following a fixed set of criteria.

1.10.5 Sampling procedure

The researcher recruited students who reflected positive attitudes and interest in the research study. Therefore, purposive sampling was used. Purposive sampling is a collection of open-ended data and interpretative experiences using qualitative methods (Creswell & Creswell, 2018, Yin, 2011). Purposive sampling includes the identification and selection of information-rich instances with few resources and is frequently utilised in qualitative research (Denzin & Lincoln, 2018). Purposive sampling aims to connect the researcher with people who are most likely to have the expertise and information needed for the study. To participate in this study, the researcher purposively selected three Deaf preservice teachers from the sampled site. Participants were chosen from the third year to the fourth year as they were more experienced and familiar with the Institution of Higher Learning.

1.11 Data Analysis

This study adopted an inductive analysis approach. According to Yin (2018), the inductive analysis approach refers to analysing data without any preconceived theories. Data is best communicated in a succession of steps so that the reader may understand how each step leads to another (Creswell & Creswell, 2018). This study utilised thematic analysis, a process that involves six steps: gaining familiarity with the data, generating initial codes, identifying themes, reviewing the themes, defining the themes, and presenting the themes (Bertram & Christiansen, 2020). To familiarise herself with the content, the researcher first read and listened to the recorded interviews. Next, the researcher moved on to the second aspect, which is coding. This is where the researcher points out significant aspects of the data that aided in

comprehending the learning experiences of Deaf or Hard of Hearing preservice teachers in Institutions of Higher Learning. Thereafter, the researcher started looking for potential themes. Examining for meaning is a crucial component of the systematic coding process (Denzin & Lincoln, 2018). Fourthly, the researcher reviewed the themes to see if they conveyed a cogent tale based on participant data. Fifthly, identifying these themes, the researcher analysed each one in-depth and looked for links between them. Lastly, using the main topics from the report, the researcher wrote an analytical narrative concerning the body of literature already in existence.

1.12 Chapter Overview

This dissertation is organised into five chapters. There is also an accompanying reference list and appendices.

Chapter 1: The chapter presents the following aspects: the study's background and the problem statement. It also gives an overview of the rationale for conducting this empirical research. Research objectives and research questions, as well as the location of the study, are discussed in this chapter. Additionally, this chapter also includes clarification of key concepts, Synopsis of the theoretical framework, data analysis, limitations of the study and the organisational structure of the thesis.

Chapter 2: This chapter includes a review of pertinent literature and the history of Deaf education, the laws that affect Deaf education, Inclusive policies historical discrimination and marginalisation among the Deaf community, the need for this research and lack of literature, and the theoretical framework used in this study.

Chapter 3: This chapter describes the methodology used in this qualitative study. It also addresses how this methodological approach was used within the conceptual framework.

Chapter 4: This chapter presents the results of the interviews and analyses of the findings. In this section, detailed biographical information of the participants is provided, and the issues raised by the participants are discussed.

Chapter 5: Concluding thoughts for takeaways, institutional enhancements, and recommendations for future studies are discussed in this chapter. The chapter also provides the limitations of the study and the recommendations.

1.13 Conclusion

This chapter introduced the phenomenon under exploration, namely, Deaf or Hard-of-Hearing preservice teachers' learning experiences at an Institution of Higher Learning. This chapter presented a detailed background, statement of problem, purpose and rationale for the study. The background clearly shows the genesis of the problem that this study addresses. Additionally, this chapter also included research objectives and research questions, location of the study, and clarification of key concepts. This chapter provided insight into the Synopsis of the theoretical framework, research design, and methodology, data analysis, limitation of the study, and chapter overview. The next chapter will present a literature review and theoretical framework in detail.

CHAPTER 2

Literature Review

2.1 Introduction

In the preceding chapter, the study established the background and problem statement, including the rationale for conducting the research and the location of the study. The research objectives and research questions were also provided to define the problem and provide clarity on the learning experiences of Deaf and Hard of Hearing preservice teachers in an Institution of Higher Learning. This chapter discusses the existing literature to explore Deaf or Hard of Hearing preservice teachers' learning experiences in an Institution of Higher Learning and provides the theoretical framework that framed the research study. The reviewed literature provides the definition of the term literature review and an understanding of the key terms Deaf and Hard of Hearing. Literature also provides the history of Deaf Education as espoused by different scholars. The International and National policies that relate to how Deaf and Hard of Hearing students learn are also discussed. That includes the guidance and the kind of resources needed for the teaching and learning of such students in the Institutions of Higher Learning. In addition, the literature also discusses teacher knowledge about teaching Deaf and Hard of Hearing students. Subsequently, the Sociocultural Theory of Cognitive Development is also presented as the theoretical framework that framed the study.

2.2 Defining the term 'Literature review'

Bertram and Christiansen (2020) defined a literature review as an evaluative report of studies related to a selected area of focus. Creswell and Creswell (2018) shared a similar view and added that it is an overview of relevant and significant literature in the research area. They further explained that the purpose of literature review which was to demonstrate to the reader that the existing body of knowledge and ideas, in the form of theoretical claims, have already been proposed on a particular topic. Therefore, conducting a literature review was a crucial step in study as it helped the researcher gain a deeper understanding of the research topic and also how other researchers approach related studies. Moreover, it provided an understanding of the key issues to be identified and the gap between what has been done and what needs to be done on the research topic. In this research, the literature was reviewed using the research books, peer-reviewed articles from different journals, conference proceedings and

dissertations pertaining to the research study. A thematic approach to the review of the literature was followed and after analysing the data, pertinent themes were identified, and the literature addressed those themes that were used for the findings to be presented.

2.3 Deaf and Hard of Hearing

Deaf and Hard of Hearing are different degrees of hearing loss and they are very important to understand in this research study. According to Falvo et al.,(2020), some people prefer labels like *hearing impaired* or *person with hearing loss*. For example, often, people who have very little or no functional hearing refer to themselves as *Deaf*. Those with milder hearing loss may label themselves as *Hard of Hearing*. When these two groups are combined, they are often referred to as individuals with hearing impairments, with hearing loss, or who are hearing impaired (Disabilities, Opportunities, Internetworking, and Technology, 2024). Overall, it is critical to respect people's preferences and speak to them in a positive way taking into account their identity and communication needs. The two terms in relation to the study are discussed below.

2.3.1 What is Deaf or Deafness?

Deaf individuals worldwide consider themselves a cultural and linguistic minority. As a result, the term Deaf has come to describe a unique group with its own cultural identity and language. According to Vinoth and Nirmala (2017), the term Deaf refers to people who have severe hearing loss, often to the point that they are unable to communicate solely through auditory cues. Additionally, Deaf individuals require sign language, lip-reading, or other visual aids to communicate and access education on an equal footing with their hearing peers. Individuals who are Deaf may have limited or no speech, depending on the extent of their hearing loss and the age at which it occurred. For example, The World Health Organisation (WHO) (2024), noted that there is a spectrum of hearing loss and that people may identify in different ways depending on their own experiences, communication preferences, cultural background, and degree of hearing loss. Overall, Deaf people constitute a diverse community with unique experiences, cultures, and communication preferences.

Education for Deaf students can be optimised through various strategies and accommodations that cater to their unique communication needs. According to Allman, Wolters, and Murphy (2019), accommodations for Deaf or Hard of Hearing students can be categorized into visual and aural types. Visual accommodations rely on a person's sight; aural accommodations rely

on a person's hearing abilities. For example, Visual accommodations include sign language interpreters, lip reading, and captioning. Aural accommodations include amplification devices such as FM systems (Seol & Moon, 2022). FM Systems are assistive listening devices (ALDs) it is to enhance communication, particularly in tough or noisy settings. These devices can be used either independently or alongside cochlear implants and hearing aids to enhance sound clarity. By acknowledging and addressing the distinct learning needs and preferences of Deaf students, educators can foster inclusive learning environments where all students have the opportunity to succeed and achieve their full potential.

2.3.2 What is Hard of Hearing?

Hard of Hearing refers to a hearing impairment that can be either permanent or fluctuating, which negatively impacts learning but is not categorized under the Deaf definition (Falvo, Scatalon & Barbosa, 2020). Bowen & Probst (2023) emphasize that individuals who are Hard of Hearing experience varying degrees of hearing loss, ranging from mild to moderate to severe. People who are Hard of Hearing may hear only specific frequencies or sounds within a certain volume range. Although they may benefit from assistive listening devices, hearing aids, or cochlear implants that amplify sound, these devices might not provide them with complete access to spoken language (Seol & Moon, 2022). For example, a person with mild hearing impairment may have problems understanding speech, especially if there is a lot of noise around, while those with moderate deafness may need a hearing aid. Overall, Hard of Hearing individuals navigate their environment using a mix of sign language, written or spoken language, and technology, within the Deaf community. Recognising and respecting Deaf culture and communication preferences is crucial for fostering inclusivity and ensuring equality for Hard of Hearing individuals in all areas of society.

2.4 The history of Deaf Education in South Africa

The history of Deaf education is a complex narrative marked by different transformations in policies, societal attitudes, and pedagogical practices. In South Africa, like several other countries, education was established on the concept of exclusion, where only normal students were allowed into full-service schools (Christie, 2020). Therefore, before 1994 Deaf or Hard of Hearing students were not supported in the South African education system. The Education system was structured on apartheid policies, which separated schools and Institution of Higher Learning for different races. For example, there was a separate Bantu Education for

the Blacks, Indian Education and White Education system for (Bell & Swart, 2018; Shpigelman et al., 2022). These differentiated education systems resulted in disparities in terms of funding, governance and access. This view was supported by Kelly et al., (2020) who further pointed out that the former education system caused some students to have better access to school and support while creating obstacles for other students to grow and learn. Together these studies outline that South Africa's previous educational system entrenched structural inequalities that disadvantaged Deaf and Hard of Hearing students, especially those from underprivileged backgrounds.

The provision for specialist education, including education for Deaf and Hard of Hearing students, varied significantly among the different racial groups in South Africa during the apartheid era. There was no provision for Black impaired children from the preschool level. This was further exacerbated by Mpu and Adu (2021), who point out that Black Deaf or Hard of Hearing students had a much worse education than White Deaf students. For example, facilities offered to White students were superior when compared to the White Deaf community. These challenges were further echoed by a number of authors who have reported that Deaf or Hard of Hearing students were also offered different curricula that did not effectively equip them for employment or survival in a hearing world (Bell & Swart 2018; Batista & Garcia, 2023; Frumos & Rosa, 2019). This has been recognised as a key factor contributing to Deaf or Hard of Hearing students leaving school with education levels significantly lower than those of their hearing peers. (Oppong, 2018). Overall, the apartheid regime's larger racial disparities and segregationist practices were mirrored in and reinforced. Attempts to address these inequalities and create a more inclusive and fair educational system have been key objectives of educational reforms.

Teaching in Deaf education requires a unique set of skills and approaches to effectively support students who are Deaf or Hard of Hearing. To ensure clear instruction and communication, teachers should be proficient in South African Sign Language. Like all students, Deaf and Hard of Hearing students have diverse learning needs. Teachers must be familiar with assistive devices and technologies used by Deaf or Hard of Hearing students, such as hearing aids, visual alerts, and captioning tools. A study by Manga and Masuku, (2020), revealed that teachers experience specific challenges such as under preparedness to deal with Deaf or Hard of Hearing students because of their lack of adequate knowledge and training on communication, teaching and learning strategies. These findings were also supported by Kelly et al., (2020) in a South

African study that explored the educational needs of Deaf students. The authors noted that Deaf students face considerable challenges in communicating with their teachers and that teachers of the Deaf in South Africa are inadequately trained to address the specific educational needs of their students. Together these studies suggest that there is a need for ongoing educator training on communication strategies, cultural diversity and inclusive strategies.

2.5 Educational Policy and Practice

2.5.1 International policies

Over the past 30 years, inclusive policies have been implemented globally. Equal opportunities and empowerment are essential in enabling students with disabilities to engage in Higher Education. The pursuit of equal access to Higher Education for all students has served as a unifying goal. In the United States, for instance, Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 require Higher Education Institutions to make their facilities and programs accessible to Deaf or Hard of Hearing students (Albash, 2023). However, the National Deaf Center on Postsecondary Outcomes (2019) reports that, despite these laws and the court rulings that uphold them, there remains a 15.2% gap in 4-year degree completion between Deaf and Hard of Hearing individuals and their hearing counterparts. Conversely, Lane (2018) argues that although the needs and rights of students with disabilities in Institution of Higher Learning are formally acknowledged, research indicates that there is still a significant discrepancy between the support and accommodations that are actually provided and the accommodations that are mandated by law. Overall, Institution of Higher Learning have been slow in including student's voices in policy-making. This process potentially could improve outcomes for parties, students and Institutions of Higher Learning.

In order to remain competitive globally, Arab countries must support all citizens in their pursuit of Higher Education, which contributes to a better quality of life. Deaf or Hard of Hearing individuals should be treated as equals in efforts to increase Higher Education attainment, enabling them to reach their full potential and contribute to their countries' economic development. Albash (2023) points out that countries in the Middle East, particularly Arab States, have signed international treaties and conventions related to the rights and inclusion of Deaf and Hard of Hearing students. Furthermore, the Human Rights Commissioner (2006) emphasizes that many Arab nations have also ratified the Convention on the Rights of Persons

with Disabilities, which guarantees that individuals with disabilities, including those who are Deaf or Hard of Hearing, have equal access to higher education. However, Saad and Borowska-Beszta (2019), draw our attention to a number of cultural, economic, political, social, and geographic barriers that the Arab world must overcome in order to effectively implement these inclusive laws. Deaf and Hard of Hearing students have additional obstacles to receiving a sufficient and accessible education due to the region's current teacher education curriculum. Additionally, Qabeel (2018) mentions that education of specifically Deaf and Hard of Hearing students in Arab countries is often limited to the secondary level. Furthermore, when Deaf and Hard of Hearing students gain admission to Institution of Higher Learning, they frequently find it challenging to thrive because their K-12 education did not adequately prepare them for it. K-12 education refers to the educational system encompassing kindergarten through 12th grade. Overall, it has long been observed that Deaf and Hard of Hearing students face significant delays in educational attainment. This remains a challenge, despite the enactment of legislation in many countries aimed at protecting the rights of these individuals.

2.5.2 Education Policies in Sub-Saharan African Countries

In a Sub-Saharan African country like Malawi policies and practices regarding Deaf or Hard of Hearing at Institution of Higher Learning differ significantly. The country's commitment to equal access to and inclusion in education for children with disabilities is reflected in the National Policy Guidelines on Special Needs Education (2007) and the National Policy on the Equalisation of Opportunities for Persons with Disabilities (2006), (Eide & Munthali, 2017; UNICEF, 2020). Banks et al. (2022) published a paper in which they described experiences of Inclusive Education among students with disabilities in Malawi. The study points out that although legislation and inclusive education policies protecting the rights of the Deaf and Hard of Hearing exist, their implementation and enforcement are inconsistent. This is due to differences in resources, cultural attitudes, and government priorities. For example, this research study found disabling environments, including the lack of resources for inclusive education, inaccessible teaching materials, insufficiently trained educators and prejudiced views towards disability, were major barriers preventing students with disabilities from attending and progressing in an educational environment. These factors also affected their learning and social experiences at educational institutions. Additionally, this study found that legislation and inclusive education policies do not always extend specifically to Deaf or

Hard of Hearing individuals. Overall, even though there is a strong legislative basis for inclusion in education, gaps in implementation remain.

2.5.3 National Policies for Deaf and Hard of Hearing

2.5.3.1 The South African Disability Act

In South Africa, the rights of persons with disabilities, including those who are Deaf or Hard of Hearing, are protected under various laws, including the South African Disability Act. This act ensures that Deaf and Hard of Hearing students have access to equal education, accessibility to Higher Institution of Learning and accommodations such as sign language interpreters and assistive learning devices. Biermann (2016) draws on the South African disability act to ensure that persons with disabilities have equal chances, which will increase their independence and advance their integration into society as a whole. However, Lourens et al., (2016) argue that Deaf or hard-of-hearing students still currently face a number of obstacles despite the South African Disability Act. Similar sentiments were shared by Dreyer, et al., (2020), who conducted a study on the implementation of policy by researching the lived experiences of students with disabilities studying at an institution of Higher Learning. Results revealed that there were gaps in policy implementation. Overall, while South Africa has made strides in promoting disability rights through legislation and policy frameworks, there are still significant challenges in implementation and achieving meaningful outcomes for persons with disabilities. Continued efforts are needed to address these challenges and ensure that disability policies translate into improved quality of life, equal opportunities, and full inclusion for all persons with disabilities in South Africa.

2.5.3.2 White Paper 6

Since 1994, when South Africa entered the post-apartheid era, new laws and policies on inclusive education have strongly emphasised equity, equality, and human rights as outlined in the country's constitution. Consequently, in 2001 a White Paper on developing an inclusive education and training system was released (Department of Education, 2001). It recognises the inadequacy of the educational system in addressing the obstacles to learning and growth encountered by students. This includes a range of learning demands brought on by language, socioeconomic and disabilities. According to Engelbrecht (2018), on inclusive education implementation in South Africa, despite the creation of inclusive education policies, it is still

challenging to create successful inclusive Institution of Higher Learning due to complex interrelated issues. These issues include lack of financial and human resources, for example effectively trained teachers, lack of textbooks, and overcrowded lecture rooms which play a dominant role in the development of effective inclusive institutions of Higher Learning. Furthermore Selepe, (2022) argues that institutional policies for Deaf and Hard of Hearing students in South Africa requires a critical examination. This is to pinpoint any policy inadequacies pertaining to Deaf and Hard of Hearing students. In conclusion, White Paper 6 provides a comprehensive framework for creating an inclusive environment for Deaf and Hard of Hearing students in Institutions of Higher Learning. By implementing the recommendations of this policy, Institution of Higher Learning can ensure that Deaf and Hard of Hearing students have the necessary support and resources to succeed academically and socially.

2.6 How Deaf or Hard of Hearing preservice teachers learn?

The need for accommodation and learning resources for Deaf or Hard of Hearing preservice teachers can vary by the type and level of hearing loss. Amplification, which refers to room assistive listening devices such as hearing aids and cochlear implants, are required to intensify sounds during lectures for better efficiency and support for Deaf or Hard of Hearing preservice teachers (Allman et al.,2019). Deaf or Hard of Hearing preservice teachers who do not use or do not benefit much from amplification rely more on visual information. Therefore, they use sign language, reading text or lip-reading (Allman et al.,2019). When visual and auditory environmental demands are satisfied in the lecture room, Deaf or Hard of Hearing preservice teachers effectively learn. Opong et al., (2018) claims that Deaf or Hard of Hearing students may not be able to reach their full potential where teachers lack the abilities needed to function in a visual and auditory setting. Learning in a visual environment and learning in an auditory environment are discussed in the literature below.

2.6.1 Learning in a visual environment

To ensure the success and learning of every Deaf or Hard of Hearing student, the lecture room environment must be optimised to make the visual elements accessible and minimize distractions. A visual environment for Deaf students is an environment designed to accommodate and enhance their educational experience by utilising visual means of communication and learning. For instance, Allman et.al., (2019) assert that Deaf or Hard of

Hearing students require sign language interpreters, facial expressions and gestures, or lip-reading to access lecture room materials. Additionally, Vinoth and Nirmala (2017) emphasise that a sign language interpreter is an essential member of the inclusion team, actively participating in the daily activities of the lecture room. For effective learning, students need to be able to see the teacher or sign language interpreter to interpret key nonverbal cues such as body language and facial expressions. The accessibility of Deaf or Hard of Hearing students relies on carefully planned seating arrangements that provide a clear line of sight to the instructor, interpreter, and any visual aids used in the lecture room (Frumos & Rosa, 2019). Overall, these studies have not shown whether Institution of Higher Learning provide a visual environment for Deaf or Hard of Hearing students thus more research is necessary to understand these experiences.

2.6.2 Learning in an auditory environment

A foundation for effective learning is laid by creating an environment that is both adaptable and inclusive. An auditory environment refers to a setting designed to support and enhance the auditory experiences of individuals, typically emphasising sound as the primary means of communication and information delivery (Allman et al., 2019). In educational contexts, an auditory environment is structured to optimize listening conditions and facilitate learning through auditory channels. Small electronic devices such as Cochlear implants (CIs) and hearing aids are used to *provide a sense of sound to Deaf or Hard of Hearing* students. Seol and Moon (2022) found that *this does not* restore normal hearing, but it can help Deaf or Hard of Hearing students to understand speech with less reliance on lip reading. These personal amplification systems used can help Deaf or Hard of Hearing students learn better. Most Assistive Listening Device (ALD) systems use a microphone or transmitter placed near the instructor's mouth to transmit their voice, either wirelessly or via cable, to a receiver worn by the student. By positioning the microphone close to the instructor, the ALD system ensures clear sound transmission over distances, eliminates echoes, and minimizes background noise. Overall, Assistive Listening Devices have proven to be an effective teaching tool for students with hearing loss. Providing a good listening environment can have a major effect on the student's academic achievement.

A teacher for Deaf or Hard of Hearing students has to gather an educational audiologist's information before designing the ideal seating arrangement for a student. The goal is to determine how each student can access spoken language and manage background noise to

create an optimal auditory learning environment (Allman et al., 2019). The teacher must also implement accommodations, such as turning off projectors and noisy equipment when not in use, reducing noise from fans and heating units, and adding carpets or rugs to absorb sound, in order to create an ideal auditory environment for Deaf or Hard of Hearing students (Allman et al., 2019; Werfel & Hendricks, 2016). Overall, Institution of Higher Learning have not shown any monitoring of auditory settings for Deaf and Hard of Hearing students and thus it is necessary to investigate this phenomenon.

2.7 Teaching resources provided for Deaf and Hard of Hearing students

The philosophy of inclusive education holds that an educational system must be flexible enough to accommodate the diverse needs and goals of students in order to provide equal opportunities for all. It is vital to explore the experiences of disabled students, particularly Deaf or Hard of Hearing preservice teachers at an Institution of Higher Learning. This is because Shpigelman et al. (2022); Frumos and Rosa, (2019) argues the dysfunction of disability centre's at Higher Education Institutions. Therefore, students with disabilities have challenges including communication barriers and stigma in Higher Education Institutions. Overall, Recognising and meeting the specific needs of Deaf and Hard of Hearing students can foster a more inclusive and supportive university experience.

Deaf students at Institution of Higher Learning often have unique experiences shaped by their access to resources and interactions with peers. Data from several sources have identified that very limited resources and support is provided to Deaf or Hard of Hearing students who are accommodated in some Institution of Higher Learning (Bell & Swart, 2018; Makiwane, 2018). Similar sentiments were also shared by Oppong (2018) who explained that Deaf or Hard of Hearing students are often excluded and ignored in different Institutions of Higher Learning. Therefore, Deaf or Hard of Hearing students who were found to be struggling academically are mostly those who were not given the resources and support that they needed to learn. Oppong et al., (2018) who examined the academic experiences of Deaf or Hard of Hearing students at the Institutions of Higher Learning of Education revealed that students who receive resources and support generally perform well and finish their courses, whereas those that are not supported typically lose motivation and drop out. Frumos and Rosa (2019) draws our attention that many Institution of Higher Learning lack teaching and learning resources including sign language interpretation and note-taking devices that are important for learning. Therefore, the failure rate is very high with few Deaf or Hard of Hearing students

graduating (Makiwane, 2018). Overall, the experience of Deaf and Hard of Hearing students with regard to support services in Higher Education is a complex phenomenon and little research has been conducted in this regard. Therefore, this study aimed to fill a significant gap in the research, contribute to the development of new theory, and identify issues for future research initiatives.

2.8 Teaching Deaf and Hard of Hearing students

Teaching Deaf and Hard of Hearing students requires specific strategies and resources to ensure an inclusive and effective learning environment. Most teachers believe that Deaf or Hard of Hearing students should have the chance to learn alongside their hearing peers. According to Allman et al., (2019), there were insufficient strategies and adaptations made to the general education lecture room to make it accessible to students who are Deaf or Hard of Hearing. Many teachers lack the knowledge and abilities needed to work with Deaf or Hard of Hearing students (Alasim, 2018). According to Mbuva, (2019) who conducted a study to support Deaf and Hard of Hearing students also shared similar sentiments. The findings of this study showed that students did not receive sufficient support from their lecturers. Furthermore, the study recommends that lecturers should be trained on how to teach and support students with disabilities as this will enhance the quality of teaching and learning for these students. Overall, the ability of educators to teach students who are Deaf and Hard of Hearing is essential for fostering inclusive lecture rooms and guaranteeing fair access to education.

Teaching students that are Deaf and Hard of Hearing presents with unique difficulties. Several studies echo that teacher face many challenges when teaching Deaf and Hard of Hearing students (Ngobeni et al.,2020; Manga & Masuku, 2020). For example, many teachers lack the training necessary for Deaf and Hard of Hearing education, including sign language proficiency, familiarity with assistive technology, and inclusive teaching techniques. Overall, it is vital for educators to prioritise inclusive education and provide the support and resources needed. This guarantees that Deaf and Hard of Hearing students have the same access to educational opportunities and can achieve their full potential.

The goal is to create a supportive environment that enables teachers of the Deaf to flourish in their roles and make valuable contributions to their learning communities. Lissi et al. (2017) conducted a study with the objective of analysing the learning context of students who

are Deaf and Hard of Hearing. Results reveal that professional development and assistance from experts in the field of Deaf Education are crucial for teachers. This can improve a teacher's ability and confidence in class when dealing with Deaf and Hard of Hearing students. To sum up, providing teachers with the essential knowledge and skills to teach effectively enables Deaf and Hard of Hearing students to reach their full academic and social potential.

2.9 Theoretical framework

This study used Sociocultural Theory of Cognitive Development, which was developed by Lev Vygotsky's in year 1962 as a theoretical framework (Khalid, 2018). Russian psychologist and educator Lev Vygotsky created this theory regarding how social interactions affect cognitive development (Daniels, 2017). The theoretical framework explored interactions and educational experiences of Deaf and Hard of Hearing preservice teachers.

2.9.1 An overview of Vygotsky's Sociocultural Theory of Cognitive Development

An outline of Vygotsky's (1962/1978) Sociocultural Theory of Cognitive Development is provided in this section. Negueruela-Azarola and García, (2016), Ghani et al., (2022) mentions that Russian psychologist Lev Vygotsky made significant contributions to education and second language acquisition specifically through his writings. Rublik (2017) claims that Vygotsky was the pioneer of the Sociocultural Theory of Cognitive Development, and his writings recognize the impact of one's upbringing and culture on learning. According to Vygotsky, knowledge is social in nature and is created by children interacting, communicating, and working together in social contexts (Rubtsov, 2020). Similar sentiments are shared by Khalid (2018) who mentions Vygotsky believed that social interaction fosters cognitive development and social connection with others is a necessary component of intellectual development.

Rublik (2017) mentions that Vygotsky's (1978) Sociocultural Theory of Cognitive Development pays attention to the relationship between teaching and development. I chose this theoretical framework to help to understand how Hearing students and Deaf or Hard of Hearing students interact and participate in the lecture room of Institutions of Higher Learning. Moreover, this study also seeks to apprehend the type of teaching strategies that lecturers use to convey information and encourage student participation. The role of the teacher is of vital importance for the learning experiences of Deaf and Hard of Hearing

preservice teachers since the teacher is seen as the one who guides and facilitates learning in the lecture room. This theoretical framework is relevant for this study as it explores Deaf or Hard of Hearing students learning experiences in an Institutions of Higher Learning. Additionally, Vygotsky's sociocultural theory of Cognitive Development takes into consideration the multicultural and multilingual nature of a teaching environment (Teemant, 2018). This is fitting for the study since the focus is on one particular Institution of Higher Learning who have students that are multicultural and multilingual. Therefore, this theoretical framework works as a guide to help Deaf or Hard of Hearing students in a multicultural context.

2.9.2 Key concepts in the Sociocultural Theory of Cognitive Development

The Sociocultural Theory of Cognitive Development is based on a few key notions (Daneshfar & Moharami, 2018 and Pathan et al., 2018). When considering Deaf and Hard of Hearing students, several key concepts of sociocultural theory are particularly relevant: the zone of proximal development, social interaction, collaboration, cultural context and mediation. These concepts are interconnected and demonstrate that education is a collaborative process between teachers and students to accomplish the shared objective of teaching and learning. They also clearly outline the role and duty of the teacher in involving students in the active construction of knowledge within their sociocultural context by using tools.

The subsequent sections will discuss each of these major concepts of sociocultural Theory of Cognitive Development in detail. Their discussion supports the researcher's decision to use the Sociocultural Theory of Cognitive Development as a prism through which to examine the learning experiences of Deaf and Hard of Hearing preservice teachers in an Institutions of Higher Learning.

2.9.2.1 Social interaction

Students are faced with a variety of tasks and questions in the sociocultural environment. According to Bodrova and Leong (2024), the child is entirely dependent on other people, particularly his parents, who make decisions and teach them the right and wrong ways to do things. These are initially expressed through language. Children learn things, first through their interactions and relationships with other people (Maflah, 2023; Zhou, 2024). They then internalize this knowledge and add their own values to it. This shift from social to personal

attributes involves more than just copying; rather, it involves applying the lessons gained from the interaction to one's own personal ideals. Throughout the learning process, children not only mimic what their teachers have taught them, but they also transform it (Rublik, 2017). This idea holds that learning occurs because of the dynamic interaction that takes place between teachers and students.

Ngobeni et al., (2020) draws our attention to Deaf and Hard of Hearing students' social interaction. They state that Deaf and Hard of Hearing students are bilingual since they grow up in a hearing world and use sign language as the principal to communicate. Allman et al., (2019) further illustrates they have a sufficient command of the ability to lip-read spoken language which helps them when they experience communication breakdown. Furthermore, Hall et al., (2019) mention that teachers typically use spoken language to demonstrate and clarify the information covered in class. This can be a major challenge to Deaf and Hard of Hearing students since teachers cannot use sign language to communicate with these students.

Opping (2018) found that in situations where Deaf or Hard of Hearing students do not understand, this communication barrier can cause some students to underperform academically. In concurring with this idea Mapepa and Magano, (2018) argues that the lack of sufficient sign language is a significant barrier to teaching and learning for Deaf and Hard of Hearing students in South Africa. In addition, studies revealed that there is a lack of in-service training in SASL for teachers (Bell and Swart, 2018). This can be a barrier to Deaf and Hard of Hearing students since lecturers cannot use sign language to communicate with these students. This causes gaps in their learning as a result Deaf or Hard of Hearing students perform poorly or drop out (Bell & Swart, 2018; Opping, 2018). Sociocultural theory accentuates the importance of social interaction in cognitive development. For Deaf and Hard of Hearing students, who may face communication barriers due to hearing loss, fostering meaningful social interactions is essential.

2.9.2.2 Peer Collaboration

Peer collaboration is an idea that goes along with social contact. Peer collaboration is important for learning development, as peers can shape each other's interpretation of events. In order to complete tasks that they otherwise would not be able to finish alone, students rely on one another (Novita et al., 2020). Vygotsky (1978) perceived peer collaboration in a social setting as a way to support student's cognitive development. He thought that more capable

peers could help each other to negotiate meaning in order to find a solution to an issue in the lecture room. Students can achieve their learning needs in the lecture room by working together with their peers and the teacher. Peer collaborative learning environments, where Deaf and Hard of Hearing students can engage with both deaf and hearing peers, can provide opportunities for language development and cognitive growth.

Aristizábal et al. (2017) carried out a study that examined the use of emerging technologies to improve collaborative environments and the research done on the application of collaborative learning, in the education of Deaf and Hard of Hearing students. The study's results demonstrate the beneficial effects of utilising collaborative learning in conjunction with various forms of technology for educating the Deaf or Hard of Hearing students, including enhanced literacy, communication, and sign language abilities. Language is central to sociocultural theory, serving as both a tool for communication and a medium for thought.

2.9.2.3 The Zone of Proximal Development (ZPD)

Yusuk (2018) explains that the zone of proximal development refers to the gap between what a student can do on their own and what they can accomplish with guidance or support. This concept is grounded in the idea that learning always occurs before development within the ZPD. Yusuk (2018) viewed the learning process to occur when the student is capable of doing a more challenging task independently as a result of guidance from a more competent individual. One of the key concepts in Vygotsky's (1978) sociocultural theory of cognitive development is the Zone of Proximal Development (ZPD). This idea is significant because it gives teachers insight into what a student can do through mediation. This also enables them to support their independent progress and serve as a guide for a student's development. A study by Silalahi (2019) identified six factors essential for developing a student's potential: assistance, mediation, cooperation, imitation, target, and crises. Overall, when assistance from a more capable individual is provided, and attention is given to these six factors, a student will be able to accomplish tasks they can almost do independently.

Potier and Givens (2023) state that for Deaf and Hard of Hearing students, ZPD acknowledges that their development may be impacted by their access to language, particularly sign language, and the support they receive in acquiring language skills. Teachers and peers play crucial roles in scaffolding their learning within this zone. For Deaf and Hard of Hearing students, the availability and proficiency in a visual language like American Sign

Language (ASL) or South African sign languages (SASL) are pivotal. Rublik (2017) found that the quality and richness of language input significantly influence cognitive development, including problem-solving skills and abstract thinking.

2.9.2.4 Mediation and Meaning

Mediation is a major theme that cuts across Vygotsky's (1978) sociocultural theory of cognitive development. It has an impact on the writings of educators, psychologists, and other professionals who work with individuals who have special needs. According to Zayyad (2020) mediation is when activities that are socially meaningful and natural behaviours are impulsively transformed into higher mental processes through the use of instruments or tools. Kozulin (2018), further mentions that Vygotsky proposed that cognitive development is mediated by cultural tools, including language, symbols, and artifacts. Similarly, Alkharji and Cheong (2022) states that for Deaf and Hard of Hearing students, appropriate mediation involves providing accessible resources and technologies that support their unique communication needs. This includes assistive devices, captioning, or technologies that facilitate communication via sign language or written language.

2.9.3 Limitations of Vygotsky's Sociocultural Theory of Cognitive Development

In this theory, the idea of zone of proximal development highlights the fact that educators are in charge of arranging student's interactions in the lecture room (Khalid, 2018). In addition, they are responsible to guide the students through the tasks associated with learning a concept. A limitation of Lev Vygotsky's Sociocultural Theory of Cognitive Development theory is it does not seem to apply to all social and cultural groups (Daniels, 2018). That is, social groups may not be whole and equal with all students being able to gain the same meaning from engagement. Sociocultural theory underscores the importance of social interaction in learning. However, Deaf and Hard of Hearing students may face barriers in peer interaction due to communication differences or social isolation. In educational settings where these students are in the minority or lack peers who share their communication mode, opportunities for meaningful social interaction and collaborative learning may be limited. The theory emphasises the pivotal role of language in cognitive development. However, for Deaf and Hard of Hearing students, access to language can be limited or challenging due to barriers in communication. Traditional language models may not fully accommodate sign

language or other alternative communication methods used by this population, potentially hindering their cognitive development.

Vygotsky's theory acknowledges the influence of cultural context on cognitive development. However, it may overlook the impact of socioeconomic factors on the experiences of Deaf and Hard of Hearing students. These individuals may face additional challenges related to access to resources, educational opportunities, and support services, which can significantly affect their cognitive development beyond the cultural context alone.

2.9.4 The relevance of the Theory of Cognitive Development to this study

Vygotsky's Sociocultural Theory of Cognitive Development is pertinent to my study because the key concepts clearly articulate the experiences of Deaf and Hard of Hearing preservice teachers in an Institution of Higher Learning. By considering these key concepts within the framework of sociocultural theory, lecturers can better understand and support the cognitive development of Deaf and Hard of Hearing preservice teachers. Additionally, lecturers can foster environments that facilitate learning, social interaction, and cultural identity formation. Vygotsky's perspective showed that it is through carefully planned activities with appropriate materials and accommodations for Deaf and Hard of Hearing students that the teacher is able to develop the student from the actual zone of development to the zone of proximal development. All students should feel part of the learning process as their sociocultural experiences are used in their learning. The researcher maintains that the use of Vygotsky's Sociocultural Theory of Cognitive Development for this study as it emphasises the significant role lectures play in facilitating student's construction of new knowledge in the lecture room and helps make sense of Deaf and Hard of Hearing preservice teacher's experiences.

2.9.5 Conclusion

This section outlined needs and issues that Deaf and Hard of Hearing preservice teachers face at an Institution of Higher learning. The literature review provided insight and understanding into inclusive education internationally, nationally and locally. This chapter explored research that was conducted on inclusion and its implications related to the South African context. Research highlights, that framing effective law practices are imperative in developing an environment that is conducive to learning, particularly for Deaf and Hard of Hearing Preservice teachers. It is, therefore, important for legislation to monitor education for students with disabilities especially Deaf and Hard of Hearing students.

This study is guided by worldwide experiences of how Deaf and Hard of Hearing students learn. Research undertaken internationally, nationally and in neighbouring South Africa particularly, have been useful to substantiate the key issues raised in the literature. The teacher is seen as an important player in ensuring that student's needs are met. The literature reviewed has shown that the teacher requires specific skills and knowledge to be able to benefit Deaf and Hard of Hearing students to function effectively.

This study is based on the belief that clear and effective instructional practices on Deaf and Hard of Hearing preservice teachers are important. Positive educational experiences are a strong predictor for academic success. The information gathered from this study can join the vast literature from other countries that explores the experiences of Deaf and Hard of Student preservice teachers. The next section presents Vygotsky's sociocultural theory, a theoretical framework that guides the study. Vygotsky's socio-cultural theory is discussed at length as it clearly unpacks the role of social interaction and cultural context in their development and learning.

The conclusion that one may draw from Vygotsky's Sociocultural Theory of Cognitive Development is that learning and teaching is a socially mediated process where a teacher provides the needed support to a student. This can help them develop their zone of proximal development and become capable of finishing tasks without any help, leading to the building of knowledge. Moreover, this theory highlights the dynamic role the teacher plays in adapting the curriculum and instruction to better meet the student's sociocultural circumstances. For Vygotsky, instructional practices in a lecture room involve teachers and students working together through exploration and collaboration in a competency-based curriculum.

2.9.6 Chapter Summary

This chapter provided important definitions of terms in relation to the study, history of Deaf education and educational policy and practice that directly affects Deaf and Hard of Hearing preservice teachers. In addition, this chapter also discussed how Deaf or Hard of Hearing students learn in a visual and auditory environment, teaching and learning resources provided in Institution of Higher Learning and teacher's knowledge about teaching Deaf and Hard of Hearing students. Vygotsky's Sociocultural Theory of Cognitive Development was the theoretical framework that was utilised and presented in this study. The following chapter outlines the methodology and research design.

Chapter 3

Research Methodology

3.1 Introduction

This study seeks to explore opportunities and challenges that Deaf or Hard of Hearing preservice encounter in their learning journey. The previous chapter presented existing literature to explore Deaf or Hard of Hearing preservice teacher's learning experiences in Institution of Higher learning. The sociocultural Theory of Cognitive Development developed by Lev Vygotsky was presented as the relevant theoretical framing of the study. This chapter presents methods and procedures that were followed to answer the research questions of this study. It discusses the research design, research paradigm, as well as the research approach utilised in this study. Additionally, research methodology, sampling procedures and data generation methods are discussed. In the data analysis process, the issues of trustworthiness, including credibility, dependability, confirmability, ethical considerations, and limitations of the study are presented.

3.2 Research design

The research design is the framework used to gather and analyse data to address the research questions. (Bertram & Christiansen, 2020). This study adopted an exploratory case study research design to collect data from the participants. According to Cohen et al. (2018) a case study is identified as a systematic and in-depth research of one particular case in its context. Exploratory case studies investigate situations where the case being studied does not have a clear or definitive set of outcomes. (Yin ,2018). Qualitative studies typically use a case study design to gain a deeper insight into the phenomenon being investigated. The exploratory case study design became suitable for this study to obtain a rich and thick description of Deaf and Hard of Hearing preservice teachers learning experiences in an Institution of Higher Learning.

The choice of this design abled the researcher to study the subject in its natural setting, thereby getting a holistic picture of the case being studied. In this study, this exploratory case is a group of Deaf or Hard of Hearing preservice teachers enrolled in a particular Institutions of Higher learning. It allowed the participants to explore the situation they are facing (Kvale

et al., 2018). Moreover, allowed capturing the reality of the participants lived experiences and thoughts about their experiences in an Institution of Higher Learning.

3.2.1 Research Paradigm

According to Bertram and Christiansen (2020), a research paradigm is a style of thinking, seeing, describing and conducting research. A research paradigm is used to find the meaning of the study. Creswell & Creswell (2018) describe the concept of a research paradigm as an individual's perspective of the world and how they interpret it. A research paradigm is also defined as the framework that is directed and, or, influenced by belief systems held by people on how the world should be viewed (Denzin & Lincoln, 2018). In essence, a research paradigm has to do with people's assumptions about a particular phenomenon.

In their work in social science research, Denzin and Lincoln (2018) state four categories to explain people's beliefs and views about how the world should be studied to gain an understanding of the different phenomena in it. These are: Ontology (the nature of reality), epistemology (how we acquire knowledge, truth, or reality), methodology (research design, methods, approaches, and procedures), and axiology (ethical concerns/ethics). These concepts will be discussed in detail below.

Ontology is a branch of philosophy that deals with the assumptions people make to believe that something is meaningful or real (Yin, 2018). It refers to the fundamental nature or essence of a social phenomenon. Ontology essentially addresses the question, "What is?" Denzin and Lincoln (2018) describe it as a naive realist ontology, meaning that through our senses, we directly perceive the world as it is, and our claims to knowledge about it are generally justified. This system is done through controlling objects of a world of material objects we live in. By use of meaningful acts and human interactions, reality can be examined and constructed. There are multiple realities and in this study an exploration of these realities was done through interacting and observing Deaf and Hard of Hearing Preservice teachers. This study explored how Deaf and Hard of Hearing preservice teachers make sense of their social worlds in their natural setting through their everyday routines and conversations in their lecture rooms.

Epistemology is used to explain how individuals come to know something and how they determine what is true or real (Creswell & Creswell, 2018). It focuses on the nature of human knowledge and understanding, exploring how a researcher or knower can acquire knowledge

to expand, enhance, and deepen their comprehension within their research field. The emphasis is on how knowledge can be created, acquired and communicated to other people. It answers the question, what it means to know. Understanding events requires interpreting a world that is shaped by social settings. Research participants socially create knowledge through their experiences in the real world or in natural environments. Similarly, student's explanations and interpretation of their experiences in this study were understood through their interaction and actions as observed by the researcher.

Cohen et al. (2018) also identified methodology as how researchers go about obtaining knowledge about the world as it was explained above. This includes how they collect data depending on their views of what exists and what can be known, how they describe and explain the phenomena (Kvale et al., 2018). It is the plan of action in acquiring knowledge and the methods used to acquire knowledge about the world. The major question in this category is: how can the researcher go about finding out what they believe can be known about a particular phenomenon? Consequently, it addresses questions such as why, what, from where, when and how data was collected and analysed. In this study, the process of data collection was collection was through semi-structured interviews, reflective journals and unstructured lecture room observations.

The axiology of the interpretive paradigm highlights the importance of visible values. Denzin and Lincoln (2018) suggest that a balanced axiology assumes that the research outcomes will incorporate the values of the researcher, aiming to present a fair and comprehensive account of the findings. In this study, the researcher developed good relations with the participants so that they can feel comfortable enough to explain their learning experiences. The researcher developed good relations with the participants so that they can feel comfortable enough to explain their learning experiences.

Cohen et al. (2018); Guba and Lincoln (2005) point out that these paradigm assumptions are closely related to each other. By analysing the tools and methods used in data collection and analysis, it becomes possible to identify the ontological and epistemological assumptions that guide the research. According to these researchers, the study's design is influenced by all of these assumptions. Based on this knowledge about paradigm, the researcher found the interpretive research paradigm most suitable for this study.

3.2.2 Interpretive paradigm

In this research study, an interpretive paradigm was used. Interpretive refers to theories about how we gain knowledge of the world through understanding people's interpretation of their actions (O'reilly, 2012). According to Guba and Lincoln (2005) reality is subjective and differs with individuals. They maintain that reality is mediated by human senses and that without full consciousness of these senses, the world has no meaning. In explaining the same concept, Crotty (2003) and Flick (2018) argues that there is no definite reality as it is individually constructed and this leaves us with as many realities as the individuals who construct them. The interpretive paradigm was utilised to investigate the learning experiences of Deaf or Hard of Hearing preservice teachers in an Institution of Higher learning. The paradigm helped in comprehending the subjective aspects of human experience (Cohen et al., 2018). The researcher believed that the interpretive paradigm was more appropriate for this study as it seeks to understand the phenomenon in a real-life setting; exactly how the participants experienced it. The interpretive paradigm also allowed the researcher to focus on understanding what actually happens in a given context, how it happens and how the people interpret what happens in their social context.

3.2.3 Research approach

Certain types of social research problems call for specific approaches. There are several research approaches, each with distinct methods, aims, and application. Each approach serves different goals and can be tailored depending on the nature of the research question, available resources, and the context of the study. According to Creswell & Creswell (2018) and Flick (2018) a quantitative approach is used, if the problem involves identifying the factors that influence an outcome, evaluating the effectiveness of an intervention, or comprehending the most effective predictors of outcomes. It is also the most effective method for testing an explanation or theory. Conversely, if a topic or phenomenon requires investigation and understanding due to a lack of prior study or because it involves a sample that has not been well investigated, then a qualitative approach is warranted. Particularly helpful is qualitative research in situations where the researcher is unsure of the key variables to look at. When neither the quantitative nor the qualitative approach by itself is sufficient to fully comprehend a study topic a mixed methods design is helpful.

This study utilised a qualitative research approach to gather, record, and analyse the data. The qualitative approach is appropriate for this study because the researcher intended to explore how Deaf and Hard of Hearing preservice teachers interpret their situation at an Institution of Higher Learning through their own experiences. This research focuses on the experiences of three Deaf preservice teachers at an Institution of Higher Learning. The findings therefore were not arrived at by statistical procedures or quantification but by the exploration of experiences as lived or felt by participants (Creswell and Creswell, 2018). Qualitative research considers the broader social, cultural, and institutional context. When studying the experiences of Deaf and Hard of Hearing preservice teachers, this approach considers not only the institutional policies but also the social attitudes, interactions, and individual coping strategies that shape their experiences. Overall, Qualitative research provides rich, detailed data. Interviews, reflective journals, and unstructured lecture room observations provide deep insights that quantitative surveys may miss.

3.2.4 Research methodology

Research methodology guides the entire research process. It outlines the techniques and tools used for data collection and analysis. This ensures that the data collected is aligned with the research questions and that it can be effectively analysed to draw meaningful conclusions. Similarly, Denzin & Lincoln (2018) clarifies that research methodology is the decision and procedure that the researcher considers for collecting data and acquiring knowledge about the research title. Research methodology is a structured approach to addressing the research problem. It involves examining the various steps a researcher takes to investigate their research issue.

3.2.5 Sampling of the Research Participants

Phase 1:

This study used purposive sampling to recruit participants. In qualitative research, the samples are likely to be chosen in a deliberate manner known as purposive sampling. The aim of this sampling method is to enable the researcher to choose participants based on particular characteristics or qualities that are relevant to the study's objectives (Yin, 2018). Purposive sampling aims to connect the researcher with people who are most likely to have the expertise and information needed for the study.

The criteria for the selection of Deaf and Hard of Hearing preservice teachers were that they must be currently registered by the institution of Higher Learning; they must be Deaf or Hard of Hearing and fluent users of SASL; they must also be completing second year of study onwards. This is because students from second year onwards are more experienced and familiar with their learning experiences at the institution and thus will be able to answer questions accurately. Five Deaf preservice teachers were enrolled in the Institution of Higher Learning. A total of four Deaf preservice teachers were invited to participate in the study. However, only three Deaf preservice teachers showed interest and was willing to participate in the study. There were no Hard of Hearing students currently registered at the institution of Higher Learning. All participants reside in the KwaZulu-Natal (KZN) province in which the research site is situated. The interviewees were grouped as follows: one third year and two fourth year Deaf preservice teachers who are currently studying towards their Bachelor of Education at University of KwaZulu-Natal.

Phase 2:

Approval for interacting with participants was obtained from the registrar of the Institution of Higher Learning. Thereafter, the researcher obtained information from the campus disability unit to get the number of Deaf or Hard of Hearing preservice teachers from 2nd year to the fourth year of study. The researcher extended an invitation for only Deaf preservice teachers to attend an organised meeting since, there was no Hard of Hearing students registered. During that meeting, the researcher gave them an outline of the research and also explained its purpose.

3.2.6 Data Generation Methods

Research methods are the strategies employed to carry out a research study. In a qualitative study, data collection refers to the concepts and procedures employed by researchers to produce data from a sample of data (Cohen et al., 2018). Three types of data collection techniques were used in the study. The techniques used include semi-structured interviews, reflective journals and unstructured observation with the participants.

3.2.6.1 Semi-structured interviews

The disability unit assisted with the interview venue which was based inside the institution where the participants were free to share their experiences. Denzin and Lincoln, (2018) pointed out that a non-threatening environment ensures and strengthens confidentiality. Interviews took place in a place where the participants would feel comfortable expressing their thoughts.

Interviews can take on various forms, each serving different purposes depending on the research design and objectives. According to (Bertram & Christiansen, 2020) an interview is a conversation between the researcher and the respondent. However, it is different from an everyday conversation in that the researcher is the person who sets the agenda and asks the questions. In a structured interview, questions are pre-determined and asked in a fixed order to each participant. In contrast, an unstructured interview does not follow a set format; the interviewer may have general topics in mind but allows the conversation to unfold organically.

The researcher chose semi-structured interview to conduct the study. According to (Denzin & Lincoln, 2018) semi-structured interviews used standardised questions with the flexibility to probe or ask follow-up questions. Furthermore, Semi-structured interviews permit the potentials of dialogues by allowing much more leeway for following up on whatever angles are deemed important by the interviewee. This study utilised semi-structured interviews to understand and evaluate the experiences of Deaf and Hard of Hear preservice teachers at the Institutions of Higher Learning.

South African Sign Language (SASL) is the first and preferred language for the Deaf and Hard of Hearing participants in this study. Interviews with Deaf and Hard of Hearing preservice teachers were conducted in South African Sign Language. As a researcher and a teacher in a Deaf and Hard of Hearing school, I was the interviewer, as I understand sign language and carefully listened to the interviewee's responses to make sense of the data. The participants did not give consent for the interviews to be videotaped and opted to respond to questions in writing. An interview schedule (see Appendix B) consisting of open-ended questions was used as a guide during the interview with Deaf and Hard of Hearing preservice teachers. However, additional questions were asked wherever necessary to elicit clearer information from the interviewees, for instance, when the question was partially answered.

The interview schedule was constructed in a way as to allow me to ask additional questions in order to elicit more information.

3.2.6.2 Reflective journals

Reflective journals (see Appendix C) were used as a means of data collection. Reflective journals are written records of the researcher’s thoughts, feelings, experiences, and reflections throughout the research collection process (Bertram & Christiansen, 2020). According to Yin, (2018) the recording of data should be silent partner and not call attention to itself; therefore, data was recorded without disrupting a participant’s rhythm or pace. Yin, (2018) states one of the key advantages of using this method is that the researcher gains a deep understanding into the research subjects due to the proximity to them and hence the research is extensive, thorough and accurate. Below is a template of aspects that prompted and guided the researchers thinking during the data generation process:

Table 3.1: Reflective journal guide

Source: Author

Context	Area of focus for reflection
Demographic understanding	<ul style="list-style-type: none"> • Demographic makeup of the Deaf and Hard of Hearing preservice teachers • Variations in experiences based on factors such as age, gender, ethnicity, or degree of hearing loss
Accessibility and accommodation	<ul style="list-style-type: none"> • Types of accomdations in the lecture room • Effectivity of these accommdations in the lecture room.
Communication methods	<ul style="list-style-type: none"> • Types of accommodations Deaf and Hard of Hearing students prefer • How do different communication methods impact their learning experience.

Technology utilisation	<ul style="list-style-type: none"> • Assistive technologies that support learning for Deaf and Hard of Hearing students
Faculty and staff support	<ul style="list-style-type: none"> • Interaction of staff members for Deaf and Hard of Hearing preservice teachers • The extent of Deaf awareness at institution of Higher Learning
Social integration and inclusion	<ul style="list-style-type: none"> • The extent of inclusion of Deaf and Hard of Hearing at institution of Higher Learning. • Specific challenges related to social integration
Academic success and progression	<ul style="list-style-type: none"> • Academic achievement levels of Deaf and Hard of Hearing preservice teachers. • Disparities in academic performance compared to hearing peers.
Peer relationships and support networks	<ul style="list-style-type: none"> • Deaf and Hard of Hearing preservice teachers interaction with their peers • Availability of formal or informal support networks.
Barriers and challenges	<ul style="list-style-type: none"> • Primary barriers and challenges faced by Deaf and Hard of Hearing preservice teachers
Satisfaction and feedback	<ul style="list-style-type: none"> • How satisfied are Deaf and Hard of Hearing preservice teachers with their overall learning experiences at the institution?

Long term impact	<ul style="list-style-type: none"> • What recommendations can be made to improve the overall learning environment and support mechanisms for Deaf and Hard of Hearing preservice teachers?
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Table 3.1 above shows a guide of key aspects that prompted and guided the researcher's thought process. This guide helped the researcher stay focused on the study's purpose and the objectives of the reflective journal.

3.2.6.3 Unstructured observation

Additionally, unstructured observation was also used as a means of data collection. According to Bertram & Christiansen (2020), unstructured observation refers to writing a free description of what the researchers observe. The advantage of unstructured observation as a data collection method is that it is a powerful method for gaining insight into situations. This method helped the researcher to see exactly what is really going on in the lecture room. There were field notes written. Field notes are the notes that researchers take while conducting their research in the "field," in this case, the Higher Institutions of Learning lecture room (Bertram & Christiansen, 2020, p.107).

The researcher documented a description of what was seen as advised by Bertram & Christiansen (2020, p.106). A template shown below was used to record observations of each visit to the lecture room. The researcher took notes on everything that was said and done throughout the lesson, as well as how it was conducted. The researcher did her best to record every event that occurred throughout the lesson so that she could make insightful deductions about what transpired. To support her observational notes, the researcher took pictures of important lecture room activities. The template below shows how the observation records were done.

Table 3.2: Observation record

Source: Author

<i>Date</i>	<i>Situation/context</i>	<i>Participants</i>	<i>Action observed</i>
5 August 2024	<p>Communication and Interaction:</p> <ul style="list-style-type: none"> • In the Lecture room: Observation of how Deaf preservice teachers interact with lecturers and classmates. Do they rely on sign language interpreters, speech-to-text services, or assistive listening devices (hearing aids, FM systems)? • Group Work/discussions: Are Deaf preservice teachers actively involved in group discussions and activities, or do they appear isolated or disengaged? • Access to Information: Can they easily access 	3rd and 4th year Deaf preservice teachers	<p>Students who are Deaf utilise a dictator to assist them in understanding the lecturer. They also depend on an interpreter, but on this particular day the interpreter was not present at the lectures.</p> <p>Due to large class size, Deaf students were not involved in group discussions and as a result were isolated and disengaged.</p>

	<p>instructions, discussions, and presentations? Are captions available for multimedia used in class?</p>		<p>The lesson made use of visual aids such as PowerPoint and a video. However, the PowerPoint was not designed with Deaf students in mind. It was quite lengthy. For students who are Deaf, the video did have captioning.</p>
<p>7 August 2024</p>	<p>Support Services</p> <ul style="list-style-type: none"> • Disability Services: What kinds of accommodations (interpreters, note-takers, captioning) are provided by the institution? Are they timely and consistent, or do Deaf preservice teachers have gaps in service provision? 	<p>3rd and 4th year Deaf preservice teachers</p>	<p>The services offered to Deaf students had gaps. Even though students can access services such as interpretation. On this particular day, the interpreter was not there. There was no backup strategy in place to win this. Additionally, no note-taker was visible. The lecture room was also not</p>

	<ul style="list-style-type: none"> Lecture Awareness: How knowledgeable and proactive are professors about supporting Deaf students? Do they adapt teaching styles, or ensure accessible communication? 		<p>conducive for Hard of Hearing students for e.g., there was no induction loop evident.</p> <p>Lecturers were knowledgeable about Deaf students. However, lecture support for them was very limited. For instance, their teaching methods were not modified (PowerPoints not summarised or key words were not highlighted).</p> <p>Furthermore, they were unable to use SASL to communicate with Deaf students during the lesson.</p>
7 August 2024	<p>Social Integration</p> <ul style="list-style-type: none"> Peer Relationships: Do Deaf preservice 	3rd and 4th year Deaf	In the lecture room, there were no meaningful

	<p>teachers form meaningful connections with hearing peers? Are there barriers to these relationships, such as communication difficulties or lack of awareness from peers?</p>	<p>preservice teachers</p>	<p>interactions or connections between hearing and Deaf students.</p>
<p>5 August 2024</p>	<p>Emotional and Psychological Well-Being:</p> <ul style="list-style-type: none"> • Self-Advocacy: Are Deaf preservice teachers encouraged and empowered to advocate for their own needs in academic and professional settings? How comfortable do they appear when asking for accommodations? • Stress and Frustration: Is there visible stress or frustration due to 	<p>3rd and 4th year Deaf preservice teachers</p>	<p>It was difficult for Deaf students to voice their needs due to the interpreter not being there and the lecturer not understanding SASL.</p>

	<p>barriers in communication or inadequate accommodations?</p> <p>This can include feelings of exclusion or exhaustion from navigating inaccessible environments.</p>		<p>Deaf students did seem stressed and frustrated due to barriers in communication barriers and inadequate accommodations</p>
<p>5 August 2024</p>	<p>Cultural and Linguistic Factors</p> <ul style="list-style-type: none"> <p>Deaf Culture Awareness: Does the institution recognize and respect Deaf culture, including providing resources or spaces where Deaf and Hard of Hearing preservice teachers can communicate in their preferred language (e.g., SASL)?</p> <p>Attitudes toward Deafness: Are there any observable biases or misconceptions from faculty, staff, or peers regarding</p> 	<p>3rd and 4th year Deaf preservice teachers</p>	<p>There is awareness of Deaf culture in the Institution of Higher Learning. The disability unit provides a safe space where Deaf students can communicate. There was no evidence of bias or misconceptions. However, hearing peers and staff need to learn about Deaf culture for e.g. tapping a shoulder of a Deaf person when needing their attention.</p>

	deafness or hearing loss?		
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Table 3.3: Summary of data generation procedures

Source: Author

Research Question	Data generation activities	Participants	Data Sources
What are the learning needs of Deaf or Hard of Hearing preservice teachers in an Institution of higher learning?	<p>Deaf Preservice teachers were interviewed according to the interview schedule to understand the learning needs of these students.</p> <p>The researcher observed Deaf preservice teachers in their natural setting. Lecture room observation was conducted to observe these students and lecturers in lessons to understand their learning needs.</p>	3rd and 4th year Deaf preservice teachers.	Interview Observation
How are Deaf or Hard of Hearing preservice teacher’s learning needs provided in an	In accordance with the interview schedule, preservice teachers who are Deaf were interviewed to find out how these	3rd and 4th year Deaf preservice teachers	Interview Observation

<p>Institution of higher learning?</p>	<p>students learning needs are met.</p> <p>Lecture room observation was conducted to monitor these students and lecturers during classes and gain insight into how their educational needs are met in a higher education institution.</p>		
<p>Why are Deaf or Hard of Hearing preservice teacher's learning needs provided in that particular way in an Institution of higher learning?</p>	<p>Lecture room observation was carried out to watch Deaf preservice teachers and lecturers during classes and to determine why learning needs provided in that particular way in an Institution of higher learning.</p> <p>Throughout the entire process of gathering data, the researcher maintained written records. All thoughts and emotions were documented in a reflective journal.</p>	<p>3rd and 4th year Deaf preservice teachers</p>	<p>Observation Reflective Journal</p>

Table 3.3 presents a summary of the data-collection procedure for this study. It shows the participants in the study, instruments used to gather data and what process was involved in gathering the data.

3.2.7 Data Analysis

Data analysis is an essential stage in research. This study adopted an inductive analysis approach. According to Yin (2018), the inductive analysis approach refers to analysing data without any preconceived categories or theories. Cohen et al. (2018) claim that this approach requires the researcher to approach the data analysis process with an open mind in order to identify meaningful content addressing the research questions. In the same vein, Maree (2007, p.99) states that the purpose of the inductive analysis is, “to allow research findings to emerge from the frequent, dominant, or significant themes inherent in raw data, without the restraint imposed by a more structured theoretical orientation”. This means that the researcher allows the data to speak for themselves on the matter being studied without setting preconceived ideas.

Data was best communicated in a succession of steps so that the reader may understand how one-step leads to another (Creswell & Creswell, 2018). This study used thematic analysis, which involves six steps: becoming familiar with the data, generating initial codes, identifying themes, reviewing themes, defining themes, and reporting themes. (Bertram & Christiansen, 2020).

Step 1: To familiarise myself and become acquainted with the content, the researcher began to read the written interview scripts, observation records and reflective journals.

Step 2: Next, the researcher moved on to second aspect which is coding, where significant aspects of the data that aided in comprehending the learning experiences of Deaf or Hard of Hearing preservice teachers in Higher Education Institutions were pointed out. According to (Creswell & Creswell, 2018), a coding system can be used to highlight regularities and patterns as well as topics relevant to a study. In the analysis of the transcripts, the themes and categories emerged clearly. The researcher formulated a code for each theme and category.

Step 3: Thereafter, the researcher started looking for potential themes. The biographical details were extracted from reflective journals. Themes, categories and aspects that shaped the experiences of Deaf and Hard of Hearing preservice teachers were analysed from semi-

structured interviews and unstructured observation schedule and reflective journals instruments. Examining for meaning is a crucial component of the systematic coding process (Denzin & Lincoln, 2018). The themes, concepts and categories that were explored in this study included the motivation to study Bachelor of Education at the Higher Education Institution, experiences in an academic environment, challenges that Deaf and Hard of Hearing preservice teachers faced, support services, social experiences at the Institution Higher Education.

Step 4: The researcher reviewed the themes to see if they convey a cogent tale based on participant data is part of this process.

Step 5: The researcher analysed each theme in depth to look for links between them. The themes and categories included role models, the need to improve Deaf education, university recruitment drive, support services, inclusive education, prior experience at higher education institutions, forms of assessment and timing for exams, copying strategies, hearing students' attitude and note-taking.

Step 6: Using the main topics from the report, the researcher wrote an analytical narrative concerning the body of literature already in existence.

3.3. Credibility

Since this study is qualitative, reliability and credibility are crucial. These are commonly referred to be trustworthy, which adds rigor to the research. There were certain measures the researcher followed to ensure that the findings of the study were credible and reliable. According to (Bertram & Christiansen, 2020), credibility is the degree to which the study's conclusions are true and the degree to which one may trust the researcher's interpretations and conclusions based on the observations and interviews that were done. For Denzin and Lincoln, (2018), credibility can be explained as how well the researcher's representation of the participants' views matches their own. In the researcher's understanding, credibility of a study has to do with accurately portraying the opinions of the participants in a way that would ultimately lead the participants to concur that the interpretations and conclusions are a true reflection of what was intended on that particular issue. To ensure credibility the researcher utilised the following approaches:

3.3.1 Triangulation

To ensure trustworthiness for this study, the researcher followed some of the suggestions of (Flick, 2018). Triangulation is a method used to compare findings with each other from multiple data collection sources. This enabled the researcher to see whether the data that are collected from one source confirms or contradict the data which are collected from a different source. For example, data from interviews, reflective journal and observation schedule was used to compare findings with each other.

3.3.2 Member checking

Creswell & Creswell (2018) explain that member checking is a process used to verify the accuracy of qualitative findings by returning the final report or specific descriptions or themes to the participants, allowing them to assess whether they believe the information is accurate. Participants had an opportunity to verify the data and findings made by the researcher. For example, the researcher asked participants whether the data or interpretation accurately represents their experiences or views. Questions such as “Does this accurately reflect what you meant?”; “Is there anything you would add or change?”; “Do these themes align with your experience?” were used to point out if there are any specific aspects that need clarification or confirmation and direct participant’s attention to those areas. Member validation was used in the interview process as the researcher constantly confirmed, rephrased topics and probed further in order to get a holistic picture and clear meanings of what the participants had said. Once the data collection process was complete, the researcher asked the participants to review their interviews and critique the researcher’s interpretations to clear any miscommunication.

3.3.3 Thick description

Additionally, to enhance the study's credibility, a detailed description of the lecture room observations was documented. Flick (2018) states that when qualitative researchers offer comprehensive descriptions of the setting or present multiple viewpoints on a theme, the results become more realistic and enriched. In the course of the observation, self-reflection was also done to recognise the researcher’s own bias. To ensure that bias was kept in check, a journal was kept every time a lesson observation was conducted. This journal stated clearly what was to be observed and only that was recorded as a reflection of what was happening.

3.4 Dependability

Maree (2020), state that the focus of dependability is on the methodological rigor and coherence used to produce results that the research community can accept with confidence. Accordingly, dependability refers to the quality of the integration process that occurs between the techniques used for gathering data, data analysis, and the theory developed from the data (Creswell & Creswell, 2018). To ensure the dependability of this study, the researcher provided a thorough and precise description of the research and the research methods to be used so that the reader can judge how closely ethical research procedures were adhered to.

3.5 Transferability

Transferability is the ability of the findings to be used in a similar context, providing similar outcomes (Yin, 2018). The purpose of this study is to explore the experiences of Deaf or Hard of Hearing preservice teachers in an Institution of Higher Learning, not to draw general conclusions about the experiences of Deaf or Hard of Hearing preservice experiences. The study allowed its results to be applicable to various situations in further research as transferability is ensured. Furthermore, the researcher included enough information to allow comparisons between the current study and other studies. For example, the researcher stated the inclusion criteria for participant selection which allows for future researchers to compare their own samples to see if the same dynamics might hold.

3.6 Confirmability

By addressing the researchers' influences and biases on the study, confirmability refers to the degree of objectivity in the study's findings (Cohen et al. 2018). This is accomplished by demonstrating that the study's findings are accurate and not merely the product of the researcher's imagination. In order to attain confirmability, the researcher methodically showed how the results of this study are linked to the conclusions. Using questionnaire and interview records, helped obtain confirmability. The researcher also asked the participants if the recorded transcripts accurately reflect how they saw the circumstances and experiences.

3.7 Ethical considerations

According to Maree (2020) ethics are defined as a set of widely accepted moral principles that offer rules for, and behavioural expectations of the most correct conduct towards

experimental subjects and respondents. The researcher followed all ethical measures to undertake this study. The Ethics committee from University issued an ethical clearance certificate after meeting all necessary requirements in applying for ethical clearance (Appendix E). The researcher sought authorisation to carry out the study. from the registrar of the Institution of Higher Learning. The registrar issued a letter granting permission to conduct the study (Appendix F). They granted permission on condition that the institution schedule would not be altered and no classes were interrupted.

This study was aimed at the exploration of learning experiences of Deaf and Hard of Hearing preservice teachers; therefore, their welfare and rights were respected. A consent letter (Appendix D) was given and the content explained to Deaf and Hard of Hearing participants using SASL in order to ensure they understood the nature, objectives and purpose of the study for which they were invited to participate. The researcher responded to inquiries from the participants regarding the consent letter and clarified what was expected. Following the clarification of the consent letter, a discussion was held regarding the confidentiality, risks, and benefits of their involvement in the study. Pseudonyms were used to protect participants identity. The researcher made it apparent that they would not be penalised in any way for choosing not to participate in the study and explained that participation was voluntary. The instruments that were used such as semi-structured interviews, reflective journal and unstructured observation were carried out with the utmost professionalism and objectivity.

3.8 Limitations of the Study

A research study's limitations are any potential weaknesses or constraints that could have an impact on the methodology, design, interpretation of the data, or generalizability of the findings (Maree, 2020). These are elements of the study that are uncontrollable and may have an effect on the findings' validity and reliability. The limitations of this study are outlined as follows:

A few Deaf or Hard of Hearing preservice teachers were reluctant to voluntarily engage in the study or to be interviewed because of the fear that it would be somehow detrimental to them. This was a drawback because valuable information cannot be captured. To overcome this, the researcher outlined the benefits that this study could have for future Deaf and Hard of Hearing preservice teachers enrolled at an Institution of Higher Learning. The researcher

eliminated any irregularities or worries participants could have. Additionally, the researcher was honest to all participants and did not omit critical details in the study.

The limitations of using the semi-structured interviews rely heavily on the skill of the interviewer and how he/she is able to elicit the required response from the interviewee. According to (Ngozwana, 2018) there is a significant chance of prejudice and mistake because of the nature of interviews, which might negatively impact the process. To overcome this challenge, the researcher had a structured interview format and participants were asked the same set of questions in the same order. This helped to eliminate any mistakes and make fair comparisons between candidates.

3.9 Conclusion

The methods and protocols used to address the study's research questions were covered in this chapter. It covered the research approach; research paradigm and research design that was used in this study. Furthermore, research methodology sampling techniques and the methods for data generation were discussed. The method for analyzing data; concerns about reliability and credibility; confirmability; ethical issues and study limitations were also covered.

Chapter 4

Data Presentation, Discussion and Analysis

4.1 Introduction

This chapter connects the research methodology. The chapter marks the commencement of data presentation, discussion and analysis. Three critical research questions that guided data generation is presented at the beginning of this chapter. It presents the biographical information of participants and the empirical data that was generated during the data generation process of this study. The themes and sub-themes that emerged from the study were presented, discussed, and analysed. Three data generation instruments employed in this study included semi-structured interviews, reflective journals and unstructured observations. The study explores Deaf or Hard of Hearing preservice teachers' learning experiences in an Institution of Higher learning. It determines the kind of support that Deaf or Hard of Hearing preservice teachers require for their learning and development. All the opportunities and all the challenges that Deaf or Hard of Hearing preservice encounter in their journey of learning was explored and the following research questions guided the research study:

- i. What are the learning needs of Deaf or Hard of Hearing preservice teachers in an Institution of higher learning?
- ii. How are Deaf or Hard of Hearing preservice teachers' learning needs provided in an Institution of higher learning?
- iii. Why are Deaf or Hard of Hearing preservice teachers' learning needs provided in that particular way in an Institution of higher learning?

4.2 Biographical information of participants

This section provides brief biographical information on each participant in the study. To participate in this study, the researcher purposively selected three Deaf preservice teachers from an Institution of Higher Learning that offered a Bachelor of Education as a teaching profession in KwaZulu-Natal, South Africa. While the study included Hard of Hearing preservice teachers, they were not available for research participation. The Institution enrolls a variety of preservice teachers with disabilities including the Deaf students that participated in the study. As explained in the methodology chapter, pseudonyms were used to protect

privacy and preserving the confidentiality of all the participants. This was in line with the ethical standards in research, as suggested by Maree (2020), that the researcher should guard against any possible physical, emotional, and psychological harm that may occur to the participants during the course of the study. For the purpose of this data presentation, Preservice Teacher 1 is identified as PT1, Preservice Teacher 2 as PT2 and Preservice Teacher 3 as PT3.

Table 4.1: Biographical data of the participants

Source: Author

Name of participant	Gender	Deaf or Hard of Hearing	Age bracket	Year of study	Specialisation
PT1	Female	Deaf	20-29	3 rd year	Foundation phase
PT2	Female	Deaf	20-29	4 th year	Foundation Phase
PT3	Female	Deaf	20-29	4 th year	Intermediate Phase

A population of five Deaf preservice teachers were enrolled in the Institution of Higher Learning. Only 3 Deaf preservice teachers participated in the study. Participants were chosen from 3rd and 4th year as they were more experienced and familiar with the Institution and the phenomenon. PT1 was completing the 3rd year of study, while the other two preservice teachers were in their final year of study. As seen in the table, the participants were between 20 and 29 of age. The researcher had no control over the choice of gender for teachers and purposive sampling was used to select relevant participants. Denzin and Lincoln (2018) believe that in purposive sampling, the participants are selected to meet a specific purpose. Consequently, all three preservice teachers were females. They were all interviewed and observed in their lessons. Therefore, no male preservice teachers participated in the research study.

4.2.1 The biographical data of PT1

During interviews, PT1 mentioned that she became Deaf at a very young age and attended a Deaf school from the beginning of her school journey. Despite her Deafness, she is passionate about teaching and decided to pursue this profession as a Foundation Phase teacher to assist other Deaf and Hard of Hearing students to achieve their goals and fulfil their dreams. She is grateful as an African young lady to be accepted into the Institution and for the opportunity to achieve their dreams of becoming a teacher.

4.2.2 The biographical data of PT2

During interviews, PT2 mentioned that she was proud of being a Deaf Indian student enrolled at the Instituting of Higher Learning. However, her experiences are filled with bitter and sweet moments as she sometimes faces many challenges while studying. She mentioned that she likes to work with young students and always strives to give her best as a Foundation Phase preservice teacher. While she communicates using South African Sign Language, PT2 enjoys her experience amongst dominantly Hearing students who have taught her a lot as she is completing her final year.

4.2.3 The biographical data of PT 3

PT3 mentioned that as a fourth-year student, she is very motivated to complete her studies as she wants to make a difference in the lives of Deaf students. During interviews, she declared that her journey as an Intermediate phase teacher started very challenging due to covid-19 pandemic. She had to navigate her way through online learning. Despite the odds, she has preserved and is grateful to be in her final year. PT3 is excited to achieve her dreams of becoming a teacher for Deaf students.

As seen in Table 4.1, the demographic information of the three participants for this study. The three Deaf preservice teachers participated in the semi-structured interview and were also available during my unstructured lecture room observations. Semi structured interviews were conducted on a face-to-face basis using SASL for all the participants. As a researcher, I visited lecture rooms for unstructured observations to observe them in their natural setting and thereafter, reflective journals were used to gain a deeper understanding of the phenomenon. Reflective journals guided my thinking during the data generation process. More related data generated is presented below.

4.3 Data presentation

This section presents the data generated using semi-structured interviews, unstructured lecture room observations and reflective journals. This study seeks to explore Deaf or Hard of Hearing preservice teachers' learning experiences in an Institution of Higher learning. It seeks to explore all the opportunities and the challenges that Deaf or Hard of Hearing preservice teachers encounter in their learning journey. After data generation, as a researcher I went through data several times to try and make sense of them. Similar data were identified from each data collection instrument and given a specific code. Thereafter, data was examined from each specific code to identify a common theme. The table below includes the research questions, themes and sub-themes that emerged from the data.

Table 4.2: The theme table

Source: Author

<i>Research question</i>	<i>Theme</i>	<i>Sub-themes</i>
1. What are the learning needs of Deaf or Hard of Hearing preservice teachers in an Institution of higher learning?	Theme 1: The importance to be accommodated	<ul style="list-style-type: none"> • The need to be respected • The need for extra time • An induction loop system
2. How are Deaf or Hard of Hearing preservice teachers' learning needs provided in an Institution of higher learning?	Theme 2: The solutions to learning	<ul style="list-style-type: none"> • Technology as an enabler of learning. • Support services

<p>3. Why are Deaf or Hard of Hearing preservice teachers' learning needs provided in that particular way in an Institution of higher learning?</p>	<p>Theme 3: Learning resources</p> <p>Theme 4: Learning challenges</p>	<ul style="list-style-type: none"> • The availability of funding • The interpreter absenteeism • The communication barrier • Deaf culture
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Four major themes emerged from the analysis of the data generated during semi-structured interviews, unstructured lecture room observations and reflective journaling. The themes and sub-themes are discussed below.

4.3.1 Theme 1: The importance to be accommodated

Mpu and Adu (2021) argue that one of the problems that hamper progress is the lack of providing accommodations for Deaf students in Institutions of Higher Learning. Therefore, it emerged from the analysis of the data generated during my engagement with the participants using semi-structured interviews that accommodation is an important issue for the Deaf students. All the participants reported that they want to be fully accommodated in an Institution of Higher Learning. The participants explain all their learning needs for them to feel accommodated.

4.3.1.1 The need to be respected

Frumos & Rosa (2019) state that in addition to helping Deaf students succeed academically, Institution of Higher Learning need to cultivate a more accepting and compassionate campus community by fostering an environment of respect. PT2 explains that she always wanted to be respected as all other students to learn better. This was evident as PT2 said:

“I will be very much happy if all staff and hearing students can fully respect us as Deaf individuals. We should never be neglect as Deaf students, as we may sometimes need help”.

PT3 added:

“My Hearing peers do not know how to accommodate Deaf students. In group work they do not give me an opportunity to interact and it is worrying me”

What the participants shared during interviews was mirrored during my observations and reflections as I noticed that other students were not showing any signs of respect such as greetings, maintaining eye contact or attempt to communicate directly with Deaf students since respect can be shown through these actions to Deaf students. According to Shpigelman et al., (2021) when Deaf students feel respected, they can thrive academically and socially, leading to a richer, more equitable university experience. Furthermore, respect is foundational for ensuring that Deaf students not only succeed but feel valued and integrated into university life.

Data collected using semi-structured interview showed that two out of the three participants highlighted the need to be respected as very important for them at the Institution of Higher Learning. This was evident as participants mentioned that they do not like to be neglected, should it happen that they require assistance to learning. The participants mentioned that as they noticed that they were sometimes not accommodated and feel excluded in the lecture room.

4.3.1.2 The need for extra time

Data showed that participants are sometimes very slow when writing assessments and therefore, expected to be given more time than other students to write. That was the case because unlike other normal students, Deaf students have to translate from SASL which is considered as their home language to other languages such as English or Isizulu which slows down their reading comprehension pace and response time. When responding to question about what they need to learn, PT 1 stated:

“I had a problem with Zulu modules during the exam because as a deaf student translating between SASL as my first language, to English and then finally to Isizulu takes up a lot of time. I always need more time during exams and when doing other assessments to read and answer all the questions”

What the participants mentioned related to Ngobeni et al., (2020), that Deaf students use South African Sign Language (SASL) as their primary language, which has a different grammar and syntax from English. This can make reading and understanding written English assessment questions more challenging, requiring more time to understand what is expected from them. PT1 added to what PT2 mentioned and outlined:

“It happened that during an examination, I didn’t finish writing on time. While the invigilator told us that we were given extra time, that was not enough for me to finish writing. We were given very less extra time. I had to rush through an exam to finish on time. Questions were difficult to understand as an interpreter left after we started writing. The time we were given was not enough for me, I needed more time than what was given to us”.

Data showed that the participants needed more time when writing the assessment activities. The participants mentioned that it takes time for them as they have to read and translate from their home language being SASL to English and then to Isizulu required when writing.

4.3.1.3 An induction loop system

Another interested finding that came to light during my lecture room observation was that Hard of Hearing students need an induction loop system in the lecture room. As a researcher and an observer, I noticed that there was no built-in induction loop system in lecture rooms to assist Hard of Hearing students to effectively communicate with lectures and peers. The induction loop system helps to amplify sounds which enables Hard of Hearing students to hear better. These system works in huge spaces like lecture halls, where a loop of wire transmits sound directly to the hearing aids or cochlear implants equipped with telecoil technology (Kumar et al., 2022). This ensures that the sound received is clearer and free from environmental noise.

Seol and Moon (2022), points out that Hard of Hearing students with hearing aids struggle to hear because of background noise, reverberation and distance. Induction loop systems are technologies that exist to help overcome these listening barriers. Without a loop system, Hard of Hearing students who use hearing aids or cochlear implants struggle to hear lectures and discussions clearly, leading to difficulties in understanding and engaging with the material. Overall, the absence of a loop system can contribute to an environment that feels less inclusive and supportive for students with hearing impairments.

Although Hard of Hearing students were not part of in this research study, data from my observations revealed that Hard of Hearing students need a built-in induction loop system in lecture room to help amplify their hearing.

4.3.2 Theme 2: The solutions to learning

Creating an adaptable and inclusive learning environment lays the groundwork for successful learning. A study conducted by Allman, Wolters & Murphy, (2019) revealed that that knowing how to address the learning needs of students who are Deaf and Hard of Hearing can be difficult because students with hearing loss are not the same. Their hearing loss my vary greatly and so does the individual instructional needs. **Drawing from the interviews with the participants and from my lecture room observations and reflective journals two sub-themes emerged from the above theme.** Data revealed that different technology resources and other support services provided by the Institution of Higher Learning are used to support Deaf students in learning. **When responding to the question, *How are Deaf or Hard of Hearing preservice teachers' learning needs provided in an Institution of higher learning?*** the participants responded.

4.3.2.1 Technology as an enabler

This sub-theme developed as the participants reported about different forms of technology provided to support their learning needs. Data from semi-structured interviews, showed that when interpreters are not present, Deaf students learning needs are provided using an app called “Microsoft office 365”. Deaf preservice teachers use this app to follow along with lectures, discussions, and other spoken content in the lecture room. They further explained that the subscription for the app is paid for by the Institution of Higher Learning to support their learning needs. When answering the related question, PT2 reported:

“The Institution of Higher Learning provides support for our learning needs by giving us access to Microsoft office 365 app which I downloaded onto my phone. This app has a lot of features that help us to follow lectures. I use my phone as a dictator device in order to make use of the speech recognition tool on the app which converts voice to text. This allows me to read what is being said by the lecturer and other students”.

Similarly, to PT2, PT3 also mentioned that using the “Microsoft office 365” app provided by the Institution of Higher Learning supports her learning needs during lectures and also added what can be sometimes challenging for them. She explained that:

“Although I sometimes struggle to follow the live transcribing because the text displayed on screen is too fast, the app is very helpful. It provides many features for my learning needs during lectures”.

In some cases, the participants reported that the transcribing live required a lot of effort.

PT1 outlined:

“The app is very useful but sometimes challenging. Using the Microsoft office dictator feature in class needs lot of effort because I have to go home and review notes in order to make sense of everything. During load shedding, the internet connection is unreliable, which has an impact on my notes”.

What the participants highlighted as the provision by the Institution was supported by data from my observations and the reflective journal. It was evident that Deaf preservice teachers utilise the "Microsoft Office 365" program to follow along with lectures.

Yusuk (2018), supporting Vygotsky’s Sociocultural Theory of Cognitive Development, suggests that well-planned lecture room activities with suitable materials demonstrate an understanding of the zone of development. The zone of proximal development refers to the gap between what a student can do alone and what they can accomplish with the help or support of a more knowledgeable individual. It emphasises the significant role teacher’s play in facilitating student’s construction of new knowledge in the lecture room. When participants were asked about how their learning needs are supported in the lectures. All the participants shared similar sentiments from PT3 who stated:

“Lecturers often provide PowerPoint’s and videos with captioning to support our learning needs during lectures. Lecturers share it on a platform called “Learn 2024 in our Institution”, but it is also identified as “Moodle”.

In support of what the participants said during interviews, data from observations and reflective journals also showed that lecturers use visual resources such as MS PowerPoint and videos with captioning in their lessons to support students to learn. However, the

researcher observed that the PowerPoint was not properly designed to accommodate Deaf students. This was the case as the key words were not highlighted in the extensive notes. Deaf students required extra time to process and read lengthy slides, so slides that were not summarised and structured adequately suggested that information was not conveyed effectively to Deaf students. That was supported by Frumos & Rosa (2019) who emphasised that some lecturers are not knowledgeable about how to structure visual aids and use technologies that suit students who are Deaf. Therefore, while Deaf students are supported, some more has to be done in Institutions of Higher Learning.

Data from semi-structured interviews, lecture room observations, and reflective journals revealed that Deaf preservice teachers learning needs are provided using different forms of technologies and PowerPoint presentations with videos and captions. All the participants mentioned that the Microsoft Office app was useful, however, others highlighted that they faced some challenges when they had to use it. Participants also mentioned the importance of MS PowerPoint which was sent on Learn2024 for them to learn even when they were not on campus.

4.3.2.2 Support services

During my observation at Institution of Higher Learning, I identified and learned that different support services are provided to Deaf preservice teachers. I noticed that the Disability Unit acts as a centralised source of help and provides support for Deaf preservice teachers learning needs. Batista & Garcia (2023) revealed that Deaf or Hard of Hearing students expect enough learning support similar to hearing students who are enrolled in Institutions of Higher Learning. What I observed was also supported by what the participants highlighted during interviews. PT2 explained how they were further supported and goes on to say that:

“The disability unit provides us with an interpreter who helps us to follow and understand lectures better. They also help us to participate in lectures. The interpreter always encourages me to socialise with others and concentrate on my studies. I am successful because of this”.

PT3 also highlights how the interpreting services assist them at the Institution of Higher Learning. The is emulated by the following excerpt:

“The interpreters provide support to us in lectures and help us to participate in class discussion and group work. Additionally, they also assist us for academic events and help us connect with hearing students more easily outside the lecture room”.

Data from semi-structured interviews showed that the Institution of Higher Learning Disability unit provides support for Deaf students learning needs by offering interpreting services. This was evident from the fact that participants mentioned how the interpreting services benefited them in lectures and outside the lecture room. Additional support that participants mentioned they receive in the lecture room is peer support. PT3 mentioned that peer support is very helpful to her lectures. She said:

She said: “Hearing students also support me during lectures. They offer to take down notes for me or summarise discussions. Sometimes I miss things during lectures, and they also offer to share their notes with me. They are gracious to me”

4.3.3: Theme 3: Learning resources

According to Shpigelman et al. (2022) an inclusive and supportive Institutions of Higher Learning experience stems from recognising and meeting the special needs to provide sufficient learning resources for Deaf students. Drawing from the interviews of participants revealed one sub-theme. Data revealed that **the learning resources they receive was dependent on the availability of funding when responding to the question, why are Deaf or Hard of Hearing preservice teachers’ learning needs provided in that particular way in an Institution of higher learning?**

4.3.3.1 The availability of funding

The data revealed that all participants were reliant on the availability of funding for their resources and without it studying towards their dream of becoming an empowering teacher for Deaf students would not be possible. PT1 said:

“The disability unit offers to use my NSFAS funds to buy any additional resources I need, like a voice recorder or dictator. A motivation letter will have to be done for this to happen, and only then will I be able to get it, if NSFAS approves it”.

Similarly, PT2 explained the way in which her learning needs were provided for at the Institution of Higher Learning was dependent on the financial aid. She said:

“I get all the study materials I require from NSFAS. It provides me with a laptop and textbooks. I won't be able to afford to study without NSFAS”.

Along similar lines, Allman, Wolters, and Murphy (2019), states for Deaf and Hard of Hearing students to flourish and succeed in their studies, it is essential to have the correct resources and services in place to create the best possible learning environment. PT3 She said:

“If I need additional resources such as note-taking I can ask the disability unit to do a motivation letter to NSFAS. Only if it's approved and there is enough funding, I will be able to receive these services”.

Frumos and Rosa (2019) revealed that the availability of resource allocation significantly impacts the functioning and effectiveness of the disability unit. It also influences the quality of support and services provided to Deaf students. Furthermore, the financial resources allocated to a disability unit directly affect its capacity to fulfill its mission of providing equal opportunities and support to Deaf students.

Data from semi-structured interviews revealed that the learning resources provided at the Institution of Higher Learning are largely dependent on the availability of funding. This is the case as participants reported that any additional resources and services, they require are subject to funding and approval by NSFAS.

4.3.4: Theme 4: Learning challenges

A study by Mapepa and Magano (2018) revealed that Deaf and Hard of Hearing students encountered more learning challenges than hearing students in universities. Furthermore, Deaf and Hard of Hearing students also have concerns about the ability of the Institution of Higher Learning to modify their learning environments to meet their learning needs. This theme emerged as the participants mentioned some of the challenges they experience when learning in an Institution of Higher Learning. The following sub-themes the interpreter absenteeism, the communication barrier and Deaf culture emerged from the related data collected.

4.3.4.1 The challenge of interpreter absenteeism

A study conducted by Oppong et al., (2018) revealed that interpreters of SASL bridge the gap between students, teachers/lecturers and knowledge to overcome the linguistic difference in communicative interaction. This sub-theme emerged from the analysis of the data generated during my engagement with the participants using semi-structured interviews. PT3 said:

“When interpreters are not present, I struggle to follow lecturers and conversations using real time captioning. This makes me feel isolated and feel like am missing out on important information in class. Interpreters are sometimes also not readily available outside of class for quick question or discussions”

As outlined in Vygotsky’s Sociocultural Theory of Cognitive Development for cognitive growth the social interaction and collaboration are the primary factors considered (Novita, Kurnia, Mustofa, 2020). Therefore, for Deaf students, learning is related to the theory highlighting meaningful collaborations and social interactions to foster cognitive development. Moreover, Deaf-friendly cultural adaptations have to be taken into consideration. Data from semi-structured interview showed the need for full time interpreters who are always available for the Deaf students to easily collaborate and work with other students in groups. This was the case since the absence of Deaf-friendly cultural adaptations negatively impacted Deaf preservice teachers. PT1 said:

“I have challenges working in groups when the interpreter is not available. I struggled to communicate with hearing students as they don’t give me the opportunity to talk.”

PT3 supported what PT1 said and mentioned that she experienced challenges when she has to work in collaboration with other peers without the guidance of an interpreter:

“When interpreters are not present, I had difficulties when we had to collaborate to complete some activities. Hearing students usually become impatient with me as they did not understand how I have to work with them. I become confused and don’t know what to do and what other students have to do for us to complete the given task or to finish the project.”

Similarly, PT2 also expressed her challenges relating to the interpreting services that are provided them. This is emulated by PT2's statement:

“Although interpreting services are provided to meet our learning needs, I have to use other resources to understand lectures when interpreters are not present, which is challenging”.

According to Novita et al., (2020) peer collaboration is important for learning and development, as when teachers focus on assessing students group performance, the social interaction, and reciprocal support of each member of the group would simultaneously be attained. Furthermore, sometimes students rely on one another to finish the given tasks that they would not finish as individuals. All participants mentioned the learning challenges they experience when the interpreters are not available. Numerous issues such as the frequent absence of interpreters still exist in Universities. From the data, it was evident that while collaborations and social interactions are important, Deaf student usually struggle. As outlined in Vygotsky's Sociocultural Theory of Cognitive Development, the importance of communication through social interaction and collaboration is considered as a primary factor in cognitive growth. Vygotsky's Sociocultural Theory emphasised that meaningful social interactions and collaboration can foster cognitive development (Maflah ,2023; Zhou,2024). Therefore, the generated data revealed that inclusive Deaf-friendly cultural adaptations such as full-time interpreters have to be in place.

4.3.4.2 The communication barrier

Mbuvha (2019) states that for Deaf students, succeeding in a postsecondary setting requires advanced language and communication skills. A key challenge is the need to access an environment that is primarily based on spoken language. This sub-theme emerged as the participants highlighted the challenges they experience when they communicate with lecturers. PT3 reported that while teachers in high school used SASL to communicate with students, there is a communication barrier at higher education institutions where lecturers are not trained to use SASL.

PT3 said:

“In a Deaf school, instructions are given by teachers who use SASL to communicate with us but in an Institution of Higher Learning instructions are given by the interpreters as lecturers are unable to use SASL”.

PT2 also shared her struggles and difficulties in communicating with lecturers as many of them does not understand SASL. PT2 said:

“Whenever I want to participate in the lesson, the lecturer does not understand SASL. I just become neglected when the interpreter is not available”

What PT2 mentioned was supported by Bunbun, Owusu & Asare (2023), who mentioned that in contexts of inclusion, the view that Deaf students have of communication in the lecture room and their involvement in the learning process is expected to be the same as that of their hearing peers. This is because Deaf students feel less integrated than the latter when they are ignored.

Oppong et al., (2018) mentions that much of the learning process is based around speech. Therefore, Deaf students who communicate using SASL; may find it difficult to fully engage in lectures. PT1 and PT3 highlighted that because lecturers are unable to use SASL. They find it difficult to understand lectures in cases when the interpreters are not available.

PT3 added that: *“I fail to understand the lecturer because of the language used in class. If a lecturer does not know SASL we cannot understand the lesson. I end up losing concentration and become bored”.*

PT3 also highlighted that she experiences challenges when communicating with classmates who don't know SASL. She stated:

“Making friends and feeling like part of a group can be difficult due to communication barriers. I also encountered difficulties when communicating with classmates as they were impatient with me”

PT 2 further highlighted that in high school it was easier for her to socialise and make friends while being at the institution of Higher Learning, it is difficult due to the “communication barrier”. PT2 outlined:

“It is a pretty different experience to be at an Institution of Higher Learning because I used to attend a Deaf school with Deaf students and we communicated using sign language. It was easier to make a lot of friends. But since attending this Institution of Higher Learning, it has been hard and very awkward for me because of the communication barrier”

Data generated using semi-structured interviews showed that all the participants found it difficult to communicate with lecturers and with hearing students. That was the case as the participants were unable to interact with lecturers and make friends with their hearing peers due to the communication barrier. As participants mentioned that coming from a Deaf High school where teachers used SASL and it was easier to make friends. Participants mentioned that lecturers and hearing students were unable to use and understand sign language. Data from my observation schedule supported these statements as it showed that participants found it challenging to interact with lecturers and hearing students since they are not trained in SASL. During my reflections I also realised how the University life is challenging for Deaf preservice teachers when they have to do group work as they are sometimes not given enough opportunity to share their ideas. Data from the reflective journal revealed that when lecturers asked questions, it was only hearing students that engaged in the lesson. I realised that that the lecturers do not make adaptations that favour Deaf students.

4.3.4.3 Deaf culture

The participants made it clear that hearing students and the lecturers do not know the Deaf culture. That was evident as the participants highlighted that due to large class sizes, during lectures hearing students engage more amongst one another which interferes with the sign language interpreters. PT3 said:

“Where there are lots of students the lecturer and the interpreter become agitated when they make noise which interfere with the Sign language. Lecturers found it difficult to deal with impish students because they don’t know about Deaf culture. The interpreter

also express anger against those students who make noise and disobey the lecture room rules”.

In some cases, participants mentioned feelings of isolation PT1 said:

“I feel isolated because hearing people socialise together and being the only Deaf student in my class leaves me feeling left out in general conversations. They don’t know about Deaf culture”.

My observations and reflections mirrored what the participants said, I noticed that although students in class were aware of the Deaf student’s presence, they did not have any knowledge about Deaf culture. The hearing peers did not make eye contact or display any facial expressions during interactions with Deaf students, which are important aspects of Deaf culture. That was supported by Mathews et al., (2024) who argues that Deaf awareness at Institution of Higher Learning is relatively low. Findings in their study suggested that students and faculty who are aware of Deaf culture are more likely to learn basic sign language, use visual cues, and engage in more effective communication which can improve the experiences of Deaf and Hard of Hearing students. Therefore, data from semi-structured interviews, lecture room observation and reflective journaling revealed that Deaf preservice teachers need hearing peers and staff to learn about Deaf culture. This was the case as two out of three participants felt isolated due to social exclusion and lack of awareness of Deaf culture. According to Bell et al., (2016), increased awareness of Deaf culture can lead to opportunities for improved interaction, which increases the likelihood for the Deaf students to feel accepted in an institution.

4.4 Conclusion

This chapter presents the findings of the study based on Deaf preservice teachers’ learning experiences at an Institution of Higher Learning. Three critical questions guided the study and three data generation instruments were used: semi-structured interviews, unstructured observation, and reflective journals. Four major themes emerged from the data that were analysed inductively. These were: The importance to be accommodated, the solutions to learning, learning resources and learning challenges. The next chapter presents the researcher’s interpretation of the findings, the conclusions drawn from the findings and recommendations for action and further research.

Chapter 5

Conclusion, Discussion and Recommendations

5.1 Introduction

The study explored Deaf or Hard of Hearing preservice teachers' learning experiences in an Institution of Higher learning. The aim was to determine the kind of support that Deaf or Hard of Hearing preservice teachers required for their learning and development. The previous chapter presented, discussed and analysed data collected from Deaf preservice teachers' experiences. The data was collected from the three Deaf preservice teachers in one Institution of Higher Learning. That was done through interviews, observations, and reflective journaling. The data collected was organised into themes and thereafter the findings were made.

This chapter provides the summary of the findings and the insights for the whole thesis are presented. The summary of the findings pertains to matters related to Deaf and Hard of Hearing preservice teachers' learning experience at an Institution of Higher Learning. Recommendations and conclusions were drawn from the findings presented in this chapter. This study was supported by three research questions presented under discussion below.

5.2 Discussion of findings

The goal of the study was to ascertain the experiences of Deaf and Hard of Hearing preservice teachers and the kind of support that require for their learning and development.

Three critical research questions guided this study they are:

1. What are the learning needs of Deaf or Hard of Hearing preservice teachers' in an Institution of Higher Learning?
2. How are Deaf or Hard of Hearing preservice teachers' learning needs provided in an Institution of Higher Learning?
3. Why are Deaf or Hard of Hearing preservice teachers' learning needs provided in that particular way in an Institution of Higher Learning?

5.3 Responses to research questions

The participants responded to the three research questions. Two key aspects were under the lens: Deaf preservice teachers' learning experiences and the Institution of Higher Learning. The research study yielded four major themes: The importance to be accommodated, the solutions to learning, learning resources and learning challenges. Various forms of literature on these key phenomena were reviewed to further illuminate the phenomenon under study. The following section presents the findings in relation to each research question:

5.3.1 Research Question 1

What are the learning needs of Deaf or Hard of Hearing preservice teachers' in an Institution of Higher Learning?

When responding to the first question, one theme emerged and three sub-themes were derived from that one theme. The finding of the study revealed that all Deaf preservice teachers wanted to be fully accommodated in the Institution of Higher Learning. The participants believed that they needed to be respected and they need extra time to complete assessments. Furthermore, there is also a need for an Induction loop system to enhance communication with lecturers and Hearing peers. Findings indicate that Institution of Higher Learning need to foster an inclusive and respectful environment that values diversity and promotes success for Deaf students. These findings concur with Mpu and Adu (2021) who state that there is still more work to be done by Institution of Higher Learning to create the learning environment truly inclusive and accommodating to Deaf students. Deaf students are among the under-supported groups as there are multiple issues that still affect the academic success of Deaf students.

The findings revealed that Deaf students wanted to be treated with respect and without bias or discrimination. Two out of the three participants expressed how important it is for them to be respected at the Institution of Higher Learning. This was the case as one participant believed that should Deaf students require assistance; they should not be neglected. Another participant also highlighted that she felt excluded in lecture room discussions. It was also evident that hearing students did not display any signs of respect towards Deaf student such as greetings, maintaining eye contact or attempting to communicate directly with Deaf students. The finding indicated that Deaf students want to be seen, felt and heard. The lack of awareness or validation of their cultural experiences can make Deaf students feel invisible

or undervalued. The present findings seem to be consistent with Batista & Garcia (2023) who state that the main problem Deaf students face is the incapacity of the hearing community to understand, empathise, and respect Deaf students. Respect ensures that Deaf students have equal opportunities to succeed. In accordance with the present results, previous studies have demonstrated that hearing counterparts should be sensitive to Deaf student's needs (Selepe, & Moleleman, 2022). Furthermore, it also contributes to a diverse and inclusive campus culture which bridges the gap between hearing and Deaf communities.

This study found that assessments can be difficult for Deaf preservice teachers' as they need extra time to complete assessments. Data revealed that one study participant had a challenge with a IsiZulu module in particular, due to its rich system of noun classes, grammar and syntax which is different from SASL and English. The participant asserted that they need extra time to translate from SASL, which is regarded as their native tongue, to other languages like English or Isizulu, which slows down their reading comprehension speed and response time in comparison to hearing students. The fact that Deaf students require more time for assessments at the Institution of Higher Learning indicates the need for equitable accommodations that address the unique issues they face in processing and understanding assessments. This finding is supported by Bell and Swart (2018) who state that, Deaf students need sufficient support that are adapted to their learning needs. Overall, while Institutions of Higher Education are making progress in integrating Deaf preservice teachers into their surroundings, the need for accommodations is still sorely needed.

Data showed that even though Hard of Hearing students were not a part of this study, Hard of Hearing students need an induction loop system in lecture rooms. Data revealed that lecture rooms did not have an Induction loop system for Hard of Hearing students. Findings indicate that the Institution of Higher Learning lecture rooms are not conducive for learning for Hard of Hearing students. This is because Hard of Hearing students may find it difficult to hear lectures and discussions clearly without a loop system, which could make it difficult for them to understand and participate in the lectures. These findings concur with Allman et al., (2019) who assert that students who depend on assistive listening devices may experience comprehension gaps and poorer academic achievement as a result of their hearing difficulties. An induction loop system provides auditory support for Hard of Hearing Students who use hearing aids or cochlear implants. It also enhances sound clarity and communication between

lecturers and hearing peers. The fact that there is no induction loop system in the lecture venue to amplify sound puts Hard of Hearing students at a great disadvantage.

5.3.2 Research Question 2

How are Deaf or Hard of Hearing preservice teachers' learning needs provided in an Institution of higher learning?

One theme and two sub-themes came to light when responding to the second question. Data revealed that Deaf preservice teachers' learning needs are provided using various technological tools and support services provided by the Institution of Higher Learning to navigate through their learning journey. These findings indicate that how advancements in assistive technology have expanded educational opportunities for Deaf students. It also reflects how technology serves as an equaliser, making education more inclusive. In support of this finding Omore (2023) asserts that technology plays a transformative role in bridging the gap between Deaf and hearing individuals. Moreover, in concurring with this idea (Wasmann, et al., 2021) states that with technology developments over the past few years, it has paved the way for inclusive solutions that empower and improve the lives of Deaf students. However, these technological devices sometimes meet the learning needs of Deaf and Hard of Hearing preservice teachers and sometimes it doesn't meet their learning needs.

Data from this study, revealed that all study participants use a "Microsoft Office 365" app to follow along with lectures. The subscription for the "Microsoft Office 365" app is paid for by the Institution of Higher Learning and it has many services that are beneficial to Deaf preservice teachers. Participants highlighted that the most helpful feature is the dictation feature, in which they use their cell phone as a dictator to convert voice to text. This helps them to follow lectures when an interpreter is not available. As explained by Allman et al., (2019) who state that the level of hearing loss, individual preferences, and the accessibility of resources all influence the learning strategy they use in the lecture room. Technological tools such as a "Microsoft Office 365" app incredibly helpful to Deaf Students, but they also come with certain drawbacks. This was the case as one participant asserted that she had to go home and read over their notes to make sense of everything, which was a lot of work. Another participant also highlighted that the internet connection is erratic during power outages, which affects her notes. Overall, data revealed that the "Microsoft Office 365" app is a useful tool for Deaf preservice teachers' in the lecture room, despite its drawbacks.

Data from the study revealed that lecturers provide participants with PowerPoints and videos with captioning to support their learning needs. This was the case as one participant highlighted that the visual aids are shared on a platform called “Learn 24 in our Institution” also identified as “Moodle”. PowerPoints provide a visual aid to complement spoken information, helping Deaf preservice teachers follow along more easily with the lecture content. This finding reflects the Institution of Higher Learning commitment towards equitable and inclusive education, creating a more supportive learning environment for Deaf students. These findings concur with Mbuva, (2019) who explains that Deaf students acquire language and content more effectively by means of visual aids than through instruction.

However, it was evident that although the lecturer used a PowerPoint, it was not designed adequately to accommodate the learning needs of Deaf preservice teachers. Data indicated that, the information on the PowerPoint slides did not present information in a clear, organised format, breaking down complex topics into digestible segments. Additionally, key points were not highlighted to make it easy for Deaf preservice teachers to follow. Findings indicate that long PowerPoint presentations that are not sufficiently summarised and organised indicates that the material was not successfully communicated to Deaf preservice teachers’, hindering academic development. In affirmation, previous studies reported that lecturers that do not know how to structure learning materials to meet the needs of Deaf students can affect their academic performance (Lissi et al., 2017; Manga & Masuku, 2020).

In concurring with the idea relating to lecturers’ use of technological tools such as PowerPoints. Vygotsky sociocultural theory draws our attention to the zone of proximal development which describes the variety of tasks that a student can complete under supervision but not yet on their own (Potier and Givens ,2023). If lecturers are aware of Deaf students linguistic and cultural demands, they can adapt their lessons to better suit Deaf students and ultimately effective learning for Deaf children can be achieved in this zone.

The disability unit at the Institution of Higher Learning serves an essential role in ensuring that Deaf students have access to an inclusive and supportive learning environment. Data revealed that disability unit supports the learning of Deaf students by providing them with interpreting services. This was the case as two out of the three participants asserted how it helped them during lectures and outside the lecture room. One participant highlighted that the interpreter helped her to follow lectures and participate in class discussions. Another participant also affirmed that the interpreter assisted her for academic events. These findings support the idea

that Deaf students often rely on sign language interpretation for access to academic and social information (Bunbun, et al., 2023). Additional support that one participant highlighted they receive in the lecture room is peer support. The participant reported that hearing peers' volunteers to take down notes, summarise discussions or share their own notes. During lectures, the participant found this to be quite beneficial.

5.3.3 Research Question 3

Why are Deaf or Hard of Hearing preservice teachers' learning needs provided in that particular way in an Institution of higher learning?

In response to the third question two themes emerged and four sub-themes surfaced from the two themes. Data from the study revealed that the way in which learning resources that are provided to Deaf students are closely tied to the availability of funding. Prior studies have emphasised that Institution of Higher Learning should provide financial resources to meet the needs of Deaf students (Bell et al., 2016; Selepe, & Molelemane ,2022). Furthermore, Institution of Higher Learning that obtain finance and prioritises specialised services for Deaf students improves academic achievement, increased student happiness, and higher retention rates among Deaf students.

All participants asserted that their learning resources offered by the Institution of Higher Learning was heavily reliant on NSFAS funding. This was the case as all participants highlighted that NSFAS must fund and approve any resources and services they need. Participants felt that without this funding there would not be able to achieve their dreams of becoming a teacher for the Deaf. This finding reflects that the Institution of Higher Learning ensures that Deaf students have access to resources and services that are critical for their academic and social success, encouraging an inclusive campus culture. Selepe and Molelemane (2022) assert that one of the main barriers Deaf students face at the Institution of Higher Learning is lack of funding which compels the disability unit to give some services more priority than others, which could result in some needs going unfulfilled. However, the findings of the current study do not support the previous research as data revealed that there is funding available for Deaf students learning resources.

Data from the study revealed that Deaf preservice teachers' experience some challenges when studying at the Institution of Higher Learning. Participants highlighted that some of the challenges they face are the challenge of interpreter absenteeism, the communication barrier

and the unawareness of Deaf culture. These challenges indicate areas where improvements are necessary to create a more supportive and equitable educational experience for Deaf students. In support of these findings Mpu and Adu (2021) assert that the issues of inclusive education and its implementation are indeed South Africa's challenge. Deaf students encounter various challenges at the Institution of Higher Learning that can impact their academic performance, social integration, and overall well-being.

Data collected revealed that interpreter absenteeism was a big challenge for Deaf students. This was the case as all participants highlighted that they struggle to communicate with hearing peers when working with groups. These findings indicate that without an interpreter there are barriers in collaborative environments that can lead to misunderstandings and social isolation as a result Deaf students cannot reach their full potential, academically. In affirmation of this Vygotsky's Sociocultural Theory of Cognitive Development asserts that social contact and group work are the main elements taken into account for cognitive development (Novita et al., 2020).

Furthermore, one participant asserted that using alternate resources to keep up with lecturers can be challenging when interpreters are not present. This finding indicates that interpreter absenteeism has a significant academic drawback as Deaf students can not follow lectures effectively. Opong et al. (2018) affirm that without interpreters, Deaf students may be at a significant disadvantage compared to their hearing peers, affecting their overall educational experience and outcomes. This can lead to gaps in knowledge and understanding. Deaf students are usually evaluated academically on the material they have learned; therefore, not having an interpreter present is challenging (Adu, 2021). Interpreters are essential for creating an inclusive educational environment

The issue of communication being a barrier to learning was raised by all participants in the study. Moreover, two out of three participants highlighted that in High school, it was easier to communicate with teachers and establish social interactions with peers as there were more familiar with SASL. However, at the Institution of Higher Learning, this is not the case. Data also revealed that the study participants found it difficult to communicate with lecturers and hearing peers as they were unable to use and understand SASL. These findings indicate that communication is a critical aspect of the educational experience for Deaf students playing a vital role in their academic success, social integration, and overall well-being. The findings are in agreement with Ngobeni et al., (2020) findings, who conducted a study on the effect of

limited sign language as barrier to teaching and learning. Ngobeni et al., (2020) found that the South African education system lacks skilled and fluent sign language lecturers. Lecturers who do not have the required skills in SASL enter the system lacking crucial knowledge which causes barriers in the lecture room for the Deaf students. This can lead to teaching and learning being negatively affected. Moreover, Zayyad (2020) asserts that respecting and promoting the use of a SASL within educational settings aligns with Vygotsky's Sociocultural Theory which places emphasis on the use of culturally appropriate tools such as SASL to mediate learning.

Data revealed that staff and hearing peers should learn about Deaf culture. This was the case as two out of three participants felt isolated due to lack of awareness of Deaf culture and social exclusion. One participant asserted that hearing students are not aware of Deaf culture. One participant asserted that this was evident as during lectures hearing students interact more amongst one another which interferes with the sign language interpreters. Another participant also mentioned feeling isolated as her hearing peers left her out in general conversations. These findings indicated that the need to learn about Deaf culture points to the broader concept of equity in Deaf education. It ensures that all Deaf students have equal opportunities to succeed. A lack of understanding of Deaf culture inadvertently contributes to a system of inequality, where Deaf students face additional challenges in accessing education and building relationships with their peers. In concurring with this idea, Frumos and Rosa (2019) state that faculty members and hearing students are more willing to support Deaf students if they are knowledgeable and aware of Deaf culture. Furthermore, Deaf culture awareness contributes to creating an inclusive and diverse academic environment.

5.4 Limitations of the study

One of the limitations that I experienced in the study was that it was really not an easy task to access participants for this study. Some of the Deaf preservice teachers who were approached refused to be part of this project as it was going to be additional work for them. Five Deaf preservice teachers were enrolled in the Institution of Higher Learning only 3 participated. A few Deaf preservice teachers were afraid that participating in the study or being interviewed would negatively affect them, so they were hesitant to do so voluntarily. This was a disadvantage since important data could not be recorded. To get around this, I listed the advantages that this research provided for aspiring Deaf preservice teachers who are enrolled in a higher education institution. I resolved any anomalies or concerns that the

participants might have had. Additionally, the researcher was honest to all participants and did not omit critical details in the study.

It can be difficult to conduct unstructured observations in natural environments, particularly when third parties such as interpreters are involved. Another limitation that I experienced in the study was that during unstructured observations, I had to observe participants in their natural setting while following the guidelines; I had a conflict with the interpreters who did not want me to observe the lesson. I solved this problem by speaking to the supervisor of the interpreter and clarifying the purpose of the study and how it can be beneficial to Deaf preservice teachers.

5.5 Recommendations

This section presents the recommendations for this study. These findings offer practical value for lecturers, the disability unit and the Institutions of Higher Learning.

5.5.1 Recommendations for lecturers

The issue of communication came out as an important theme in the study. It was highlighted by all the participants that they could not interact with lecturers and hearing peers meaningfully due to a communication barrier. Hence, the study recommends that lecturers should be trained in SASL. The training will assist lecturers to learn about Deaf culture which will make Deaf students feel understood and that their culture and language is recognised and respected.

This is also supported by Oppong et al., (2018) who state that lecturers should take several steps to improve their use of SASL and create a more inclusive environment for Deaf students at the Institution of Higher Learning. Basic SASL courses are available for lecturers to acquire the fundamentals of communication. This enhances communication with Deaf students and shows support for inclusivity.

Learning and using common lecture room-related SASL phrases like *hello, thank you, please, or do you understand?* can foster a more welcoming atmosphere for Deaf and Hard of Hearing students. Lecturers can stay up to date on new signs, particularly those associated with the material they teach, by watching tutorial videos or using online SASL dictionaries.

By implementing these techniques, lecturers can enhance their SASL abilities and create a more inclusive environment for Deaf students.

The study revealed that lecturers do not know how to structure lessons to meet the learning needs of Deaf preservice teachers. The PowerPoint presentations designed by lecturers are lengthy and the key words are not highlighted making it difficult for Deaf preservice teachers to follow. It is recommended that lecturers use clear, well-structured slides with minimal text and plenty of visual aids to assist Deaf students to follow lectures with ease.

5.5.2 Recommendations for the disability unit

This section provides recommendations for issues raised in this study relating to SASL interpreters, induction loop system and the need for extra time for assessments.

SASL interpreters

There is undeniable evidence that Sign Language services are imperative for Deaf students at the Institution of Higher Learning. However, this study showed that Deaf students faced challenges with interpreter were not present at lectures. Consequently, it is imperative to address the issue of interpreters' frequent absenteeism. Institutions need to ensure a reliable pool of freelance, part-time, or on-call interpreters is available to fill in for main interpreters when they are unavailable. Collaborating with local interpreting agencies can also provide access to additional interpreters.

In order to minimise last-minute changes, it is recommended that Institution of Higher Learning cater for interpreting services well in advance for the duration of the semester. It is recommended that interpreters are rotated for lengthy or demanding courses to prevent burnout and high absenteeism from exhaustion.

Additionally, Institutions should ensure that interpreters receive fair compensation for their services, as this can lessen the possibility that absenteeism stems from a lack of job satisfaction or financial concerns. This study also recommends that, once the SASL interpreters are appointed by the Disability Unit, on-going evaluation and performance appraisal be done. The evaluation must involve reporting back to the SASL interpreters themselves. Feedback from Deaf and Hard of Hearing students as the consumers of SASL interpreting services as well as report back from lecturers should be considered. Similarly,

Allman, Wolters and Murphy, (2019) state that interpreters are not just a support service but a vital component of creating an inclusive and equitable Higher Education environment. Overall, by combining these approaches, Institution of Higher Learning can improve the reliability of interpreting services, reduce absenteeism, and ensure that Deaf and Hard of Hearing students consistently have access to the support they need.

Induction loop system

Findings from the study highlighted that the lecture room was not fitted with an induction loop system for Hard of Hearing students. In a time when technology is prevalent in our lives, it is important to focus on improving communication with Hard of Hearing students who use hearing aids or cochlear implants. The study recommends the Institution of Higher Learning invest in Assistive Listening Devices (ALDs) to remedy this situation.

Assistive Listening Devices are designed to improve communication, especially in noisy or challenging environments. These devices work either independently or in conjunction with hearing aids and cochlear implants to enhance sound clarity (Kumar et al, 2022). ALDs include:

- **FM Systems:** These systems are widely used in educational settings. A lecturer wears a microphone connected to a transmitter, while the student with hearing loss wears a receiver connected to their hearing aid or cochlear implant. The system transmits the lecturers voice directly to the student, improving clarity and reducing background noise.
- **Induction Loop Systems:** These systems work in public spaces like lecture rooms or theaters, where a loop of wire transmits sound directly to the hearing aids or cochlear implants equipped with telecoil technology. This ensures that the sound received is clearer and free from environmental noise.
- **Personal Amplifiers:** Personal sound amplification devices allow individuals to amplify sound in one-on-one conversations or small group settings. These devices are portable and easy to use, making them ideal for school settings, where a student may need extra assistance in certain subjects or environments.

Extra time for assessments

Participants also highlighted the need for extra time during assessments. The disability unit should have a clear policy stipulating time concession for Deaf and Hard of Hearing students. Addressing this issue of extra time for assessments enhances fairness and also contributes to

higher retention rates and academic success among Deaf students. By evaluating and improving its services, Institution of Higher Learning can create an environment that fully supports the academic, social, and personal development of Deaf students, ensuring they have equal opportunities for success.

5.5.3 Recommendations for the Institutions of Higher Learning

Two out of three participants raised the point that they do not feel fully included at the institutions, this is because hearing peers and staff knowledge about Deaf culture is relatively low. Deaf preservice teachers also reported feelings of isolation. In order for Institution of Higher Learning to be truly inclusive for students who are Deaf; it must be possible for these students to feel included by being able to participate not just in the academic activities but also the social activities of the university. No person with disability can be equal if:

“Academic and support staff don’t understand that “inclusion” means far more than just being in the same lecture room as everyone else; it means being able to partake fully in the life of the institution; joining the societies, enjoying the social life and being treated with informed respect” (Adams & Brown, 2006, pp. 17-18).

Institution of Higher Learning need to improve Deaf awareness and create an environment that reduces social isolation, making the institution a more inclusive and supportive place for Deaf and hard-of-hearing students. This study recommends that Institution of Higher Learning ought to provide staff, lecturers, and hearing students with frequent deaf awareness workshops. These workshops are designed to teach people about the rich history, language, values, and social norms of the Deaf community. These classes go beyond simply learning about hearing loss; they focus on the identity, experiences, and contributions of Deaf people. A study by Lee and Pott (2018) revealed exposure to a Deaf culture curriculum may promote positive attitudes and better cultural understanding toward Deaf people who eventually become professional colleagues.

5.5.4 Recommendations for further research

Since the present study was delimited to only one Institution of Higher Learning in KwaZulu-Natal and the participants that were included was a small number of Deaf students. The findings are not meant for generalisation. It is recommended that this study be replicated

elsewhere to include more Institution of Higher Learning with larger numbers of participants, including Hard of Hearing students.

5.6 Conclusion

The fundamental purpose of this study was to explore the experiences of Deaf and Hard of Hearing preservice teachers in an Institution of Higher Learning. The aim of the study is to determine the kind of support that Deaf or Hard of Hearing preservice teachers need for their learning and development. This study explored all opportunities and all challenges that Deaf or Hard of Hearing preservice encounter in their learning journey.

In chapter one the background to the study and statement of the problem was presented. An overview of the rationale for conducting this empirical research was identified. Research objectives and research questions as well as location of the study was discussed. Additionally, clarification of key concepts, synopsis of the theoretical framework, data analysis, limitations of study and the organisational structure of the entire thesis has been provided. Thereafter, in chapter two, the review of the relevant literature and history of Deaf education was discussed. This chapter also provided the laws that affect Deaf education, inclusive policies historical discrimination and marginalization among the Deaf community. The need for this research and the theoretical framework that framed this study were discussed.

Chapter three described the research design and methodology used in the qualitative study. It also provided how this methodological approach was used within the conceptual framework. Chapter four presented the detailed biographical information of the participants. Findings from the interviews, analysis of the findings and the themes that emerged were provided in this chapter. Chapter five provided a discussion of all the findings of the study. The themes that emerged and on the interpretation of the data in the chapter were discussed. Thereafter, all the recommendations were presented.

Although Institution of Higher Learning are gradually improving in absorbing students with disabilities into their environments, there is still a cry for the delivery of support services. The issues of inclusive education and its implementation still remain a challenge in Institutions of Higher Learning. Deaf preservice teachers anticipate the same kind of support they receive in High School, but sadly, when they enroll in Institutions of Higher Learning, this is not the case. This study highlights that although support services are provided for Deaf students, it is not adequate. There is a need to provide more interpreters, extra time for

assessments, and induction loop systems in lecture rooms. Moreover, it was also highlighted that there is a need for lectures to be trained in SASL and hearing students and staff to learn about Deaf culture.

In closing, I am hopeful that this study would provide information about the ways we can make Institution of Higher Learning academically and socially inclusive, not just equal or equitable, but fully accessible to Deaf students.

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APPENDIX A: Turnitin report

Deaf preservice teachers' learning experiences at an
Institution of Higher Learning

ORIGINALITY REPORT

13 %	%	13 %	0 %
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

APPENDIX B: Interview Schedule

1. What does being deaf mean to you?
2. What motivated you to study at this specific higher education Institutions?
3. How did you feel during the orientation and your critical first lecture?
4. Can you describe how your lecture room experiences have been this last year?
5. Can you describe how you felt included and/or isolated in various activities or in general?
6. Did you encounter any challenges when working in groups during your studies? Kindly provide examples
7. Do you have any issues with exams or tests, such as the format or language of the questions?
8. What are the differences between attending a hearing Institution of Higher Learning and attending a Deaf school with other Deaf students?
9. In the absence of a SASL interpreter, how do you communicate with hearing students and your lecturers outside the lecture room?
10. Have you ever felt different to hearing students? Explain why or why not.
11. What is the general level of awareness of your needs as a Deaf student among staff and students?
12. Is there any problem communicating with lecturers outside the lecture room? Describe the problem if any. How was the problem handled?
13. What are some of the resources and support services available for you and other Deaf students to successfully navigate a Higher Institutions academically and/or socially engage with others across campus?
14. What aspects of studying at a higher education institution were challenging for you? In terms of lecturers, locations, test and exam language, and other students
15. Have you experienced any particular barriers that prevent you from fully engaging in college activities? What are they and how do they prevent involvement?
16. Is a support service significant for you in the lectures and tutorials sessions? Which support service? Why
17. Do you think that you would be fully integrated in the learning process if the support service were not available? Describe
18. Please tell me anything you want to say about your experiences as a Deaf student at a Higher Education Institutions?

APPENDIX C: Reflective journal instrument

1. **Demographic Understanding:**

- What is the demographic makeup of the Deaf and Hard of Hearing preservice teachers' population at the institution?
- Are there variations in experiences based on factors such as age, gender, ethnicity, or degree of hearing loss?

2. **Accessibility and Accommodations:**

- How are Deaf and Hard of Hearing preservice teachers accommodated in the lecture room?
- How effective are these accommodations in facilitating learning?

3. **Communication Methods:**

- What communication methods do Deaf and Hard of Hearing preservice teachers prefer in various learning environments (e.g., lectures, seminars, group discussions)?
- How do different communication methods impact their learning experiences?

4. **Technology Utilisation:**

- What assistive technologies do students use, and how do these technologies support their learning?
- Are there any gaps or limitations in the availability or effectiveness of assistive technologies?

5. **Faculty and Staff Support:**

- How do faculty and staff members interact with Deaf and Hard of Hearing preservice teachers?
- Are there opportunities for faculty/staff training on Deaf awareness and communication strategies?

- How do faculty and staff attitudes and behaviours influence the learning experiences of Deaf and Hard of Hearing preservice teachers?

6. Social Integration and Inclusion:

- To what extent do Deaf and Hard of Hearing preservice teachers feel included in campus life and activities?
- Are there specific challenges related to social integration, and how are these addressed?

7. Academic Success and Progression:

- What are the academic achievement levels of Deaf and Hard of Hearing preservice teachers?
- Are there disparities in academic performance compared to hearing peers, and if so, what factors contribute to these disparities?
- What support mechanisms are in place to promote academic success and progression?

8. Peer Relationships and Support Networks:

- How do Deaf and Hard of Hearing preservice teachers interact with their peers?
- Are there formal or informal support networks available to them, and how do these networks influence their learning experiences.

9. Barriers and Challenges:

- What are the primary barriers and challenges faced by Deaf and Hard of Hearing preservice teachers in higher education?
- How do these barriers impact their overall learning experiences and academic outcomes?

10. Satisfaction and Feedback:

- How satisfied are Deaf and Hard of Hearing preservice teachers with their overall learning experiences at the institution?

- What feedback do they provide regarding areas for improvement or additional support?

11. Long-term Impact:

- How do the experiences of Deaf and Hard of Hearing preservice teachers in higher education shape their future career paths and opportunities?
- What recommendations can be made to enhance the overall learning environment and support mechanisms for Deaf and Hard of Hearing preservice teachers?

APPENDIX D: Informed consent

[REDACTED]
[REDACTED]
O [REDACTED] t
4037
23 April 2024

Informed Consent letter

Dear Research Participant

I hereby write this letter to request your permission to be the participant in my research study that I will conduct in your Institution of Higher Learning. Kindly receive hereof my details and a brief description on how the research will be conducted:

My name is Simi Laljith (student no: 223088131). I am studying towards a Master's Degree in Education. As a Master's student, I am required to present a dissertation on an area of interest in our field of study. My topic is, "*Deaf or Hard of Hearing preservice teachers' learning experiences at an Institution of Higher Learning*".

The purpose of the study is to explore Deaf or Hard of Hearing preservice teachers learning experiences in an Institution of Higher learning. The aim of the study is to determine the kind of learning support that Deaf or Hard of Hearing preservice teachers need and obtain for their development. The study has the potential to benefit Institution of Higher Learning by pointing out the challenges and opportunities that Deaf or Hard of Hearing preservice teacher's encounter in their learning journey. It will provide more thoughts and knowledge to empower future Deaf and Hard of Hearing preservice teachers about the Institutions of Higher Learning.

As a researcher, I am also a teacher in a Deaf school. Therefore, data will be collected through the use of semi-structured interviews while using sign language for communication. This will involve asking you open-ended questions. A video can be recorded on a voluntarily basis. The interview would be approximately an hour and could be split as you desire. All the interviews will take place at a time and place more convenient for you and will not disrupt your normal lectures. Secondly, Unstructured observations during lectures will take place. Whereas a researcher I will be observing all the interactions and also how you learn in the lecture room. All the details of the observations will be discussed with you prior to the observation taking place.

Other

Lastly, more data will be gathered through reflective journals. It's important as a researcher to consider my own educational experiences which is written records to get insight into my actions, thoughts, and emotions during the process of gathering information.

It is important for you as a participant to understand that:

- a) Your identity will never be exposed. Pseudonyms will be used when writing this report.
- b) If during the research study you feel like withdrawing due to certain circumstances, you have a right to do so.
- c) In cases where you don't want to answer questions posed, you are free to remain silent.

The information that will be collected will be used for research purposes only.

Kindly receive my contact details as well as my supervisor's:

Student: Simi Laljith: [REDACTED] / s [REDACTED]

Supervisor: Dr Z Zama: 031 260 3900/ ZamaZ@ukzn.ac.za

School of Education

Edgewood Campus

University of KwaZulu-Natal (UKZN)

You can also contact our research office:

HSSREC Research Office

Tel.: 031 260 8350/4557/3587 Email: hssrec@ukzn.ac.za

Yours faithfully,

S. Laljith

Student no: 223088131

DECLARATION BY PARTICIPANT

I..... (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire and this decision will not affect me negatively. I understand that every effort will be made to keep my personal information confidential. I also understand that efforts will be made to provide me with feedback of the results of the completed research project.

Signature

Date

ADDITIONAL CONSENT TO VIDEO RECORDING:

Communication will take place using Sign language. Video recordings will help to capture visual elements, including facial expressions, body language, and sign language gestures.

I hereby agree to the video recording of this interview for the purposes of data capturing.

I understand that no personal identifying information will be released in any form. I also understand that all recordings will be kept securely and be destroyed after all data capturing and analysis has been completed.

If you are willing to be interviewed, please indicate (by ticking as applicable) whether or not you are willing to allow the interview to be recorded with the following equipment:

	Willing	Not willing
Video Equipment		

Signature

Date

APPENDIX E: Ethical clearance certificate



31 May 2024

Simi Laljith (223088131)
School of Education
Edgewood Campus

Dear S Laljith,

Protocol reference number: HSSREC/00006950/2024

Project title: Deaf or hard of hearing preservice teacher's learning experiences at an institution of higher learning
Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 25 April 2024 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted FULL APPROVAL.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

Incidents of adverse events and serious adverse events (AEs and SAEs) should be reported in writing to HSSREC, the study sponsors, and any regulatory authority (where appropriate), within 7 working days of the occurrence for local sites and 14 days for all other South African sites.

This approval is valid until 31 May 2025.

To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close out report to be submitted when study is finished.

HSSREC is registered with the South African National Health Research Ethics Council (REC-C40414-040).

Yours sincerely,



Professor Dipane Hlalele (Chair)
/dd

Humanities and Social Sciences Research Ethics Committee

Postal Address: Private Bag X54001, Durban, 4000, South Africa

Telephone: +27 (0)31 260-8350/4557/3597 Email: hssrec@ukzn.ac.za Website: <http://research.ukzn.ac.za/Research-Ethics>

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville

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APPENDIX F: Gatekeeper's letter



6 March 2024

Mrs Simi Lalijith (SN 223088131)
School of Education
College of Humanities
Edgewood Campus UKZN
Email: [REDACTED]

ZamaZ@ukzn.ac.za

Dear Mrs Lalijith

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN), towards your postgraduate degree, provided Ethical clearance has been obtained. We note the title of your research project is:

"Deaf or Hard of Hearing preservice teacher's learning experiences at an institution of Higher Learning."

It is noted that you will be constituting your sample by conducting interviews with Deaf and Hard of Hearing pre-service teachers from the 2nd year of study (Zoom, Skype or telephone interviews recommended) on the Edgewood campus.

Please ensure that the following appears on your notice/questionnaire:

- Ethical clearance number;
- Research title and details of the research, the researcher and the supervisor;
- Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire;
- gatekeepers approval by the Registrar.

You are not authorized to contact staff and students using the 'Microsoft Outlook' address book. Identity numbers and email addresses of individuals are not a matter of public record and are protected according to Section 14 of the South African Constitution, as well as the Protection of Public Information Act. For the release of such information over to yourself for research purposes, the University of KwaZulu-Natal will need express consent from the relevant data subjects. Data collected must be treated with due confidentiality and anonymity.

Yours sincerely

[REDACTED]
MR MA TUFTS
Director Governance & Administration

Office of the Registrar

Postal Address: Private Bag 854001, Durban, 4000, South Africa

Telephone: +27 (0)31 260 1971 Email: registrargukn.ac.za Website: www.ukzn.ac.za

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville

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APPENDIX G: Language clearance certificate

