



Impact of delay in sign language acquisition on writing development: The Case of a Deaf Child

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ABSTRACT

The amount of language a deaf child is exposed to during their language developmental milestones has a strong influence on their ability to write. Deaf children are frequently exposed to Bhutanese Sign Language (BhSL) at school while simultaneously learning English literacy skills. As a result, the current study employed a contextualized empirical study to examine the existing knowledge to look into what is known about the impact of delayed sign language acquisition in deaf children on their writing development. This qualitative study investigated a socially constructed knowledge claim originating from an interpretive philosophical standpoint. "Purposive criteria sampling" was used to choose the six participants. Data is collected via semi-structured interviews, participant observation, archival documents, and visual data, as well as participant observations and visual data (photovoice and videotapes). Construct validity was ensured through the triangulation of multiple sources of evidence, chains of evidence, and member checking; internal validity was ensured using well-established analytic techniques like pattern matching; external validity was ensured through analytic generalization, and reliability was ensured through case study protocols and databases. The outcomes of this study, which were analyzed using thematic analysis and manually coded themes, revealed that late exposure to Bhutanese sign language impacts the development of linguistic structures, particularly those related to the acquisition of a written form of the second language, vocabulary, and grammatical structures. Lack of shared language, deprived incidental learning, parental support in language and literacy development, and early intervention are all factors that contribute to a better understanding of why deaf children struggle with writing competence in English and Dzongkha. The study adds to the increasing body of evidence that early exposure to Bhutanese sign language (BhSL) helps deaf children develop their writing skills. Because language and literacy are learned at the same period, the previous one's competency serves as a bridge between the two.

Keywords: Deaf, language development, literacy development, writing competence, delay, incidental learning, shared language, home signs, Bhutanese sign language

Introduction

The primary problem explored in this study is the challenge faced by a prelingually deaf child in writing development due to delayed language acquisition. Unlike spoken or sign language, writing is an important form of communication as it leaves a permanent record, allowing us to communicate over space and time (Mayer, 2007). Writing as the researcher states is the most demanding complex cognitive activity. Additionally, it has been well documented in the literature that many deaf children have struggled with learning to write and that many deaf children do not write well (Mayer, 2007; Williams &



[Mayer, 2015; Strassman & Schirmer, 2012](#)). Despite various findings from the literature, it cannot be generalized in the context of deaf children in Bhutan. According to Thinley and Bidha (2010), the foundation of literacy development is the oral language which builds the proficiency of reading and writing development. However, in the case of deaf students in Bhutan, the circumstances are different. Due to their hearing loss, deaf people have little access to spoken languages, and BhSL is at its infancy and still a developing language that is not shared across deaf children of hearing parents. As a result, deaf children's basic literacy development potential is limited. Delay in accessible language, therefore, creates a gap that requires explanation and probable support once the parameters are understood.

According to Humphries et al., (2012) oral languages are not accessible to most deaf infants and children. A lack in the acquisition of the first language (sign language) is apparent in a deaf child's language developmental milestones. Similarly, the majority of the deaf children in Bhutan do not have access to a language before arriving at school ([Chozom, 2019](#)), and for some of these children, access and interaction with language are not experienced until their teenage years, when they are admitted in school. Further, it is emphasized that deaf and hard-of-hearing children often experience a delay in language development, explicitly with sign language acquisition which consequently causes a delay in literacy development ([Lederberg et al., 2013](#)). Lederberg et al. (2013) also bring out strong evidence on how a delay in access to language can have long-term negative developmental impacts on the writing competence of deaf children. Considering the need for deaf language, it is emphasized that the Ministry of Education (MoE) shall develop specific ECCD interventions for providing access to sign language from the moment of diagnosis for children with deafness ([GNHC, 2019](#)). However, there is a lack of adequate studies being conducted in the Bhutanese context to critically examine and understand the relationship between language deficiency and the development of writing in deaf children. Therefore, it is crucial to emphasize on the explanation of how the delay in sign language acquisition impacts the child's writing competencies. Moreover, Mayer (2007) states that writing for deaf children is necessary for everyday interactions allowing them to review what they want to convey and it also plays a critical role in deaf education. So, intent to carry out a contextualized study on the impact of a deaf child's delay in sign language acquisition on writing competency was specifically proposed.

Context of the Study

To meet the requirements of deaf children, a unit under Drukgyel Lower Secondary School in Paro dzongkhag was established in 2004. The Deaf Education Program began with a comprehensive strategy that included boarding facilities for students. In February 2004, the Deaf Education Unit (DEU) began its first academic year with only ten deaf students ([Wangsel Institute for the Deaf, 2019](#)). DEU was later recognized as a separate special school from Drukgyel Lower Secondary School and was renamed Wangsel Institute for the Deaf (WI). With 55 boys and 49 girls presently enrolled, WI is Bhutan's only Deaf school ([MoE, 2020](#)). Soon after the deaf unit was established, the need for a language for deaf children and teachers to communicate surfaced. Teachers and deaf students collaborated to create sign language as a medium of communication. The stand-alone program aimed to provide specialized training in the field of deaf education as well as the development of Bhutanese sign language (BhSL) ([Houge, 2013](#)).

When deaf students join the school for the first time, they either have no language or can only use a few home signs and gestures. Despite the fact that these students have no acquired language, they are taught the modified general curriculum using BhSL as the medium of instruction. Children who are deaf or hard of hearing have varying levels of access to sound, which is determined by a variety of variables such as degree of hearing loss, use of assistive devices like hearing aids, and cochlear

implants. It is argued that if access to sound is limited to any degree, so is access to spoken language, and if access to spoken language is limited, so is the development of written language (Giddens, 2009). Therefore, this research focuses on determining how a deaf child's delayed language acquisition impacts his writing competence. This study was conducted in WI for the Deaf, Paro dzongkhag (district). The present case study features a 17-year-old 'prelingually deaf child' (see Appendix A) who chose an academic path rather than a vocational path after completing tenth grade. The study focused on the lived experiences of the prelingually deaf adolescent born to hearing parents who were not acquainted with BhSL during his language developmental milestones.

Literature Review

Hearing loss is a disability that causes impairment to the development of speech, language, and cognitive skills in children, especially if commencing prelingually (Mackenzie & Smith, 2009). A person who is not able to hear with the normal hearing-hearing threshold of 20dB or better in both ears is said to have hearing loss (WHO, 2019). Hearing loss in people can range from mild, moderate, severe to profound (Wangchuk et al., 2020). A person who has no functional hearing is called 'deaf' and those with little residual hearing, who hears with great difficulty may label themselves as 'hard of hearing' (WHO, 2019; Nodoushan, 2008; Mayer, 2007; the University of Washington, n.d; Blamey et al., 2001). There are around 5800 deaf people recorded in the latest census data of Bhutan (Joshua Project, n.d.), and most of them are without language. Access to Bhutanese sign language (BhSL) is limited only to those who go to school.

However, according to Dorji and Schuelka (2016), though the importance and value of attending school are widespread, children with disabilities not only face challenges getting admitted in the schools but also in receiving quality educational services. It is worth noting that there is just one deaf school in Bhutan that caters to the educational requirements of children who are deaf and hard of hearing (DHH). Access to this school from all over Bhutan is a concern for parents and deaf children in Bhutan. Furthermore, the majority of children enrolled in Bhutan's only deaf school did not have access to a language prior to arriving at school (Chozom, 2019), and for some of these children, access and contact with language did not occur until their adolescence. Hence, this case study investigated current knowledge about how these deaf children's access to language was limited and its influence on literacy development as they entered school. Language and literacy development are crucial areas of early childhood progress that go on to shape one's adult life (Nutbrown, 2011). It involves skills that are used to communicate with others and the ability to read and write. According to Mayberry (1993), it is the unique conditions of sign language development that led the researchers to examine if the long-term result of language acquisition beginning beyond infancy is the same regardless of whether it is a case of first- or second-language acquisition. Most children develop these abilities from early infancy through pre-school and thus, transition smoothly into more formal and advanced literacy skills development in school (Allen and Kelly, 2015). However, this is not the case with deaf children in Bhutan. Deaf children face difficulty when multilingual subjects are taught through written language (Lhaden, 2021). It is early identification that boosts educational and language expectations for children who are DHH, allowing them to achieve comparable abilities as hearing peers (Mayer, 2007).

Language development in deaf children

Language development is a critical development aspect since human beings acquire the capacity to learn complex processes of discovery, collaboration, and inquiry facilitated through language (Manitoba Education, n.d; Ramacciotti & Eccles, 2019). Language may be a biologically predetermined skill; however, it is argued by Mayberry and Lock (2003) that language capacity development may be an epigenetic process in which early life contextual experiences drive and organize the development of this complex behavioral and neocortical system. The extent to which age constrains language learning, often known as a sensitive or critical period for language acquisition, is an essential feature regarding the nature of language acquisition (Mayberry & Lock, 2003). However, language development continues throughout one's lifespan, the most critical period for language acquisition occurs between infancy and five years of age (Bonvillian et al., 1983; Larney, 2002). The studies show that the impact of age of acquisition on the long-term result of language learning may be shown not only in spoken languages but also in sign languages (Mayberry, 1993). In addition, children who are prelingually deaf are likely to have reduced access to language during this critical window, which leads to linguistic deprivation (Humphries et al., 2012; Scott & Dostal, 2019; Ramacciotti & Eccles, 2019; Mayberry, 1993). Moreover, when children are deprived of access to language in their critical language acquisition period, they are likely to face lifetime stunted language abilities and literacy development (Mayberry and Squires, 2006; Petitto, et al, 2001; Ramacciotti & Eccles, 2019). However, Dostal and Wolbers (2014) argue that DHH children may exhibit language deprivation because they lack sufficient intelligible input to properly develop an expressive language (p.247). According to Hauland and Holmstrom (2019) sign language is the language that deaf children adapt and learn spontaneously; just like the hearing children adopt the spoken language of their environment. While various forms of sign languages have existed in the communities for centuries (Power et al., 2020), Bhutan's sign language called the Bhutanese Sign Language (BhSL) is in its emerging stage (Lhaden, 2021). At present, BhSL is in the process of documentation through qualitative data collection process from a biological medium of the deaf community in Bhutan (D. Tshering, Principal of Wangsel Institute for the Deaf, personal communication, 9th September, 2021). Deaf children learn sign language in the same way as hearing children learn spoken languages, through interaction with fluent sign language users (Schick, 2003). Deaf children born to hearing parents in Bhutan, on the other hand, are rarely exposed to BhSL as their first language. Being proficient is a long way off, most hearing parents aren't even acquainted with the basics of sign language.

The DHH children are visual learners and communicate through visuals. Unlike spoken languages which include mechanisms of auditory processing and speech production, sign languages are perceived visually, and their articulation includes systematic use of parts of the body and space (Kovacevic et al., 2019). The findings in conjunction with the literature indicate that all children, especially children who are deaf and hard of hearing, benefit from early exposure to the language. Children with hearing loss may have little exposure to spoken language, and they may lack language models for signing languages (Dostal & Wolbers, 2014). Similarly, the researchers mention that DHH students may enter school without a complex expressive language that may be utilized for conversation or learning, and are thus classified as dual-language students. In the case of DHH children in Bhutan, they may not be exposed to BhSL during their language acquisition period whereby they may enter school with limited sign language models for communication and learning. Learning their first language that is BhSL and second language that is written English and Dzongkha may happen simultaneously for these children in school. These children are confronted with challenges when they learn two languages that differ in their modality of expression (Plaza-Pust, 2016).

Learning the first and second languages at the same time is interwoven, and a deficit in one can lead to misunderstandings and communication gaps in the other (Even if you have an understanding of syntax and pragmatics, you will not be able to understand what people are saying until you have semantic knowledge (Mayberry & Lock, 2003). For optimal communication and literacy development, children need balanced development in all subsystems of language; unfortunately, this is not often the case for deaf children in Bhutan. Moreover, linguistic awareness is an important factor in a learner's language performance and acquisition, and it is frequently linked to the educational background (Murphy, 2003). However, it is also known that linguistic awareness influences phonological, pragmatic, and sociolinguistic knowledge as well as linguistic structures and semantics, and cross-language influence can occur in any of these domains. To communicate with deaf children, natural gestures and home signs are frequently used by hearing parents. Home signs according to Morford and Wood (2016) are a linguistic system that is similar to language in many ways but fundamentally different in that it is produced rather than being acquired from a whole language model. However, according to Mayberry and Lock (2003) this expressive gesture, known as home signs, does not appear to provide enough linguistic experience for the capacity to acquire language to develop adequately. Furthermore, the researchers state that the meaning cannot be transmitted during a conversation engagement using home signs and natural gestures without syntactic or pragmatic abilities. The gap in understanding the contextualized phenomenon of how far deaf children are provided with linguistic awareness to develop their language at home and school is crucial.

Literacy development in Deaf children

Literacy is the ability to identify, understand, interpret, create, communicate, and compute, using printed and written materials associated with varying contexts (OECD as cited in Kennedy et al., 2012, p. 38). Hence, the development of early language skills appears to be particularly important in the area of literacy development for children. Briggles (2005) and Nodoushan (2008) argue that literacy development in children who are deaf or with hearing impairment is a multifaceted issue. Two major areas affect literacy development—the general underlying language abilities and the ability to use spoken phonological knowledge for decoding words (Lederberg et al., 2013). The extent to which literacy delays occur in students who are DHH is vast (Davenport et al., 2017). Deaf education in Bhutan is in its developmental stage (Wangchuk et al., 2020), and there are lingering questions on "How do deaf children learn if they cannot hear? Do deaf children think in words or signs?" Research findings from Marschark and Hauser (2011) state that the cognitive processing of a deaf child and that of a hearing child are quite similar. Language provides a structuring role in cognitive development; however, it is a delay in language acquisition that leads to deferment in cognitive processing, and psycho-social problems including academic fiasco (Ramacciotti & Eccles, 2019). However, Hall et al. (2019), emphasize that the language paths of children who are DHH are often different than those of hearing children, and it is important to note that children who are DHH are capable of attaining age-appropriate language levels, provided language is accessible. Since deaf education and BhSL is still at its infancy stage in Bhutan, children's lack of success in academics remains a problem for administrators, teachers, parents, and the deaf children themselves. In some cases, students are expected to learn content through a language they do not yet master, which bears a risk of underachievement. Hence, language delay and its impact on literacy development are pressing issues and consequently, it is among the most researched topic in the areas of deaf education (Humphries et al., 2012; Scott & Dostal, 2019; Ramacciotti & Eccles, 2019; Mayberry, 1993).

Despite several studies being conducted on the literacy development of a deaf child, contextualized issues of literacy development in deaf children of Bhutan still exist. So, there is a need for further research in the context of deaf children in Bhutan.

Learning to read and write

Children who are DHH are likely to encounter challenges in language and literacy development as a consequence of their hearing loss ([Williams & Mayer, 2015](#)). Children who are DHH lack literacy skills especially in reading and writing, which holds them back in their academic achievement and later struggling in the ever-increasing competitive job market in their adulthood. Lack of language limits reading and writing development because of the missing element of “phonological processing” in deaf students ([Malik & Din, 2019](#)). This is why children who are deaf find reading and writing challenging ([Andrews et al., 2016; Malik & Din, 2019; Williams & Mayer, 2015](#)). According to Webb and Lederberg (2014), poorer phonological awareness of deaf children hinders their ability to guess the order of sounds and poses difficulties in identifying and remembering orthographic forms of words. In addition, Mayer (2007) and McCurdy et al. (2008) have identified severe language deficiencies as a factor contributing towards a limited use of higher forms of language, including cohesion and coordination.

However, despite the challenges in both learning to read and write, learning to read has gained more attention in research than the latter. Nonetheless, there is a need to be achieved in researching writing for deaf children since deaf children are significantly lagging in aspects of conventional writing as compared to their hearing peers ([Malik & Din, 2019](#)).

Writing Competence in deaf children

As the world has become increasingly text-oriented, writing has been regarded as one of the most important skills. Writing is an essential part of the language. When a child writes, his or her thoughts and knowledge are combined to form a unique meaning ([Jones, Reutzel, & Fargo, 2010; Albertini & Schley, 2003](#)). Writing is a natural, subconscious act for skilled and experienced writers, but it is a hard process for children to learn this ability, involving both cognitive and motor skills. As a result, students rate writing as more challenging than listening and reading ([Berman & Cheng, 2010](#)). Children's writing development is dependent on their understanding of the ‘alphabetic principle’, the idea that letters and letter patterns represent the sounds of spoken language ([Reading Rockets, 2018; Albertini & Schley, 2003](#)). It is hypothesized that deaf children have trouble writing because they cannot establish precise alphabetic principles due to their lack of hearing abilities. However, in the case of deaf children in Bhutan, they have not acquired the alphabetic principle—a foundational conceptual milestone that is requisite in learning to read and write. Furthermore, while learning a new language, most pupils are least proficient at writing ([Nesamalar, Saratha & Teh, 2001](#)). As writing is an ability that develops over time, not just in primary school, but also in the early stages of life. Moreover, the literature states that the age at which a second language is learned also has a significant impact on the long-term result of the learning process ([Scovel, 1989 as cited in Mayberry 1993](#)). It was found that children who begin learning a second language during infancy outperform their counterparts who begin learning it after a childhood on several linguistic metrics when given equal practice and training ([Mayberry, 1993](#)).

Sign languages do not have a written form, but is a fully accessible language to the DHH through which it is possible to mediate understanding, draw on prior experiences, and engage critical thinking and reasoning ([Allington & Johnston, 2002; Vygotsky, 1987; Wertsch, 1991 as cited in Dostal & Wolbers, 2014](#)). Similarly, in the deaf school of Bhutan, BhSL taught

to DHH children do not have a written form, thus, DHH children who come to school with no prior languages find writing an extremely challenging task. If one's ability to hear is impeded, one's ability to understand spoken language will be affected as well. Many deaf children never learn to write something much more complicated than simple sentences, and they struggle to add tenses to verbs ([National Institute on Deafness and other Communication Disorders, 2004](#)). Deaf children experience challenges with vocabulary and grammatical constructs; as a result, stumbling writing behaviour remains a subject of concern ([Malik & Din, 2019](#)). They have difficulty learning the functional categories and relatively basic morphology of English, and they generate it in a limited, fragmented manner, which may be attributed to the little input they receive, and the issue of variation in input makes interpretation difficult ([Schick, 2003](#)). Despite specialized teaching and support, children tend to have a significant deal of difficulty acquiring certain components of English grammatical structures when transformed to a visual form ([Schick, 2003](#)). Correspondingly, Mayberry and Lock (2003) reported that children with no early language demonstrated poor levels of grammatical judgment accuracy, suggesting that they have inadequate or lacking representations of English syntax for both basic and complex structures. Furthermore, when hearing people converse to each other without making their discourse accessible to deaf people (whereas a hearing spectator might readily follow the conversation), deaf people miss out on incidental learning chances ([Peter et al., 2010](#)). However, it is argued that in the absence of direct instruction or substantial language exposure, it is uncertain how deaf children acquire the ability to learn words incidentally ([Brackenbury et al., 2005](#)). Therefore, if access to spoken language is constrained, so is the development of written language. According to Williams and Mayer (2015), deaf children learn to write through an encoding process that incorporates both visual and orthographic elements. However, at school, writing functions are frequently more explicitly defined, and the forms are more cognitively demanding ([Albertini & Schley, 2003](#)).

Therefore, more contextual research is needed to understand the relationship between late language acquisition and writing development in deaf children. The necessity to explore the comprehensive knowledge of challenges that deaf children face in their writing development as a result of their late language acquisition is required.

Methodology

This case study research can be oriented from a realist or positivist perspective, in which the researcher believes that there is a single reality that is independent of the individual and can be grasped, studied, and measured, to a relativist or constructivist perspective, in which the researcher believes that there is a plurality of realities that can be grasped, studied, and measured ([Yin, 2013](#)). This study attempts to clarify the nature of this case study research and how the ideas are formed into knowledge from the outcomes of this study by identifying philosophical views. Despite a significant body of research in deaf education, in-depth contextual information generated from the constructivist approach to support deaf children's language and literacy development is lacking. The goal of this case study research is, therefore, to look into the idea that knowledge is socially created, which comes from a constructivist philosophical standpoint ([Adom et al., 2016](#)).

Research Design and Method

According to Yin (2018), the research design is "a logical plan for getting from here to there, where here may be defined as the set of questions to be addressed, and there can be some set of conclusions regarding these questions" (p.60). The "how" and "why" questions are more explanatory and likely to lead to the use of a case study, history, or experiment as the preferred

research method because such questions deal with the tracing of operational processes over time, rather than mere frequencies or incidence (Yin, 2018). Thus, the goal of this research is to explore and comprehend “how” children who are deaf are deprived of their first language acquisition and “why” delayed language has an impact on their writing competency.

The research's philosophical foundation is that 'delay in sign language learning impacts writing ability,' which is based on deaf children's lived experience. This study employed a qualitative strategy to investigate the influence of language delay on the deaf child's writing ability by doing literature-based research, primary data analysis, and in-depth interviews to answer the research questions. According to Baxter and Jack (2015), the qualitative case study technique allows researchers to perform an in-depth examination of complicated phenomena within a given setting. The reason for choosing this research technique over others is that qualitative research ensures that the topic is investigated through a number of lenses rather than just one.

Population and Sampling

The population in this study consist of six participants namely the deaf child, teachers of the child, a member of the BhSL research team, and the mother of the child. The participants were identified and selected through ‘purposive criterion sampling’, participants who support understanding the research problem and questions (Creswell & Creswell, 2018). Purposive sampling was used to narrow down to a smaller group of participants. These participants are only deemed eligible if they are in direct contact with the case child. In total there are 9 participants consisting of subject teachers of the child, BhSL research team member, school principal, and the child’s mother. This involves identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest (Merriam, 2002).

Data Processing and Analysis

Data for this study were collected through in-depth, semi-structured interviews of the participants, direct observations of the participant’s learning process, and documentation of the achievable records and visual data (photovoice and videotaping).

Yin (2018) emphasizes the relevance of four criteria in data processing: construct, internal, and external validity, as well as reliability, which is "essential to case study research" and "used to assess the quality of most empirical social research." (p.78). He advises case study researchers to keep these factors in mind when planning and carrying out the study. Case study researchers must also ensure construct validity (through the triangulation of multiple sources of evidence, chains of evidence, and member checking), internal validity (through the use of established analytic techniques such as pattern matching), and external validity (through analytic generalization), and reliability (through case study protocols and databases) according to Yin (2018).

The consistency and repetition of producing a case study's results throughout comparable contexts are referred to as dependability (Yin, 2018). As a result, for comparable circumstances, the study employed many sources of information, as indicated previously in the data gathering procedure, because having a single source of evidence is less trustworthy. Construct validity will be ensured by using numerous sources of evidence, such as interviews, papers, field notes, and memoranda, as Yin (2018) emphasizes. Participants were asked to read the interview transcripts and draft reports so that members may double-check them. The goal would be to check that the results are consistent within the data obtained, rather than focusing on repeated outcomes (Yin, 2018). In connection with using multiple sources, the study established a chain of evidence and framed data triangulation process to enhance the credibility of this study. To make this study more reliable with stronger findings, it also addressed the rival plausible explanations by carefully considering and identifying potential arguments from the literature and other sources. In addition, a pilot studies with a similar child who was born prelingually deaf, before the

legitimate case to ensure reliability and construct validity. According to Yin (2018), qualitative researchers should offer a detailed description of their methods, including the use of participant statements, so that readers may judge the study's credibility for themselves. Similarly, participants' interview extracts were subjected to thematic analysis (Braun & Clarke, 2006) by manual coding. Thematic analysis, according to Braun and Clarke, (2006) "is a method for identifying, analysing and reporting patterns (themes) within data." (p. 89). Data were identified, analysed, and patterns (themes) within data were reported using thematic analysis (see Appendix E) because it organizes and explains your data collection in (rich) detail (Braun & Clarke, 2006). This starts with data gathering and continues through transcribing, reading and re-reading, analysing, and interpreting the information (Evans & Lewis, 2018). It is through "Repeated examining and sorting of the voluminous and detail-rich data are important to the process of analysis," Crowe et al. (2011, p.6). The Semi-structured Interview transcripts and the documents produced codes, which were then analyzed for common sub-themes. The sub-themes were constructed based on the frequency of codes generated by participants' responses to the interview questions, documents, and observation field notes. The transcripts were reviewed and reread multiple times to determine if the various sources corroborate one another, and as Evans and Lewis (2018) explain, this will affect our ideas about the data and what you believe is worthy of a theme.

Findings and Discussion

affects writing development, influence of cross linguistic approach, lack of early intervention in language and literacy development, and strategic writing instructions to enhance writing development. These themes emerged from the three research questions that

One of the primary goals of this explanatory study was to determine the variables that contributed to the delayed acquisition of the first language and their influence on the development of the second language, written English and dzongkhag. All interview excerpts, transcribed semi-structured material, archival records, and documents were rigorously coded and then subjected to thematic analysis (Braun & Clarke, 2006) to derive the goals. This process resulted in the emergence of five thematic categories (see Figure 1) representing the data collected namely deprived first language acquisition that influences second language development, simultaneous approach that guided this study.

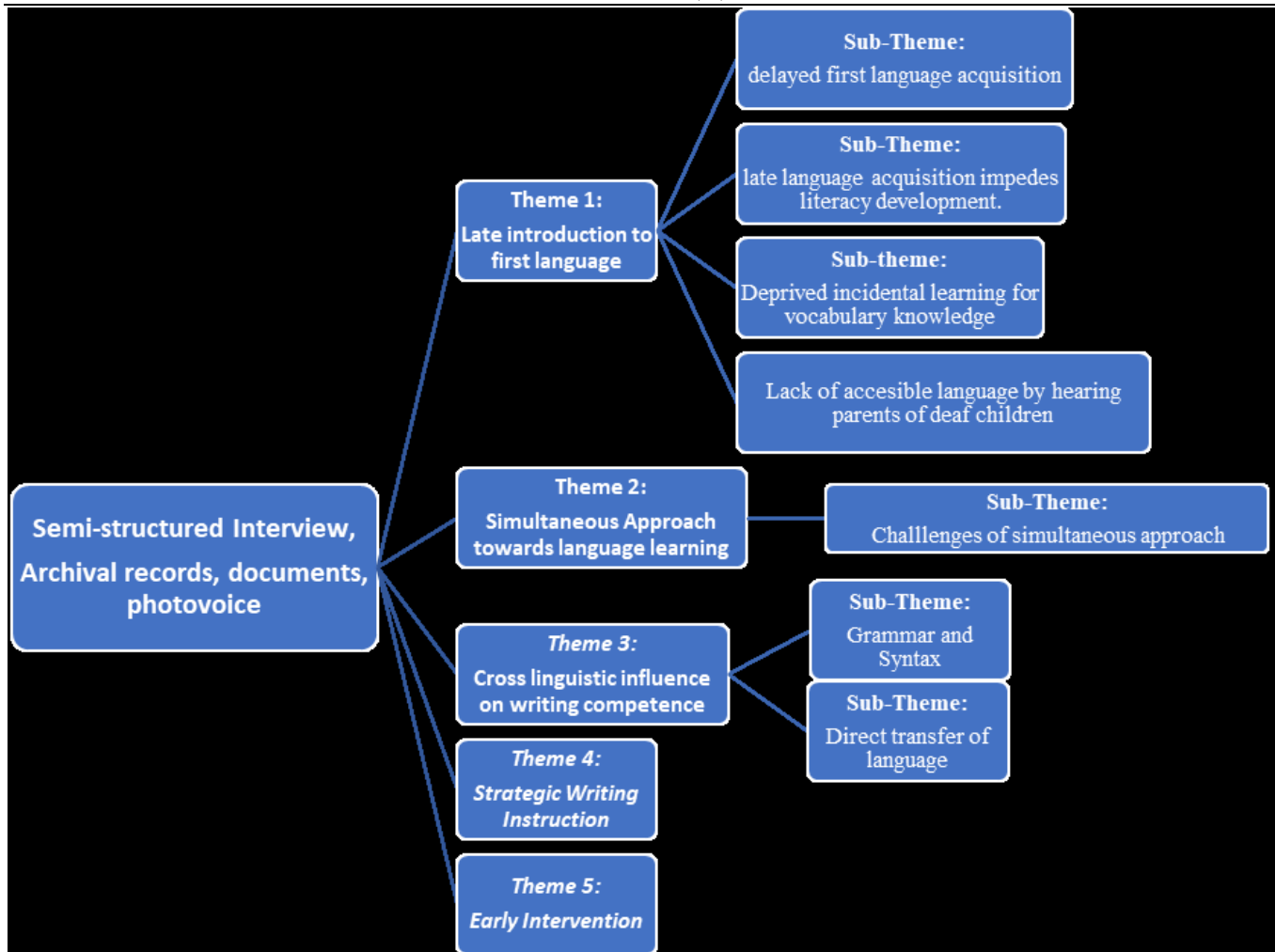


Figure 1: Results of thematic coding

Late introduction to first language

At a very young age, children often learn their native language freely and spontaneously (Ramirez et al., 2012). However, most deaf children have had limited access to language or no language input at all during their language development milestones. BhSI, the first language of deaf children, is typically delayed until they start school. As a result, the findings address the effect of late language acquisition in deaf children.

Delayed First language acquisition

The interviews conducted with all nine participants confirmed that the deaf child was deprived of first language acquisition by the fact that it was introduced only after they join the institute. For example, it was argued by the teacher that “Though we have Bhutanese sign language, children who are deaf are not aware of their language when they came to school nor are they aware of their language from birth...” (T1). Moreover, the child confirms that he used home signs because their first language was inaccessible. He claims that “...from birth but my sign language during that time was natural sign language because my parents only know the natural signs or gestural signs.” (C) Similarly, the school principal emphasizes how the child arrives at school with no language or only a few home signs:

“Now, by looking at these we have realized that eh... the signs that some of the deaf students when they are first admitted here are just home signs, pointing and all. It is not a language. eh... Forgot about that, they don't even know their names when they first arrived here. So, even this is the indication that they don't have language.” (Pr)

However, as the BhSL researcher emphasizes, such home signs and natural signs are not a language. She argues that “Bhutanese sign language is a structured language with unique grammatical features” (BR) which emerged among deaf communities in Bhutan.

Late language acquisition impedes literacy development

The delay in first language acquisition posed challenges in literacy development. A teacher asserted that “...teaching deaf in writing is very challenging because firstly, their language... delay in acquiring the language uhhh... Not only that they.... uhh ...their language is BhSL... which is delayed”. (T2) Furthermore, the child reports that the language his family uses at home is not accessible to him and that no learning has occurred to him. He unequivocally claims that “It was silent, they were working and I simply used to play. There was no learning.” Therefore, it can be argued that delay in initial language acquisition impedes the basis of literacy development in deaf children and acquiring it in the early years has immense benefit for both the teachers and deaf children in the teaching and learning process. On the contrary, the BhSL researchers note that “.... the first language of the deaf children, if it is fully acquired, it lays the foundation for the literacy as language builds language”. (BR) It is language that become the basis for literacy development in deaf children. Language becomes the cornerstone for literacy development in deaf children.

Lack of accessible language by hearing parents of deaf children

It was generally felt that the delay in first language acquisition was attributed to lack of access to first language within the family and deaf community. These parents used oral language and lip reading and gestural signs where applicable and used differently by different parents to communicate to their deaf child. For instance, a deaf child's mother stressed about teaching oral language and lip reading during early childhood without much success:

“So out here we use oral language and We taught him orally, letting him read our lips. He only uses the words ‘APA’ then ‘AIE’ and when he was three years, he used the word ‘AU’, from there he could never speak.” (CM)

However, it was reported that the child though introduced to oral languages by his parents did not help him due to his hearing loss and the difficulty in lip-reading. The child said, “... I tried learning through a lip-reading. However, it is of no use to me... My parents don't understand sign language.” (C) The lack of understanding of first language in the parents made it difficult to communicate.

Deprived incidental learning for vocabulary knowledge

Hearing children may acquire a lot of information even if they are not directly communicated with, but deaf children are not only deprived of language, they are also robbed of incidental learning during their language acquisition stages owing to a lack of inaccessible shared language. Since they are deprived of incidental learning, most of the terms are new to them and as the child remarks “.... when it comes to writing there are many new words and rules which are difficult, I can't” (C) Deaf children lack in vocabularies and faces difficulties as emphasized by the teachers; it is stated that “.... and their learning is slow than on top of that, in writing... they have to limited vocabs... which makes writing difficult for them.” (T2)

Incidental learning along with lack of auditory inaccessibility make vocabulary learning challenging for the deaf children as asserted by teachers:

“Usually when we teach Dzongkha we face lots of challenges la. We face lots of difficulties because for Dzongkha we have teach through sounds. Just to teach a word to students, while introducing the word, the words in Dzongkha are usually taught through sounds and these children with disability, since they do not have the hearing abilities, it is very challenging to teach even a word to these students.” (T1)

Deaf student's first language has nothing to do with sound, but their second languages, written English and Dzongkha, are heavily influenced by sounds. Teachers have significant difficulties in such situations, a teacher claims that “Specifically, in spellings it is very challenging for them because they do not have to auditory perceptions of the letter sounds, so I feel that they face difficulty with the spellings” (T1). A key difficulty in deaf children's vocabulary development is a lack of letter-sound correspondence.

Simultaneous Approach towards language learning

Simultaneous approach is a method used in schools, where deaf students are often exposed to BhSL while also developing literacy skills through written English and Dzongkha. Many deaf children who started school with no prior first language have a variety of issues when they are exposed to second language. As a result, the study's findings highlight the challenges of learning first and second languages simultaneously.

The challenges of simultaneous approach

When a deaf child starts school, he is not only exposed to his first language (see Figure 2), but also to a second language (see Figure 3). A teacher claim that “.... they have to learn so many languages” (T2), therefore, deaf children experience difficulty when learning their first language alongside their second language, which has syntactically distinctive grammatical components. However, another teacher argues that “BhSL would have aided the child's written English and Dzongkha skills if it had been learned sooner” (T3). If BhSL had been accessible before written language, it would have helped the child grasp better, establishing a solid foundation for writing development.



Figure 2: The child using his first language BhSL in the classroom



Figure 3: The child reading and writing English (Second language)

Cross linguistic influence on writing competence

CLI is often described as the influence that knowledge of one language has on an individual's learning or use of another language, and this influence can entail numerous aspects of language (James, 2012).

Influence on grammar and syntax of written language

From the archival documents and through observation it was evident that deaf children lack the sense of grammar and the syntax of the sentences while writing (see Figure 4). In agreement, a teacher also claims that “They lack vocabularies which lead them to struck at the course of expressing their thoughts. They have no grammar structure instincts in their heart.” (T4) Similarly, a teacher expresses her displeasure, noting that “It is often confusing to read their sentences.” (T3)

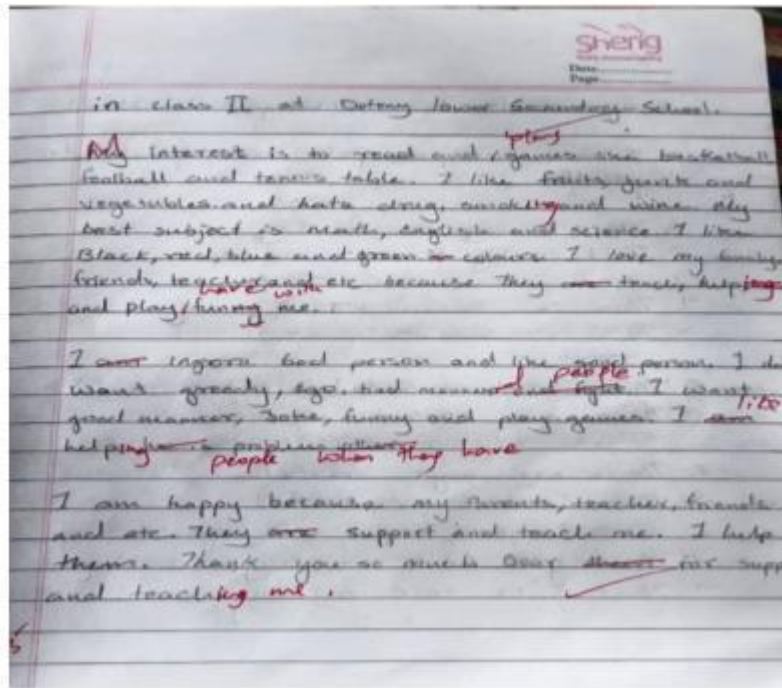


Figure 4: Sample written essay of a deaf child studying class XI

Direct transfer of language

Deaf children often face difficulties with writing in English and Dzongkha, it is found that their first language has greater influence over the development of second language-writing in English and Dzongkha (see Figure 5). A teacher emphasizes that “.... they use sign language... while writing. Students uses their sign language structures in written form; therefore, the structure of the written language gets grammatically distorted.” (T1) Correspondingly, a teacher gives an example to demonstrate a clear claim concerning the detrimental cross-linguistic influence on deaf children's writing: “for example, 'This is a school.' (Signs using BhSL) In their writing- 'school this is'.... so, they write this way, this is how they write” (T1). Furthermore, another teacher (T4) asserts that “Students are directly translating their order of signing into English writing”.

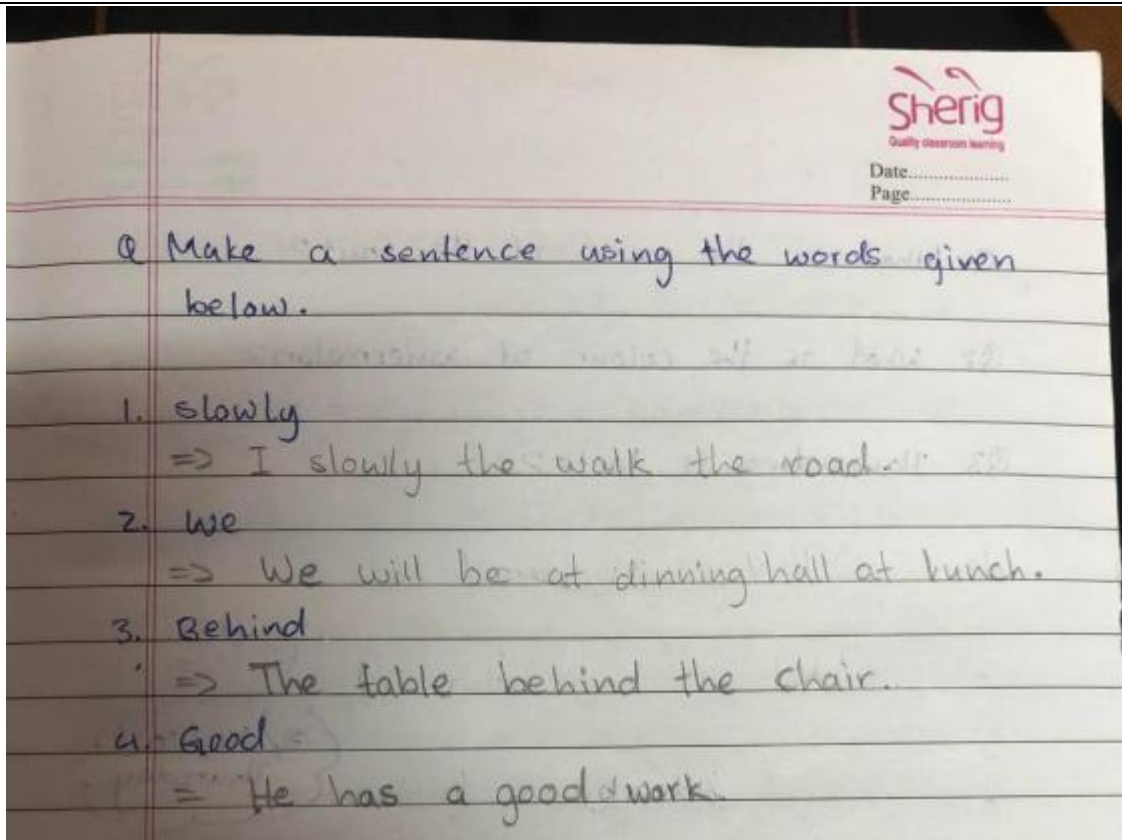


Figure 5: Sample written sentences of the deaf child

Strategic writing instructions

Because deaf children are a language minority, adequate supervision and assistance can help them improve their written comprehension and writing abilities. In light of this, a teacher reported:

“I start with the simplest form, from word level. When I introduce word, explain thoroughly what the word means, then once they get the concept from the words, I go with the phrases. While introducing the phrases and again I tell them we can't get the complete information from phrases only ...we have sentences and there are also subject, verb, and object. If these three are there than you get the complete information, I make them practice sentence like this than again in object we add adjective, adverb. If we add these than our sentence becomes more informative, I tell them these things and teach grammar like I have mentioned earlier. I use text first and let them understand it first.” (T2) Even with the influence of delayed language, development of writing in deaf children can be assisted if such diverse strategies and methodologies are implemented according to the child's needs.

Early Intervention

The key to early language acquisition and development of writing is early intervention. The discussion with the participants revealed that the deaf child's writing and literacy development has been impeded by a lack of early diagnosis and parental assistance in language and literacy development. A teacher (T1) asserts “If the Bhutanese sign language is introduced to deaf children from birth by their parents it will be much easier”. Yet another teacher mentioned that “Earlier the better. I strongly feel providing early language intervention to deaf students will automatically help students learn to read and write” (T3).

Prior to providing access to sign language, if early identification is in place, as conversation with the child's mother implies that:

".... we came to know only by one year four months, till that date we did not know that he could not hear, as some children don't usually speak till that age. Even from 1 year 4-5 months he was not speaking, so, then only we took him to the hospital and did the check-up. From the hospital they say that he could speak...could hear." (CM)

The importance of early intervention, which is preceded by early identification, is stressed. Furthermore, language delay not only widens the gap in writing development, but it also demands attention from educators, parents, and other key stakeholders.

Effects of late first language acquisition

The study's main findings indicated several variables that have contributed to delayed first language acquisition of children who are deaf, which has a detrimental influence not only on their writing competence but also on their overall literacy development. This may be explained by the fact that children who are deaf were deprived of their first language during their language developmental milestones since they were raised in a setting with no shared language by their hearing parents. However, it is argued that hearing parents of deaf children have several challenges of motherhood, especially with the added challenge of learning a new language so that they can communicate with their children ([Boston University, 2019](#)). Despite these challenges, most deaf children, on the other hand, are born into hearing parents with no prior knowledge of sign language ([Svartholm, 2010](#)). Bhutanese parents' involvement in children with special educational needs were found minimal ([Jigyel et al., 2019](#)), the parents were mainly involved in daily parenting routines by providing the child with necessities rather than supporting their language and literacy developmental needs. Linguist B.F. Skinner, on the other hand, believes that environmental variables influence language development ([Lemetyinen, 2012](#)). Children learn language naturally and spontaneously as a result of their interactions with others in their immediate environment ([Svartholm, 2010](#)). This study further highlights that these deaf children of hearing parents thus frequently do not have accessible and competent language models, either for sign language or for spoken language. Thus, it is found that deaf children are prelingually deaf. Accordingly, the findings suggest that there is a dearth of parental support for children's language acquisition as language deprivation can cause cognitive delays in children who are deaf ([Hall, 2017](#)).

In agreement with previous studies of deaf children of hearing parents ([Goldin-Meadow et al., 1984](#); [Morford & Wood, 2016](#)) it is reported that deaf children spontaneously use symbols (gestures) and home signs to communicate even if he was not exposed to a conventional manual language model. It is evident from this study that hearing parents and their deaf children build gestural system and establish home signs in the absence of accessible BhSL or spoken language input. However, these hand gestures and house signals are not considered a language. Sign language as any other language, such as American Sign Language (ASL) is a complete, natural language for deaf people in America, with the same linguistic properties as spoken languages and grammar that differs from English (National Institute on Deafness and Other Communication Disorder, 2019) and British Sign Language (BSL) is a complete, rich combination of hand gestures, facial expressions, and body language with its grammar ([Sign Health, 2020](#)). Similarly, Bhutanese Sign Language (BhSL) is a structured language with distinctive grammatical characteristics that is used by the majority of deaf people in Bhutan. Thus far, home sign systems offer a rare glimpse into people's ability to develop language without being influenced by a pre-existing language ([Morford & Wood, 2016](#)). The fact remains that for deaf children, a foundation in a first language is the cognitive component that best correlates with literacy ([Humphries et.al. 2014](#)). As a factor of deafness, there are numerous obstacles to literacy development due to

the connection between language development and outcomes related to literacy ([Power, 2000; Scott & Dostal, 2019](#)). Further, it is reported that deaf children are not exposed to Bhutanese Sign Language unless their hearing parents send them to a school. For deaf children in Bhutan, early access to first language acquisition would be a gateway to learning. When these children are introduced to an accessible language (such as sign language) at various ages, they show varying degrees of linguistic competence as they get older, with early learners performing considerably better than late learners overall ([Humphries et al., 2014](#)). It is unquestionably found that early exposure to sign language has a favourable impact on the linguistic and literacy development of children who are deaf. This study, along with others ([Webb et al., 2015; Humphries et al., 2014](#)), clearly suggests that DHH children require continuing and intensive attention to language development.

Effects of deprived incidental learning on writing competence

The findings also show that deaf children are not only deprived of language at their language developmental milestones but they are also deprived of incidental learning which deprives them of critical information. This means "they miss out on 'incidental' information hearing children are exposed to on a daily basis through TV, radio, overhearing conversations, and so on." ([Julsrud, 2011, p.41](#)). The study frequently discovered that children who are deaf when not exposed to their first language are robbed off vocabularies to express themselves while writing due to deprivation of incidental learning. Therefore, this study demonstrates that children who are deaf typically have considerably lower vocabulary knowledge. It may be argued, however, that providing accessible language modalities to these deaf children at their language developmental milestones will establish a stronger basis for their writing development. Nevertheless, according to Brackenbury (2005), incidental word learning is primarily driven by the acquisition and application of knowledge from within the first language. Similarly, Brackenbury et al., (2005) suggest that linguistic understanding is more essential than communicative purpose advances at the onset of incidental word acquisition.

Effects of late introduction to the first language on writing competence

A similar study ([Murphy, 2003](#)) asserts that during second language production-writing in (English), the deaf children often unintentionally produce interlanguage structures that consists either partially or completely of first sign language structures. If there is adequate motivation and exposure to both languages in school or home settings, familiarity with either first or second language can aid the advancement of the competency underlying the two languages ([Cummins, 2005 as cited in Safa, 2018](#)). Proficiency is one of the most significant variables influencing the possibility of language transfer. However deaf children in Bhutan are not only taught their first language in school but they are also taught their second language at the same period of time. It is found that different languages have different surface morphology such as vocabulary, syntax, and grammar, yet there is an underlying academic competency that is shared or interdependent across languages ([Safa, 2018](#)). Learning the first language and second simultaneously, is intertwined, and a weakness in one might result in misconceptions and communication gaps in the other. According to the current study, introducing BhSL before introducing a written curriculum appears to be much more beneficial, as these curricula must be provided using BhSL as a medium of instruction. Paradoxically, it is found that even if knowledge of syntax (grammatical abilities) and pragmatics (social language) is available, comprehending what others have said would be impossible without semantic knowledge. Studies on spoken language production have shown evidence of how first language can influence on the second language ([Brown & Gullberg, 2008; Safa, 2018](#)) but this study shows that there may be another window through which negative cross-linguistic influences may be detected, notably in the

case of first sign language and written language of deaf children. The cross-linguistic impact is more prevalent in the weaker language, and mixing is widespread among all deaf children. Similarly, the findings show that cross-linguistic impact is one element that influenced deaf children's writing development (Francis, 2003). It is evident in majority of Deaf children's written works, which are generally produced in BhSL grammatical frameworks and contain grammatically incorrect sentences in English and Dzongkha. Deaf children directly transfer their syntactic knowledge of sign language while writing in English and Dzongkha. Despite the fact, cross linguistic influence does not explicitly rule out the transfer of syntactic or morphosyntactic information, it is improbable when two languages are fundamentally different on the surface (Cummins, 2001). Language learners are obligated to use their growing linguistic information to assist in the acquisition process at any stage of development, whether it is second language acquisition or bilingual learning (Tang et al., 2014). To write a word, the student must first break it down into its component sounds and then know the letters that represent these sounds (Light & McNaughton, 2019). In accordance with Goldberg and Lederberg (2014), this study discovered that prelingually deaf children who lack auditory awareness lack understanding of letter-sound correspondences, which is required for reading and writing. As a result, this study clearly demonstrates that deaf children's lack of hearing awareness impedes their vocabulary development for writing purpose.

Effects of late first language acquisition on grammar and syntax of second language

When compared to hearing peers, children who are deaf, particularly those who struggle with language development, may find writing a challenge in terms of both content and technical abilities (National Deaf Children Society, 2013). Children learning sign language, like those learning spoken language, generally start by understanding basic grammatical structures before moving on to more complex ones (Mayberry, 2007). Delaying early language exposure until age 6 or beyond, according to Mayberry and Lock (2003), has a negative impact on deaf children's grammatical development and reading comprehension. Because syntactic skills need a basic to a complex arrangement of words in accordance with the governing principles, it is difficult for children who are deaf to flourish without sufficient time and with delayed language acquisition (Humphries et al., 2012). It is argued that a child's ability to read is inextricably linked to his or her capacity to write and children create the connection between text and meaning through the cognitive processes of writing (Albertini & Schley, 2003). It was observed that language is the sole source for the development of writing in deaf children. To understand the written context, it is deeper levels of understanding that enable students to transfer knowledge from one context to another. Limited language has an impact on reading development due to the missing component of "phonological processing" (Malik & Din, 2019, p.2), and it has also been revealed that the same is responsible for deaf students' poor writing development. Reviewing the written notes of the deaf children, showed significant vocabulary deficits compared to hearing children, and their works' grammatical accuracy and complexity are much below that of hearing controls (Charrow & Fletcher, 1973). The findings of this study further support and expand on prior empirical evidence that deaf children's writing often contains simplified sentences, pervasive problems with grammatical accuracy, distorted syntactic structures, and non-standard usages (Charrow & Fletcher, 1973; Mayer, 2010; Mayer & Trezek, 2019). The study confirms the findings of Mayberry and Lock (2003), namely that the grammar and syntax of deaf children's written output are directly influenced by their language experiences. Similarly

Effects of simultaneous approach on writing competence

In Bhutan, deaf children are often exposed to their first language in school, where they also learn to read and write in English and Dzongkha. The major deaf community in Bhutan is at Wangsel Institute for the Deaf, where the educational journey is conducted in a bilingual approach. This system assures that deaf children in Bhutan can learn BhSL, as well as the written form of Dzongkha and English. The study's findings are in accordance with those of Mayer and Leigh (2010), who found that deaf children enter school with little or no proficiency in a signed first language, or in some cases, any language at all, putting them at a significant disadvantage when entering a sign and written bilingual education program, making it difficult to fully realize its approaches intended benefits.

Around the same period time, the simultaneous approach concept is when students learn their first and second languages at the same period of time, when they entered school. Deaf students are exposed to extensive examples of each language, as well as explanations of their differences, using a simultaneous approach (Dostal & Wolbers, 2014). A method such as this, in which deaf children in Bhutan are taught BhSL, written English, and Dzongkha all at the same time, complicates and complicates learning. If the concepts are created in BhSL, it is difficult to communicate meaning in English text, which is in conversation with Mayer and Trezek (2019) findings. However, this contradicts the findings of Dostal and Wolbers (2014), who claim that focusing on both sign language and written English abilities at the same time resulted in significant advances in both. In certain ways, it is observed from the findings that the school environment is critical when deaf children experience multilingual development while also using the languages to access education, especially for prelingually deaf children, since it offers a breeding ground for linguistic input (Marschark et al., 2014).

Strategic writing instruction to support writing development

The findings suggest that giving deaf children early access to language and literacy, and teacher competencies in adopting BhSL interpreting skills and teaching strategies, is a significant prerequisite in allowing deaf children to improve their writing skills and written comprehension. As any competent educator will agree that schools should build on the experience and information that children bring to the classroom and that education should also foster children's strengths and skills (Cummins, 2001). In order for deaf children to generate meaning in print, they must have control over the language represented in the text (Mayer and Trezek, 2019). Moreover, this study highlights on teaching writing through structured programs that essentially taught the BhSL while also providing strategic instructions in how to write in English and Dzongkha. However, the well-documented low performance of deaf students during this period calls into doubt the efficacy of these techniques, and it has been claimed that the lack of development in writing for deaf children can be linked to this inadequate teaching approach (Mayer & Trezek, 2019). Since deaf children have challenges in terms of vocabulary, teachers are concerned about their students' staggering behavior in writing (Malik & Din, 2019). In this regard, the teachers from the study specified that they lack expertise in deaf education, notably in providing strategic writing instructions to deaf students with limited BhSL modalities to explain the basic grammatical structures. Despite their lack of understanding about the diverse needs of these children, which is in line with a previous study (Dorji & Schuelka, 2016), these teachers explored and tried out a variety of strategies to enhance deaf children's writing skills.

Needs for parental support and early intervention in language and literacy development

Parents with culturally and linguistically diverse deaf children with hardly any BhSL are unable to contribute to their children's language and literacy development, according to one of the study's parents. A similar study (Caesar and Nelson, 2013) asserts that parents are urged to make decisions and create circumstances at home and at school that enhance deaf children's language

and literacy development. Surprisingly, this study confirms that the parents are unfamiliar with BhSL and chose to communicate with their children through oral languages and home signs, which make little or no sense to the profoundly deaf children. The findings support an earlier study (Caesar & Nelson, 2013) in which low levels of family participation affects significant child language delays at 5 years of age, especially when enrolment in the intervention is late, and that high levels of family involvement linked to better language outcomes. Interestingly, it is found that providing them with early access to BhSL and literacy input from parents enhances their writing development, particularly vocabulary input and syntactic structures of the written text. The teachers from the study also emphasized the need for parental support and early intervention for language and literacy development, which will benefit not only deaf children but also teachers. However, parental support and involvement in deaf children's language and literacy development is minimal. The parent from the study expressed that she is relieved when her child started school due to the linguistic barrier at home. The findings corroborate earlier findings (Jigyel et al., 2019), in which parents expressed gratitude to the school for its assistance and care of their children, as well as to the King and the government. However, academic achievement in children who are deaf is partly dependent on their parents' involvement, the quality and quantity of the intervention program, and the support services provided (Shojaei et al., 2016). Even in developed nations like the United States, early identification and intervention for all deaf children are still a long way off (Bachmann & Arvedson, 1998). As a result of the disparities in interpretations and influences, there are differing perspectives on how often ahead of the curve early detection and intervention are in Bhutan, where the concept of Deaf education is still relatively new. However, the study's findings significantly showed the need for early identification and interventions for language and literacy development for deaf children which will further support in writing development of deaf children. The findings from the study are also consistent with those of Shojaei et al. (2016) that early identification and intervention of deaf children before the age of six months have a significant positive impact on a child's writing development in terms of vocabulary, grammatical.

Implication of the Study

Comprehension, sentence combining, grammatical completion, phonologic analysis, word differentiation, word production, semantics, and syntax. The need for early identification and intervention as suggested from the findings are also in line with the National Policy for Persons with Disabilities which states “The MoE shall institutionalize and strengthen identification and intervention programs, including effective training of ECCD facilitators in all ECCD centres and schools in collaboration with the MoH and relevant organizations” (GNHC, 2019, p.11). Deaf children's linguistic understanding of their first and second languages is also delayed until they are older than six years old, according to the findings. Due to a combination of possible challenges, including the lack of a deaf school, accessibility difficulties, and family attitudes toward engagement in children's education, some deaf children in Bhutan are admitted late to school, even at the age of twenty, despite many awareness initiatives mentioned by the participants in the study. Moreover, due to the limited number of special schools, facilities, support services, and teacher capacity, the government's initiatives to improve educational access for children with special needs remain a formidable challenge for the education sector (Bhutan Education Blueprint, 2014). Bhutan is still in its initial stages of deaf education and there is widespread agreement that early identification, intervention, and appropriate understanding of how to cater to deaf children are critical. Though, early identification and interventions are documented in National Policy for Persons with Disabilities “MoE shall develop specific ECCD supports for children with different disabilities including providing access to sign language from moment of diagnosis for children who are deaf, and specific

developmental supports for children with a visual impairment” (GNHC, 2019, p.11). However, as is often the case, there is still a gap between policy and practice. Thus, to argue, it is not to undermine the great contribution put in by many individuals in advancement of quality educational services for children with disabilities and framing policies with much effort. In reality, simply developing a policy for disabled people is a step forward. However, it is proposed that deaf children be given the opportunity to attend Early Childhood Care and Education Centres (ECCD) where the facilitators are trained and equipped with BhSL. In the nutshell, their sign language competency should be achieved before written English and Dzongkha are taught as a second language. Deaf children would have BhSL to refer to instead of having to learn both languages at the same time, which would be challenging for them. Deaf children, on the other hand, might be fluent in sign language when they enter school, making their education less challenging. Yet, the study turns to the lived experiences of deaf child, who grew up in an environment with no shared language and were robbed of incidental learning due to a lack of access to BhSL in their homes and communities.

As a linguistic minority, deaf children have been constantly labelled as ‘stupid or dumb’. Both the research and literature emphasis the benefits of access to sign language, and the simple fact that there is no harm in being exposed to BhSL. Therefore, to advocate the fact that deaf children's literacy development can be enhanced if fully accessible language experiences are provided during infancy is crucial. Moreover, it is believed that the most effective way to reduce deaf children's language deprivation is to provide them with interactive access to BhSL as early in their critical language development milestones as possible, based on Deaf epistemology. In addition, to advocate for future generations of deaf children in Bhutan to have access to sign language. Given the importance of early language exposure for deaf children's general development, this study suggests that hearing parents of deaf children take a wide view on child development by learning BhSL. Parental involvement in educating deaf children is also recommended to enhance their literacy development. Certainly not to undermine the parental perspectives and challenges in acquiring completely new language besides their oral language.

For deaf children, the capacity to absorb words through incidental encounter is also a milestone in early language development (Brackenbury, 2005). It would be desirable if National News Channels and other important stakeholders could make it feasible to include sign language interpreters in programs and educational conferences. However, not to belittle the efforts they have already begun to put forth. The study's key implications are for inclusive education teacher who engage with children who have diverse language backgrounds and proficiencies. Therefore, it is suggested that inclusive educators could connect across different languages and modalities that would increases students' knowledge of language, linkages between languages, and communicative uses of language. Written comprehension, as well as grammatical input and vocabulary development, are essential for deaf children, according to the findings of the study. It is important for deaf teachers to be able to teach writing utilizing a variety of approaches and strategies to meet the needs of their students. Writing is another kind of communication that allows you to communicate your thoughts and ideas with others and it also allows you to create meaning. Therefore, collaborative actions by the school and teachers are recommended to take proactive measures and adopt appropriate strategic instructions to assist deaf children in improving their writing abilities. Understanding these needs, deaf children in Bhutan could advocate themselves and work towards developing their weakness in writing. Furthermore, if the Ministry of Education, in collaboration with key stakeholders, strives to equip teachers with specific training in catering to deaf children, that are necessary to accommodate the developmental writing needs of deaf children.

Implications for future research

Future studies will need to fill the gap created by this study, which is the first contextualized study on deaf children's language and literacy development. Currently, deciding on findings of this single case study research involving a child, subject teachers and a single parent is a very subjective process. Case study research, according to (Tsang, 2013; Yin, 2018), may be less generalizable than quantitative studies. Therefore, future research could focus on more evidence-based investigations regarding the problems of pragmatic language and literacy development in deaf children. It is necessary to place more emphasis to deaf children's entire language models and to conduct a rather more thorough contextualized study which might help in the early phase of deaf education in Bhutan.

The combination of new research concerning the relative impact on late language development that has influenced deaf children's writing development will be interesting to observe in the near future, based on the results of ongoing issues of delayed language and writing difficulties discussed here and from the literature review. Finally, a replication of this study using a comprehensive and in-depth investigation of evidence-based in-depth study of deaf children's written expression and suitable writing strategies and interventions in developing deaf children's writing skills is strongly recommended.

Conclusion

Language and literacy development among deaf children is hard and laden with controversy not only in Bhutan, but worldwide. Therefore, this research aimed to investigate the impact of late sign language acquisition on the development of writing competence. This research, supported by a review of the literature, contends that deaf children's late learning of sign language has a detrimental effect on their writing competence. Furthermore, the second chapter discusses the backdrop of how inaccessible early language acquisition impacts the language and literacy development of deaf children, as well as the theoretical underpinning for this study. With increased educational expectations, it is more important than ever to foster and strengthen deaf children's language and early literacy development. Several studies, like this one, have unanimously concluded that early exposure to sign language is beneficial for deaf children to enhance their writing competency and literacy development. Furthermore, emphasis should be made not just to the benefits of early access to sign language on writing development, but also to the causes for late sign language acquisition and the difficulties that these children from linguistic minority backgrounds have faced. Unless this issue is resolved, it is probable that deaf children's academic challenges will continue. Therefore, this study argues that early exposure to sign language is the most vigorous component in the lives of deaf children in order to improve their literacy skills, particularly their writing competency. Moreover, accessible sign language helps deaf children to expand their vocabulary, bridge ideas to meaning, and lay a strong foundation for literacy development.

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