

A Comparative Study of Children who are Deaf and their Parents Literate Abilities in Sign Language: The Case of Morning Star Deaf and Hard of Hearing/Hearing Catholic Primary School Akum, Bamenda, Cameroon

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ABSTRACT

The present study was designed to compare children who are deaf and their parents' literate abilities in sign language in Morning Star Deaf and Hard of Hearing/Hearing Catholic Primary School Akum, Bamenda in the North West Region of Cameroon. The ex post facto and survey designs were used to conduct the study. The population was all the 15 pupils who are deaf in Morning Star Inclusive Primary School Akum and their 12 parents in 2019. The sample consisted of 12 pupils who are deaf and their 10 parents. This sample was chosen by simple random sampling. Questionnaires were administered to pupils and their parents to collect the required data. Using the questionnaires, data was collected to determine whether there was a significant difference in the mean comprehension level of Sign Language between parents and their children who are deaf. Also some data from the questionnaires was collected and analyzed to determine the factors affecting pupils who are deaf and their parents learning of Sign Language. The data on the comparative analysis was analyzed by using Student t-test inferential statistics. The data that was collected to determine the factors affecting pupils who are deaf and their parents learning of Sign Language was analyzed by using descriptive statistics specifically percentages. The results showed that: 1) there is a significant difference between pupils who are deaf and their parents mean ability to write Sign Language; 2) there is a significant difference between pupils who are deaf and their parents mean ability to read Sign Language; 3) several factors especially material resources affect pupils who are deaf learning of sign language; and 4) several factors especially material resources and social influences affect parents of pupils who are deaf learning of sign language.

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1. INTRODUCTION

Communication, peace and development are inextricably linked concepts that define the direction of societies (Dauda and Pate, 2015). In very simple terms, communication fortifies the foundation of peaceful coexistence which facilitates the process of development in a country (Dauda and Pate). Consequently, communication in a society can help many aspects of our life, from, education, to the workplace, to our professional career, social gatherings, to our family life (Beqiri, 2017). As its known, the family is the most basic social unit upon which society is built (Lumenlearning.com, n.d.). Any family only succeeds in development when there is peace and harmony within that family. Based on the above mentioned statements, one can understand that any effective development within the society can only be possible if the members of the family live in peace and harmony and effectively communicating with one another. This implies that a child's normal development can only be effective if the child interacts with other members of the society including his/her family members. This is because communication is one of the essential building blocks that help create and sustain healthy, fulfilling, and, great relationships (Brenner,

2017, University of Delaware, 2020). It is through communication that we convey our thoughts, feelings, and connection to one another and developing good communication skills is critical for successful relationships, whether parent, child, spouse, or sibling relationship (University of Delaware, 2020).

But what is communication? Communication is simply the act of transferring information from one place, person or group to another (SkillsYouNeed, 2011-2020). Communication may be spoken, nonverbal or written. Spoken or verbal communication includes face to face speaking, telephone, radio, TV and other media; nonverbal communication includes body language, hand signals, gestures, how we dress or act, where we stand and scent; written communication includes letters, emails, social media, books, magazine, internet and other media or visualizations which includes graphs, charts, maps, logos and other visualizations (SkillsYouNeed, 2011-2020). The information that is communicated can be messages, ideas or emotions (SkillsYouNeed, 2011-2020). Communication can also be

defined as the process of understanding and sharing meaning (Beqiri, 2017). To communicate well is to understand, and be understood (Beqiri, 2017). It is a two-way process and only happens when there is a sender who conveys the message and a receiver to whom the message is sent and miscommunication can occur if the sender does not send a clear message and/or the receiver does not understand the message sent by the sender (University of Delaware, 2020). Thus poor communication skills can have a negative impact for example a poorly delivered message may result in misunderstanding, frustration and in some cases disaster (Beqiri, 2017).

Language is one of the main components of communication. Research has shown that children need language to flourish as language acquisition promotes cognitive development, psychological well-being, and social bonds (Tom et al., 2016 cited in School of Social Service Administration Magazine, 2017). Consequently, when children don't get adequate exposure to language, their brains don't develop properly, they become socially and emotionally isolated and vulnerable to other kinds of abuses (Tom et al., 2016 cited in School of Social Service Administration Magazine, 2017). The Magazine clearly states that Sign Language is the best means of communication for children, who are deaf by outlining that when children who are deaf learn Sign Language early they do better across a range of measures, including academic achievement, than children who don't. In addition, to better relate with their children who are deaf, parents of children who are deaf also have to learn Sign Language. It is a more reliable way to introduce children who are deaf to language, and ensures that they receive the cognitive and other benefits of language acquisition (Tom et al., 2016 cited in School of Social Service Administration Magazine, 2017). Unfortunately, communication gaps do exist between hearing parents and deaf children. For example, some hearing parents may be unable or may find it difficult to communicate with their children who are deaf using Sign Language. This situation is problematic. According to Berke (2018) a communication gap between hearing parents and deaf children has been known to harm both family relations and the children's' academic progress.

Contemporarily, Cameroon has adopted Inclusive Education as a policy and children who are deaf or hard-of-hearing form part of the target exceptionalities of the children in inclusive primary schools. Ideally, it is expected that when these children learn Sign Language in schools, their parents as well, should learn the language so that communication can be effective between parents and their siblings. Unfortunately this is not the case in Bamenda a town in Cameroon. To be more specific, it has been generally observed that communication between parents and their school going children who are deaf in Sign Language is mostly ineffective because of differences in levels of understanding of the language and research has not been conducted to examine this difference in Bamenda. Consequently, the purpose of this study was to compare children who are deaf and their parents literacy abilities in sign language in inclusive primary schools in Bamenda with a view of making appropriate recommendations to positively make parents and their children who are deaf to learn Sign Language. The specific objectives of the study were: 1) to determine whether there is a significant difference between pupils who are deaf and their parents mean ability to write

Sign Language; 2) to determine whether there is a significant difference between pupils who are deaf and their parents mean ability to read Sign Language; 3) to determine pupils who are deaf's' perception of the factors influencing their learning of Sign Language and 4) to determine parents of pupils who are deaf's' perception of the factors influencing their learning of Sign Language and The research questions for this study were:

- A. To what extent do pupils who are deaf and their parents differ in their mean ability to write sign Language?
- B. To what extent do pupils who are deaf and their parents differ in their mean ability to read sign Language?
- C. What factors affect pupils who are deaf learning of Sign Language?
- D. What factors affect parents of pupils who are deaf learning of Sign Language?

2. Review of Literature

Deafness: meaning, causes and effects/challenges

The official definition of deafness from the Individuals with Disabilities Education Act (IDEA) is "a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification." (Special Education Guide, 2013-2019). The phrase "with or without amplification" is significant as it indicates that a hearing aid will not provide sufficient accommodation so that the student can succeed in the classroom (Special Education Guide, 2013-2019). That is a child who is deaf, wholly lacks the ability to hear.

Deafness has many causes. The most common causes are exposure to loud noises, infections, birth defects, genetics and reaction to drugs, especially chemotherapy or drugs used for cancer treatment (Starkey, 2007-2019). Though the aforementioned are common causes, specific types of hearing loss have specific causes. Starkey, thus outlines the following factors as specific causes of sensori neural hearing loss: aging, injury, excessive noise exposure, viral infections (such as measles or mumps), shingles, ototoxic drugs (medications that damage hearing), meningitis, diabetes, stroke, high fever or elevated body temperature, ménière's disease (a disorder of the inner ear that can affect hearing and balance), acoustic tumors, heredity, obesity, smoking and hypertension. Starkey also states that the causes of conductive hearing loss are typically "obstructions" such as infections of the ear canal or middle ear resulting in fluid or pus build up, perforation or scarring of the eardrum, wax build up, dislocation of the middle ear bones (ossicles), presence of foreign objects in the ear canal, otosclerosis (an abnormal bone growth in the middle ear) and abnormal growths or tumors.

A child who is deaf faces many challenges. The earlier the hearing loss occurs in a child's life, the more serious the effects on the child's development (American Speech-Language-Hearing Association, 2005). A child who is deaf in addition to losing the ability to hear sound, is cut off from hearing important everyday spoken and conversational information that allows speech and language to develop normally, he/she has trouble expressing her feelings and thoughts to other people, he/she has trouble understanding others and this situation can be very confusing and isolating (Raising Deaf Kids, n.d.). Students who are deaf face several educational barriers, such as learning by lectures, participating in classroom discussions, giving oral

presentations, taking oral exams, note taking, watching educational films (Special Education Guide, 2013-2019). American Speech-Language-Hearing Association, (2005) outlines the following ways in which hearing loss affects children development:

- A. It causes delay in the development of receptive and expressive communication skills (speech and language).
- B. The language deficit causes learning problems that result in reduced academic achievement.
- C. The communication difficulties often lead to social isolation and poor self-concept.

Hearing loss may have an impact on vocational choices (Hearing Dogs, n.d.). It also causes a huge blow to a person's confidence, takes away a person's independence, makes a person vulnerable to dangers that involve sound, makes him/her to have terrifying sleep and makes him/her to experience tinnitus (Hearing Dogs).

How parents communicate with their children who are deaf

Parent-child communication plays a central role in social growth, as it does in other domains of development (Vaccari and Marschark, 1997). Early access to a language whether signed or spoken, from birth supports the development of cognitive skills and abilities in deaf and hard of hearing children and supports their development in this area (Wikipedia, 2019). Wikipedia (2019) also outlines that late exposure to language and delayed language acquisition can inhibit or significantly delay cognitive development of deaf and hard of hearing children and impact these skills. Therefore, any deaf or hearing parent must do everything possible to communicate with his/her siblings. But this is not always the case. Vaccari and Marschark, (1997) confirmed this in a study when they found out that over 90% of children who are deaf, have hearing parents who frequently do not have a fully effective means of communicating with them. Despite this some ways parents can use in communicating with their children who are deaf include: oral methods, signing and other manual methods, bilingual method, text communication. Each of these strategies plays a significant role in a child who is deaf communication abilities.

Oral methods: Speech-reading (lip-reading) is an important oral method that is used by parents to communicate with their children who are deaf. It is a technique for understanding speech by visually interpreting the movements of the lips, face and tongue when normal sound is not available (Wikipedia, 2019). It also relies on information provided by the context, knowledge of the language, and any residual hearing available (Wikipedia, 2019). The premise behind this method is that a child who is deaf or hard of hearing will then be able to communicate more effectively with hearing individuals (CDSS, n.d.). The use of assistive technology is another method through which the oral method can be affected. It includes the use of hearing aids and cochlear implants. These technologies are oral techniques as they help amplify the residual hearing abilities of the child. They are used to build the child's speech. Children diagnosed with hearing loss typically receive hearing aids, cochlear implants, or both-the hearing aids amplify residual hearing, while cochlear implants bypass the ear altogether and deliver electronic sound impulses directly to the brain (School of Social Service

Administration Magazine, 2017). McKee and Vale (2014) conducted a survey that was intended to investigate the language use of deaf and hearing impaired children and their hearing families and to identify factors in parental choices that may influence the transmission of New Zealand Sign Language (NZSL) to future generations. One of the key findings of this study was that the majority of the children in the sample (65%) were cochlear implant users. With the use of hearing aids and cochlear implants, the child's hearing may be improved though results may vary as each child is unique (Irish Deaf Society, 2011). In a study that was intended to prospectively assess spoken language acquisition following cochlear implantation in young children Niparko et al. (2010) found out those children who undergo cochlear implantation showed greater improvements in spoken language performance. Based on the findings of this study they indicated that cochlear implantation is a surgical alternative to traditional amplification (hearing aids) that can facilitate spoken language development in young children in young children with severe to profound sensorineural hearing loss. Consequently cochlear implants are significant devices that can be used to develop spoken speech in children with significant hearing impairments.

Some usage of these technologies has proven worthwhile but others have not. As Deltman et al., 2016 and Levine et al., 2016 (cited in Wikipedia, 2019), found out in a research study, children who received cochlear implants before twelve months old were found to be significantly more likely to perform at age-level standards for spoken language than children who received implants later. According to Humphries et al., 2014 (cited in Wikipedia, 2019), while cochlear implants provide auditory stimulation, not all children succeed at acquiring spoken language completely with cochlear implants. Also in an article published in the December 2016 Social Service Review, a group of researchers, most of whom were having hearing loss themselves, said that a "speech only" approach using technology is hurting many deaf children by preventing them from learning language in their first critical years, resulting in impaired brain development and inflicting lasting harm on their cognitive and psychosocial functioning (School of Social Service Administration Magazine, 2017). The problem is that technology often doesn't work very well (School of Social Service Administration Magazine, 2017). To a certain extent technology is used by deaf and hearing parents with their children who are deaf though this method is mostly used by hearing parents. According to Harris & Paludneviciene, 2011 (cited in Mitchiner, 2015) some culturally deaf parents are now deciding to give their young children who are deaf cochlear implants.

Using signing and other manual methods: This includes the use of conventional Sign Languages such as American Sign Language (ASL), New Zealand Sign Language (NZSL) and other manual approaches such as Manual Coded English (MCE), cued speech, gestures, facial expression, pointing, touching, finger spelling and other manual signs that are not recognized. Sign language is the most natural form of communication for deaf people around the globe and research has shown that in any society where there is a concentration of deafness, signed languages have developed (Callis, 2014). American Sign Language is written by using signs made by moving one's hands along with one's facial

expressions and body language (Wikipedia, 2019). Research has shown that Sign Language is very advantageous for children who are deaf. That is why the authors of "Avoiding Linguistic Neglect of Deaf Children" contend that a better approach than technology is for parents to begin teaching their deaf children sign language as early as possible (School of Social Service Administration Magazine, 2017). Studies have shown that sign language exposure actually facilitates the development of spoken language for deaf children of deaf parents who had exposure to sign language from birth (Wikipedia, 2019). No longer is the primary form of teaching deaf children in school through oral methods (Mayberry, 2002 cited in Tashjian, 2018), and no longer is sign language thought to inhibit language development and academic performance in children who are deaf or hard of hearing (Tashjian, 2018).

Sign Language is a common means of communication amongst deaf parents and their children who are deaf as its use goes a long way to strengthen the deaf culture between the child and the parent. As Vicars, (n.d.) puts it, many deaf couples who want to become parents wish for their child to be deaf because a child who is deaf will tend to grow up being part of the world of the deaf parent meaning that the child will have a higher probability of learning to sign making it possible for the deaf parents to have full communication access to the child. Sign Language is also an important means of communication between hearing parents and their siblings who are deaf. Allis (2014), intimate that if a hearing parent discovers Sign Language with his/her infant that is deaf, it likely to provide both of them a richer life and a closer relationship. But research has shown that not everything is rosy with Sign Language acquisition. The conclusion of some studies is that long-term use of Sign Language impedes the development of spoken language and reading ability in deaf and hard of hearing children (Geers et al., 2009, Deltman, 2013 and Geers, 2017 cited in Wikipedia, 2019).

Manual Coded English (MCE) communication is communication that uses some sign systems using hands, but not sign languages, because the latter also use facial expression, space and direction (Vicdeaf, 2010) and body language. Most types of MCE use signs borrowed or adapted from American Sign Language, but they are written by following English sentence order and grammatical construction rules (Wikipedia, 2019). Because MCE systems are encodings of English which follow English word order and sentence structure, it is possible to sign MCE and speak English at the same time (Wikipedia, 2019). MCE is thus a technique that is used to teach deaf children the structure of the English language not only through the sound and lip-reading patterns of spoken English, but also through manual patterns of signed English (Wikipedia, 2019).

Cued speech is an oral and manual system of communication used by some deaf or hard-of-hearing people (Wikipedia, 2019). Cued speech is a visual system of communication used with and among deaf or hard-of-hearing people (Wikipedia, 2020). It is a phonemic-based system which makes traditionally spoken languages accessible by using a small number of hand shapes, known as cues (representing consonants), in different locations near the mouth (representing vowels) to convey spoken language in a visual format (Wikipedia, 2020). As cited in Wikipedia,

(2020), the National Cued Speech Association in U. S.A. defines cued speech as "a visual mode of communication that uses hand shapes and placements in combination with the mouth movements and speech to make the phonemes of spoken language look different from each other. It is a technique in which uses hand shapes are made near the mouth to create cues to represent phonemes that can be challenging for some deaf or hard-of-hearing people (Wikipedia, 2019). It is designed to help receptive communicators to observe and fully understand speakers (Wikipedia, 2019). It is not a signed language and it does not have any signs in common with ASL but a kind of augmented speech-reading technique that makes speech-reading much more accurate and accessible to deaf people (Wikipedia, 2019). As explained in Wikipedia (2019), the hand shapes by themselves have no meaning; they only have meaning as a cue when combined with a mouth shape. For example the mouth shape 'two lips together' plus one hand shape might stand for the 'M' sound while the same hand shapes with a different cue might represent a 'B' sound, and with a third cue might represent a 'P' sound. Some research indicates that teaching cued speech may be an aid to phonological awareness and literacy (Ostrander, 1998 cited in Wikipedia, 2019). Cued speech is thus an important language development technique for deaf children.

Gestures and other manual methods are very important. Gestures are movements of the body, hands and arms, with or without speech, that express an idea, emotion, attitude or intent (Vicdeaf, 2010). Common examples are clapping the hands, shrugging the shoulders and shaking the head (Vicdeaf, 2010). In a study that was intended to establish the mode of communication used by hearing parents with their hearing impaired children in Gweru Urban District in Zimbabwe, Mbaluka, Kurebwa and Wadesango (2013) observed that hearing parents struggle to communicate with their hearing impaired children hence some parents end up using gestures, facial expression, pointing, touching and other manual signs that are not recognized in trying to communicate with their children. According to Pettito and Masentette (1991 cited in Mbaluka, Kurebwa and Wadesango, 2013), babies of deaf parents intimate hand and arm movements in what is called "manual babbling" and signing parents respond to manual babblings as if they were intentional communication on the part of the infant, just as hearing and speaking parents respond with changes in their interaction patterns to syllabic vocal babbling.

Finger spelling (or dactylology) is the representation of the letters of a writing system, and sometimes numeral systems, using only the hands (Wikipedia, 2019). These manual alphabets (also known as finger alphabets or hand alphabets), have often been used in deaf education, and have subsequently been adopted as a distinct part of a number of sign languages (Wikipedia, 2019). It is not a language, but a system of manually represented letters of the English alphabet and should not be confused with sign language (Vicdeaf, 2010). Finger spelling is made up of twenty-six distinct hand shapes or "signs" to represent each of the twenty-six (26) letters of the English alphabet (Vicdeaf, 2010) when it comes to English. As such, it is a method of spelling out words one letter at a time using 26 different hand shapes (Wikipedia, 2019). Since finger spelling is connected to the alphabet and not to entire words, it can be used to spell out words in any language that uses

the same alphabet; (Wikipedia, 2019). Consequently Wikipedia makes it clear that fingerspelling is not tied to any one language in particular. Research has proven that finger spelling is very important in a child who is deaf's development. In a review that was intended to examine research from the past ten years on finger spelling and its relationship to vocabulary and literacy development for deaf students, Alawad and Musyoka, (2018) observed that there is a strong link between finger spelling and the development of vocabulary and literacy skills among deaf students. Stone et al., (2015) on their part, demonstrated that finger spelling skill can significantly be used in predicting reading fluency, revealing for the first time that finger spelling, above and beyond ASL skills, contributes to reading fluency in deaf bilinguals.

Using Bilingual Education: Bilingual education is a method of teaching a child two languages (Irish Deaf Society, 2019). Some people describe it as using both visual/manual language and an aural/oral language. Examples are teaching the child, Irish Sign Language and English or American Sign Language and English. This method of education is the preferred approach used by the Irish Deaf Society. In this case, Irish Sign Language and English are taught (Irish Deaf Society, 2019). Irish Deaf Society (2019), outlines that the main benefits of bilingual education to children who are deaf are: the children receive education in a language which is accessible to them; it increases cognitive development and has a positive effect on intellectual growth; helps with literacy skills and assists in making the child to be successful in examinations and tests. Mitchiner(2014), conducted an investigation on 17 deaf families in North America with cochlear-implanted children about their attitudes, beliefs, and practices on bimodal bilingualism using American Sign Language (ASL) and English and followed-up with interviews using 8 families and found out that the majority of the deaf families exhibited positive beliefs toward bimodal bilingualism, where they set high expectations for their children to become equally fluent in both languages. Based on its advantages, some culturally deaf parents are now deciding to give their young children who are deaf cochlear implants to foster what is currently called bimodal bilingualism (Harris & Paludneviciene, 2011 cited in Mitchiner, 2014).

The bilingual approach has been adopted by certain hearing parents with their children who are deaf. For example Depowski, Abaya, Oghalai and Bortfield, (2015), observed in a study that some hearing parents choose both cochlear implants and sign language for their children. McKee and Vale, (2014) observed in a survey that 8% of the children represented in their survey combine signing with speaking. On the other hand some experts are concerned that learning a sign language may interfere with the intense training necessary to reap the benefits of a cochlear implant, thus most agree that a cautious and educated bilingual approach is most beneficial for the child and the family (Physicians News Digest, 2015).

Using text communication: Many deaf children and deaf parents prefer to communicate by using e-mail, pagers, text messengers or a TTY (Text Telephone) relay service (Raising Deaf Kids, n.d.) which are all forms of text communication. In a comprehensive survey study to determine the text communication preferences of deaf people who cannot or

prefer not to use voice telephony in the United Kingdom, Pilling and Barrett (2008), generally observed that respondents used several forms of text communication, selecting them for particular purposes. E-mail was the most widely used form of text communication, but SMS was the most used by younger respondents. The most prominent reasons for liking different forms of text communication were that they were easy or fast (Pilling and Barrett). Respondents were given the opportunity at the end of the text communication survey questionnaire to add any other comments about text communication and one severely pre-lingual deaf respondent said having access to TTY, fax, mobile phone (SMS) and e-mail has completely made him independent (Pilling and Barrett).

How children who are deaf and their parents differ in sign language.

The importance of sign language acquisition to a child who is deaf and his/her whole family is very paramount. According to Humphries, Kushalnagar, Mathur, Jonapoli, Rathmann and Smith (2019), the whole family must learn sign language simultaneously as the deaf child learns. They also indicate that even moderate fluency on the part of the family benefits the child enormously and learning the sign language together can be one of the strongest bonding experiences that the family and deaf child can have. Global statistics indicate that over 90% of children who are deaf are born to hearing parents (Birdsey, 2016). Though most children who are deaf are born to hearing parents, many hearing parents are unable to communicate clearly and unambiguously with their deaf offspring (Meyers and Bartee, 1992). The parents may not be able to communicate with their children who are deaf because their children can communicate using sign language likewise their parents cannot communicate using sign language. To corroborate this statement Weaver and Starner (2011) found out that the most common motivation for parents to learn ASL is better communication with their children who are deaf. Still in this light Hesperian health guides (n.d.) narrates a story about a group of Indian mothers with children who are deaf living in England who learned British Sign Language from a deaf teacher because the mothers and their children had trouble communicating because it was hard to understand each other and this situation was only changed when these mothers learned sign language.

Factors affecting parents of children who are deaf learning of sign language

What is clear is that not all parents of children who are deaf learn sign language. Some of the factors that may be responsible are examined in the following paragraphs: As a parent, it can be difficult to accept the news that your child cannot hear as this is shocking or not understandable and naturally, this may cause a parent to be hesitant about learning to sign, particularly if he/she is still looking into medical treatments (Berke, 2018). Most parents also grieve when they learn that their child is deaf. When the right support is not given, the grief stage of "denial" can become a prison, placing a parent not in a place of empowerment to take purposeful steps forward that require effort and acceptance, such as the learning of a sign language (Birdsey, 2016). Therefore parents' non acceptance of the fact that their child is deaf can be responsible for the parents unwillingness to learn sign language.

Some parents may be hesitant in learning sign language because they feel guilty that something (real or imagined) they did or didn't do resulted in their child's deafness (Berke, 2018). An educational interpreter says parents are often told of their child's deafness by a doctor giving the child's deafness a medical connection and as a result, the parent may be hesitant in learning sign language because he/she is seeking treatments or looking into cures, especially in the beginning (Berke, 2018). The above statements imply that feeling guilty and or looking for a cure some of the factors that may be responsible for parents' unwillingness to learn sign language.

Not having a mentor and or having a busy schedule may be responsible. Statistics show that mentorship by a deaf adult in the lives of families with deaf babies, allows for a faster transition between the grief stages of "denial" and "acceptance" (Birdsey, 2016). If a parent is a working parent with few free hours, it can be difficult to fit sign language classes into his/her schedule even when classes are free and offered year-round as it takes a time commitment to attend them which may not always be immediately available at the beginning (Berke, 2018). Meaning that if this mentor is not there to take up opportunities that facilitate the wellbeing of the child, signing may be delayed.

Lack of confidence may be a factor. The grief stage of learning that a parent has a child who is deaf makes him/her not to feel the freedom of taking as long as he/she needs to learn, as there is a definite sense of unwelcomed pressure; conflict between wanting to for the sake of the child, and not wanting to because he/she would rather not have a deaf child in the first place whilst complicated by a lack of confidence in his/her own ability to embrace the learning of sign language (Birdsey, 2016). Some parents thus may resist using sign language in public if they are not confident using it consequently they resist learning it (Berke, 2018).

Learning is challenging for the parent and fearing that the child won't learn to speak can be factors. Berke, (2018) outlined that parents who had difficulty in school may be hesitant in learning sign language because they may be worried about not being able to learn sign language. Hearing parents may have a strong desire for their child to learn to speak or maintain and improve their speaking skills consequently they might worry that if they learn sign language, the child won't continue to develop speech (Berke, 2018).

Communicating well enough without sign language can be a factor. Berke, (2018) states that some parents may feel that they are communicating well enough with their child who is deaf without sign language thus there is no need learning the sign language. Birdsey (2016) who is a mother of three children who are deaf refers to this as inflexibility that is parents placing their needs before their child's desires. Deciding to be flexible from oral expression to sign language was thus Birdsey's first step in learning South African Sign Language (SASL) so as to better communicate with her children Birdsey (2016).

Some parents may not be willing to learn sign language because of discouragement from others. Meier, (2016) made this point clear when he stated that when a parent of a child who is deaf may have no knowledge of a signed language

because he may have been actively discouraged from learning one. To better learn sign language a parent thus needs constant, careful encouragement even from the siblings that are deaf (Birdsey, 2016).

Factors affecting children who are deaf's learning of sign language

According to Haws (2016), factors that affect children's sign language acquisition include access to fluent language models (rather than 'instructors' per se), and opportunities for expression. The limiting factor for many deaf children is environmental - they are often isolated and don't have access to fluent language models (Haws, 2016). On the contrary, Haws outlined that the variation between different sign languages is not a limiting factor in itself.

In a study that was set to find out the factors influencing the use of sign language in teaching and learning in public primary schools in Kiambu County in Kenya, Florence (2015) established that the teacher factor, the school environment, the curriculum, teaching / learning resources, influences the use of Sign Language in teaching and learning in public primary schools. In a similar study that was set to investigate school based factors affecting the learning of Kenyan sign language in primary schools for hearing impaired in Embu and Isiolo Counties of Kenya, Samuel (2016) found out that school infrastructure, teachers use of curriculum, instructional materials and school management had a bearing effect on the learning of Kenyan sign language among learners with hearing impairment. Fisher (2019), on her part, outlined that in sign language classes, videos, quizzes, puzzles, games, diagrams, and printables will really help one learn how to sign or how to build on the sign language that one already know. This means that the availability of these materials can affect a child's learning of sign language.

Research has revealed that if children of deaf parents - whether those children are themselves deaf or hearing - receive input from a visual-gestural language from birth language development in such children do reveal that the acquisition of sign is not delayed (Meier, 2016). On the contrary, deaf children of hearing parents face an interruption in the generation-to-generation transmission of sign language (Meier, 2016). An unknown proportion of these children innovate a home-sign system but when they enter school, they may gain their first effective exposure to a conventional sign language (Meier, 2016). Therefore, the fact that the parent is deaf or hearing can also be a factor. In other words parents input is significant in a child who is deaf's learning of sign language.

3. Methodology

The ex post facto and survey designs were used to conduct the study. The ex post facto design was used in investigating whether there is a significant difference in the mean comprehension level of Sign Language between parents and their children who are deaf. The survey design was used to determine parents and their children who are deaf perception of the factors influencing their learning of Sign Language. The population was all the 15 pupils who are deaf in Morning Star Inclusive Primary School Akumand their 12 parents in 2019. A sample consisting of 12 pupils who are deaf and their 10 parents was chosen by simple random sampling and used for the study. Questionnaires were

administered to pupils and their parents to collect the required data. Using the questionnaires, data was collected to determine whether there was a significant difference in the mean comprehension level of Sign Language between parents and their children who are deaf. Also some data from the questionnaires was collected and analyzed to determine the factors affecting pupils who are deaf and their

parents learning of Sign Language. The data on the comparative analysis was analyzed by using Student t-test inferential statistics. The data that was collected with the intent of determining parents and their children perception of the factors influencing their learning of Sign Language was analyzed by using descriptive statistics specifically percentages.

4. Results

Presented hereunder are the findings of the study.

Research Question 1

In order to answer research question 1, it was translated into the following research hypothesis:

H_0 : There is no significant difference between pupils who are deaf and their parents mean ability to write Sign Language.

H_a : There is a significant difference between pupils who are deaf and their parents mean ability to write Sign Language.

After testing or verifying the hypotheses the following results were obtained:

Table 1: t-test comparison of pupils who are deaf and their parents mean ability to write Sign Language

Variable	Group	N	Mean	S ²	df	Level of Significance	Test-Type	t _{cal}	t _{crit}
Write Sign Language	Pupils	12	15	12	20	0.05	Two-Tailed	5.50	2.086
	Parents	10	7.9	6.77					

The results in the above table showed that there is a significant difference between pupils who are deaf and their parents mean ability to write Sign Language ($t_{cal} > t_{crit}$, H_0 rejected and H_a retained).

Research Question 2

In order to answer research question 2, it was translated into the following research hypothesis:

H_0 : There is no significant difference between pupils who are deaf and their parents mean ability to read Sign Language.

H_a : There is a significant difference between pupils who are deaf and their parents mean ability to read Sign Language.

After testing or verifying the hypotheses the following results were obtained:

Table 2: t-test comparison of pupils who are deaf and their parents mean ability to read Sign Language

Variable	Group	N	Mean	S ²	df	Level of Significance	Test-Type	t _{cal}	t _{crit}
Read Sign Language	Pupils	12	14.5	6.32	20	0.05	Two-Tailed	5.135	2.086
	Parents	10	6.9	11.66					

The results in the above table showed that there is a significant difference between pupils who are deaf and their parents mean ability to read Sign ($t_{cal} > t_{crit}$, H_0 rejected and H_a retained).

Research Question 3

Table 3 shows the factors affecting pupils who are deaf learning of Sign Language in a descending order of magnitude.

Table 3: Factors affecting pupils who are deaf learning of Sign Language

Factor	Percentage of pupils who perceived the factor
Non availability of textbooks and other print materials	66.72%
Non-usage of textbooks and other print materials during teaching of Sign Language	58.3%
Non-availability of Sign Language videos	41.7% each
Non-availability of Sign language resources	
Non availability of sign language games	
Non usage of videos during teaching	33.3%
Non-availability of sign Language interpreters	25.0% each
Non-usage of diagrams that illustrate Sign Language concepts	
Isolation	16.7% each
Lack of peers or models who master sign Language	

Research Question 4

Table 4 shows the factors affecting parents of pupils who are deaf learning of Sign Language in a descending order of magnitude.

Table 4: Factors affecting parents of pupils who are deaf learning of Sign Language

Factor	Percentage of parents who perceived the factor
Non availability of videos	70.0%
Non-availability of textbooks and other print materials	60.0%
Having a busy schedule	50.0% each
Learning is challenging for parent	
Discouragement from others	40.0%
Looking for cure	30.0% each
Non-availability of online resources	
No interest in sign language	
Non-acceptance or denial of the child as being deaf	20.0%
Feeling guilty that something real or imaginary parent did or didn't do caused the deafness	10.% each

5. Discussion

Inferring from the result of the first and second hypotheses, it is evident that a significant difference exist between pupils who are deaf and their parents ability to write or read Sign Language (Tables 1 and 2). These findings corroborate the alternative hypotheses of the study which predicted that there is a significant difference between pupils who are deaf and their parents mean ability to write or read Sign Language. This outcome is also supported by: (Berke, 2018) finding that there is a communication gap between hearing parents and children who are deaf and Meyers and Barte, (1992) finding that, many hearing parents are unable to communicate clearly and unambiguously with their deaf offspring.

The findings on the third research question shows that, factors that affect pupils learning of sign language are non-availability of textbooks and other print materials, non-usage of textbooks and other print materials during the teaching of sign language, non-availability of sign language videos, non-availability of sign language resources, non-availability of sign language games, non -usage of videos during sign language teaching, non-availability of sign language interpreters, non-usage of sign language diagrams to illustrate sign Language concepts, isolation, lack of peers and models who master sign language. These findings corroborate with Haws (2016), findings that access to fluent language models, isolation affect pupils or children's learning of sign language; Florence (2015) findings the teacher factor, teaching / learning resources, influences the use of Sign language in teaching and learning in public primary schools in Kenya; Samuel (2016) findings that, teachers use of curriculum, instructional materials affect the learning of Kenyan sign language among learners with hearing impairment and Fisher (2019), findings that, videos, quizzes, puzzles, games, diagrams, and printables will really help one learn how to sign or how to build on the sign language that one already knows.

The findings on the fourth research question shows that, factors that affect parents learning of sign language in Bamenda are non-availability of Sign Language videos, non-availability of textbooks and other print materials during the teaching of sign language, having a busy schedule, learning is challenging for parents, discouragement from other persons, looking for a cure for hearing problems, non-availability of online resources, no interest in sign language, non-acceptance or denial of the child as being deaf, feeling guilty that real or imaginary the parent did or didn't do resulted in the deafness, fearing that the child will not learn to speak

and lack of confidence. These findings corroborate with Berke (2018) findings that looking for medical treatment for hearing problems, something real or imaginary parents did or didn't do resulted in the deafness, child won't learn how to speak, learning is challenging for parents and lack of confidence affect parents learning of sign language; Meier (2016) finding that discouragement from others affect parents learning of sign language and Birdsey (2016) findings that denial or non-acceptance of the child as being deaf, having a busy schedule, lack of confidence and discouragement from others are factors that affect parents learning of sign language.

6. Conclusion

Based on these findings it can be concluded thatpupils who are deaf and their parents in Morning Star Inclusive Primary School Akum significantly differ in their mean ability to write or read Sign Language and several factors including material resources and social influences affect pupils who are deaf and their parents learning of Sign Language. Consequently the school authorities of Morning Star Inclusive Primary School Akum and other educational stakeholders should organize seminar workshops on Sign Language for parents who are deaf and they should carry out actions that redress the lack of material resources and other factors that affect pupils who are deaf and their parents learning of Sign Language.

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