

Challenges and Coping Mechanisms in Sign Language Interpretation at the University of Dar es Salaam

Fatuma Yusuph Semunyu¹ & Bernadetha Rushahu²

¹Old Tanga Secondary School-Tanzania

²School of Education, University of Dar es Salaam-Tanzania

E-mail¹: semunyufatuma@gmail.com

Abstract

This qualitative study explored sign language interpreters' challenges and coping mechanisms in sign language interpretation for deaf students at the University of Dar es Salaam. Six sign language interpreters were purposively selected for interviews. The study revealed that interpreters' efforts to provide interpretation were hindered by their inadequate preparation for interpretation, the difficulty interpreting content of students' courses of specialisation, and varying signs. The study further uncovered that interpreters adjusted themselves by reading subject materials from the internet and lexicalised signs. It is suggested that to improve interpretation, lecturers collaborate with interpreters by sharing subject materials and holding regular briefings. It is further recommended that for meaningful interpretation services, the quality of sign language interpretation should be enhanced.

Keywords: coping mechanism, deaf, sign language, sign language interpretation,

Introduction

The onset of inclusive education has led to an increase in students with disabilities having access to higher education. However, higher education contexts have been found to be challenging when it comes to the teaching and learning of students with disabilities, such as those who are deaf (Kisanga, 2020). For the inclusion of deaf students to be meaningful, the provision of support services like sign language interpretation to this population of learners is vital (Powell, 2013; Oppong, Fobi & Fobi, 2016). In this study, the term “deaf” is used to indicate a broader definition referring to all degrees of hearing loss that depend on sign language interpretation. Notwithstanding the potential of providing interpretation to the students, sign language in Tanzania is relatively new in the field of linguistics and has yet to attract many researchers and linguists in particular (Tcherneshoff, 2019).

In Tanzania, the available education policies, legislation, and guidelines advocate for sign language interpretation support services in public places. For example, the Education and Training Policy (ETP) of 2014 stipulates that sign language is to be used in communication between deaf people and other people as well as to be taught as a subject at various levels of education and training (MoEVT, 2014). Thus, the recognition of sign language in public places and educational institutions, in particular, is revolutionary in the education of deaf students. The National Strategy of Inclusive Education [NSIE] of 2018 (MoEST, 2018), built on the achievements of the former NSIE of 2009, endorsed in strategy 2.1 that “Sign language and alternative communication means can be used in addition to spoken language or written language. Sign language interpreters should be used where teachers cannot communicate in sign language with their deaf learners” (p. 29). However, there had been no official training for interpreters since the 1990s (World Federation for the Deaf [WFD] 2008) to work at the university level. This compelled UDSM to employ graduates with bachelor’s degrees in special needs education to provide interpretation services because of their sign language skills.

Generally, it is acknowledged that sign language interpretation is a landmark in the education of deaf students, especially at the university level (de Freitas, Delou, Amorim, Teixeira, & Castro, 2017). The great significance of sign language interpretation has been affirmed to provide educational support services to students who are deaf in an inclusive education setting by removing the communication barrier during the teaching and learning process (Oppong et al., 2016). Sign language interpretation facilitates communication as the interpreter stands as a bridge to connect two people who do not understand each other’s language (de Freitas et al., 2017). In this regard, an interpreter is the ear and voice of a deaf student to interpret what is said and voice what is signed (Adade, Appau, Mprah, Fobi, & Marfo, 2022). In providing simultaneous interpretation, interpreters deliver the source information’s intended meaning into the target language with a slight delay after the source is uttered (Janzen, 2005). In that regard, in order to convey faithful information, the interpreter uses different strategies to cope with the linguistic challenges they encounter (de Wit, 2010). The interpreter needs coping mechanisms due to the interpreting environment as well as the demand associated with language because of the linguistic nature of the language (Dean & Pollard, 2001). Though, practically, it is evident that even interpreters with extensive experience and much familiarity with deaf students appear to fail to provide sufficient interpretation services.

Given the importance of sign language interpretation in facilitating communication during teaching and learning at the university level in Tanzania, the mastery of sign

language interpretation skills is essential. The best way to determine proficiency in sign language interpretation is through the provision of formal sign language training. Evidence indicates that sign language interpretation training programmes in Tanzania are informally and formally provided (WFD, 2008). There had been no formal training or certification for interpreters since the 1990s (Kortekisalo, 2015). The formal training was first provided in 2017 at the University of Dar es Salaam (UDSM) at the certificate level (UDSM Undergraduate Admission Procedures, 2022–23). Yet, according to the academic trend of deaf students' enrolment in Tanzanian education settings, certificates in sign language interpretation are unsatisfactory, especially in higher education institutions.

It has been noted by Glaser and Van Pletzen (2012) that providing sign language interpretation to deaf students has not been a simple operation. University interpretation is highly dependent on interpreters' skills, as universities have a wide range of skills and knowledge of the varied array of courses and topics. However, there is no legislation deciding the necessary level of qualification interpreters should attain before working at the university level (Woodall-Greene, 2021). This mirrors Napier and Baker (2004), who found that the deaf students' understanding of lectures through sign language interpretation ranges from 50–90% instead of 100%. According to Powel (2013), interpreters need to have subject-specific knowledge to perform their job effectively. The same was observed when Oppong et al. (2016) noted that the quality of sign language interpreting services was a major issue of concern to deaf students who used sign language interpreting services to access information during lectures. Several studies have questioned whether interpretation is indeed the most suitable method by which to educate deaf learners (Swift, 2012).

Studies by Kisanga (2020), Rushahu (2017), Komba, Shughuru, Kusenha, & Kapinga, (2017), and Jalang'o (2016) have demonstrated that the learning process of students who are deaf in Tanzania is more complex. In many cases, deaf students face communication barriers due to a lack of sign language skills and quality interpretation services. According to Mihega (2014), deaf students also have varied backgrounds in language and signing skills depending on where they pursued their primary and secondary education. These are either special or inclusive schools where sign language and speech are the dominant modes of communication. Schools further have different signing systems due to Tanzania's tier linguistic system, where ethnic languages are spoken at home, primary school teaching is in Kiswahili, and secondary school level teaching is in English (Jalang'o, 2016).

Despite the complexities of providing sign language interpretation to deaf students, the University of Dar es Salaam, as a public university, provides sign language

interpretation for deaf students. However, there is little, if any, research evidence about sign language interpretation and how it is done in university settings. Studies so far conducted at the university have focused on sign language interpretation as a challenge to the communication of deaf students. Nothing is mentioned about the challenges of interpretation faced by interpreters and their coping mechanisms in supporting the learning of deaf students who are naturally heterogeneous, with varied educational histories, sign language, and diverse subjects of specialization. From this background, this paper explores challenges and coping mechanisms in sign language interpretation at the University of Dar es Salaam. The study was guided by two research questions, including:

- i. What challenges do sign language interpreters encounter during interpreting for deaf students at the University of Dar es Salaam?
- ii. How do sign language interpreters cope with the challenges encountered in the process of providing interpretation services to the deaf student?

Methodology

The study used a qualitative research approach because of its nature to allow understanding and interpretation of the meaning an individual or group ascribes to a social problem and because it involves data typically collected in participant settings (Creswell, 2014; Creswell & Creswell, 2018). The study was conducted at the University of Dar es Salaam (UDSM) on its two campuses, namely, the Mwalimu Nyerere Mlimani campus and the Dar es Salaam University College of Education (DUCE) campus. The UDSM was chosen for this study because it is the oldest university in the country with a history of enrolling deaf students. The first partially deaf student joined the university in 1990. In 2006, a student who was totally deaf joined the university, and this was the first time the university hired a sign language interpreter to facilitate communication (Tungaraza, 2012). The two campuses were selected because they had special education needs units that provide sign language interpretation services to deaf students. Records from SENU indicated that by 2021, the UDSM would have six sign language interpreters, four at Mwalimu Nyerere Mlimani campus and two at DUCE (UDSM-SENU, 2021). These participants were purposely selected because of the role they play in facilitating deaf students' learning. The interpreters were the key mediators in facilitating communication and were thus considered to be able to inform about the challenges experienced and their coping mechanisms. Data were collected from six sign language interpreters using semi-structured interviews.

The data were subjected to thematic analysis. This enabled the process of identifying, analysing and recording themes extracted from the data. Data were summarised,

coded, categorised and compared to establish themes as proposed by Bryman (2016); Braun & Clarke (2013). The themes were extracted from quotes. The verbatim quotation assigned to the interpreters were identified as Interpreter 1, 2, 3 etc and campuses were identified as CA and CB.

Findings and Discussion

Challenges encountered by sign language interpreters

The study sought to explore challenges sign language interpreters encountered when providing interpretation services to deaf students. Interpreters' experiences revolved around four main themes: inadequate preparation for interpretation; difficulties in interpreting all courses of the students; difficulties in interpreting from sign language to spoken language; and the existence of sign variations.

Inadequate preparation for interpretation

On inquiring how preparation for interpretation was done, the findings revealed that there was inadequate preparation for interpretation because there was no sharing of teaching and learning materials between sign language interpreters and the lecturers before lecture. The sign language interpreters and deaf students had a tendency to discuss the expected terms that would be used in the lecture. Before interpreters attend the lecture sessions, they would ask for the course outline from deaf students to see the topics that would be taught in a particular subject. From the course outline, interpreters would read the topics from their computers while in their offices. Interpreters were provided with free access to the internet; thus, they went through the topics to familiarise themselves. In the course of reading, they discover terms that have no signs, which they note down for discussion with deaf students on sign language to be used for particular terms when it happens in the course of the lecture. However, interpreters perceived that their preparation did not help much because they did not know the exact vocabulary that the lecturer would use, and oftentimes lecturers used technical terms different from what interpreters had anticipated and been prepared for. One interpreter said:

As an interpreter, it is my responsibility to get a course outline from the students. In the course outline, you see what topics will be covered, and so through the internet, I read and find some vocabularies and sit down with students to see through those vocabularies and agree on the kind of signs we will use. Sometimes, we prepare ourselves with the vocabulary, but when we enter the classrooms, the lecturer uses other difficult technical words that are complex to understand (Interpreter 5, CB).

The quote above indicates that interpreters prepare themselves for interpreting by agreeing with deaf students on what signs should be used and getting the teaching schedule was insufficient. This suggests that interpreters did not prepare adequately for interpretation but just interpreted whatever the lecturers prepared to teach. The findings are incongruent with the study by Knox (2006), who reported four aspects of preparation regarded as essential for effective interpretation to occur, including preparation for the materials, settings, visual aids, and physical surroundings in which the interpretation should occur. This was especially relevant when there were several subjects across the different disciplines, presenting with them the specialised terminologies. With respect to preparation for the materials, interpreters need to ask for lecture notes, printouts of PowerPoint presentations, and prior knowledge the students might be assumed to possess on the subject. Powell (2013) viewed that preparation allows the interpreters to discuss how they will represent jargons and concepts prior to the lecture. Similarly, Deneke (2017) expressed that not knowing the subject content erodes the interpreter's confidence and displays fear in their faces. As it was reported in previous studies, in this study, it was rather challenging for the sign language interpreters to prepare for the interpretation because interpreters were not asking for teaching materials from lecturers. This implies that students who are deaf were denied their right to fully access the lectures facilitated by interpretation.

Difficulty interpreting the content of students' courses of specialisation

Interpreting all contents of courses that were studied by deaf students using sign language interpretation was another challenge identified by interpreters. During interviews, interpreters revealed that there was no course of specialisation in interpretation. They provided interpretation services in whichever courses deaf students undertook. Although sign language interpreters were interpreting all courses contents for the deaf students, they experienced some difficulties interpreting courses of specialisation as opposed to general courses like Development Studies and Education since courses of specialisation use technical terms whose orthography and pronunciation are difficult to master. Interpreters felt more at ease when they interpreted general courses or subjects which they had some knowledge. It was argued that interpretation needed proper understanding of the content to be interpreted so as to have a wide choice of words; otherwise, interpreters get stranded, as illustrated by one of the interpreters:

I interpret all of them; I work in the School of Education, and I interpret psychology, management and everything. I am also a classroom interpreter for a sociology student, and that is where I feel the best. I would rather take sociology than psychology because

of my background as a sociology interpreter. One course that is specifically challenging to me is Kiswahili. It is challenging and tiring to cover all those topics that you never studied and all those theories that you never had a proper understanding of. We are not doing perfectly because an educational interpreter needs to have areas of expertise for a wide choice of signs to use (Interpreter 1, CB).

The interview quote indicates that interpreters do not interpret the content of courses of their specialisations. Although interpreters were providing interpretation services to all student courses, they felt comfortable dealing with or interpreting subjects with which they were familiar. They faced difficulty interpreting all content of all courses because of inadequate knowledge on those courses. They argued that interpretation needed proper understanding of the content to be interpreted so as to have a wide choice of signs. In addition, the participants viewed it as challenging to interpret unfamiliar subjects because they often got tired and therefore became ineffective and unconfident in interpreting. This finding aligns with what was reported by Powell (2013) that university interpretation was very different from community interpretation. Due to the nature of the lectures, an interpreter really needs to be familiar with the discourse environment and, preferably, have subject-specific knowledge. Similarly, Woodall-Greene (2021) revealed that the collegiate setting is challenging because of the variety of interpretation assignments, including interpreting in engineering and vet-type classes where a lot of vocabularies are used. Al Hashimi, Sadoun, Almahoozi, Jamel, & Hassan (2021) reiterates that an interpreter must be familiar with the specialisation and the course content, as well as the terminology that will be interpreted. This will facilitate the translation process by minimising the time that may be wasted by the lecturer in explaining the content to the interpreter while also attempting to explain it to the students.

Difficulty interpreting from sign language to spoken language (voicing)

The study also examined how interpreters sign the spoken language and translate the sign language into voice (voicing). The aim was to explore how sign language interpreters perceived the utterance from lecturers, hearing students, and students who are deaf and their ability to deliver it in a target language. The findings revealed that interpreters were more skilled in interpretation from spoken language to sign language than vice versa. Interpreters viewed voicing students' sign language as challenging because of the signs variation and because they are not used to speaking during lecture sessions. In this regard, one interpreter said:

Any interpreter can tell you that going from voice to sign is a bit

easier than going from sign to voice. The reason behind this is that when interpreting from voice to sign, you sign the signs that you are aware of, but when interpreting from sign to voice, sometimes you receive signs that you are not aware of. Also, most of the work here is done by signing rather than voicing. I can speak when students want to consult any person; when there is a meeting or place where we need to talk, I can speak for them. I voice according to the context, and that's where the problem comes in, especially when a student realises that I said something differently from what a student signed (Interpreter 6, CB).

The quote indicates that signs that were not harmonised are not familiar to sign language interpreters to comprehend and interpret into voice. The implication here is that interpreters were challenged with understanding signs that were used by deaf students, and that hindered them from speaking for deaf students because they might understand the sign differently from what was intended by the deaf students. Interpreters were of the view that they were used to interpreting from voice to sign language. This implies that the more they practised interpreting, the more skilled they became at interpreting to voice. The findings concur with those of Haug, Bontempo, Leeson, Napier, Nicodemus, Bogaerde & Vermeerberge (2017), who reported both high and low levels of confidence in the interpreter's language production when working in signed and spoken languages. However, a slight trend towards higher confidence was noted when the deaf leader rated the interpreter's performance in sign language rather than spoken language. Similarly, a study by Nicodemus and Emmorey (2013) reported that sign language interpreters had experience and training in interpreting from L1 (English) into L2 (ASL) because there was a greater demand for English (spoken language) to sign language than sign language to English.

Variation of signs

The study also examined how sign language interpreters had experienced different signs when they were interpreting during teaching and learning. The finding reveals two aspects of sign variations that challenged interpreters, including the geographical location and educational background of the interpreter and deaf students. With regard to geographical location, interpreters reported that they face differences like any other language because languages are the product of the community. In this situation, the interpreter and deaf student may differ in the use of the signs. Regarding education background, deaf students were taught sign language in different schools, some in special schools and others in inclusive schools. These schools have different orientations toward teaching deaf students sign language.

One interpreter narrated:

We meet different deaf students with different signs, and they have been experiencing different local signs. It takes us some time to get to know each other. For example, one of my students, when joining the university, came with the notion of orienting me; she wanted to orient me to her signs, claiming that I could not fit in to interpret in the class. I remember I once signed a certain sign referring to China; the sign that a student had was different from mine. The sign I used was new to the deaf student she rejected the sign. So, it is the responsibility of the interpreter to be flexible to accommodate the communicative needs of the client. I abandoned the other one that I had and adapted the one that my client was using (Interpreter 2, CB).

Regarding the differences in the signs, specifically, the challenges revolved around two aspects: how to identify differences in signs and their respective meanings and how to negotiate, match, and harmonise the signs and their respective meanings. Interpreters consider that students who are deaf come with different signs compared to the harmonised Tanzania Sign Language. The misunderstandings and resistance of the deaf students to adopt the signs of the interpreters demand that the interpreters adapt instantly and use new signs in the proceeding lecture sessions. These findings are incongruent with the study by Deneke (2017) in Zambia, which found that although most deaf students come from different provinces, which is a factor that contributes to the likelihood of variation in sign language, the findings revealed no challenges were encountered due to variation in sign language. In addition, the finding echoes Chibwe's (2015) finding that interpreters, students who are deaf, and teachers experience sign variation during teaching and learning, which hampers the learning experiences of the deaf.

Sign language interpreters' coping mechanisms

The study revealed that sign language interpreters were able to navigate through interpretation by applying coping mechanisms, including reading subject content materials from the Internet and the formulation of signs and fingerspelling, in order to cope with challenges encountered during the interpretation process. These strategies are presented and discussed in the following sub-sections:

Reading subject-content material from the internet

Sign language interpreters reported searching and reading on the Internet in order to familiarise themselves with the students' course teaching and learning materials

that they were unfamiliar with. Interpreters reported using student subject course outlines to establish what to read that was expected to be taught. They viewed reading as facilitating familiarisation with the content, which enhanced interpretation in a way that students could easily understand. Interpreters also perceived that understanding the content beforehand that was to be presented made it easier to translate it into another language without hesitation in the middle of the session. Further reading of the subject content also helped interpreters to prepare signs of some vocabularies in advance before the lecture hour. One interpreter revealed:

I normally spend a lot of time reading on the Internet before lecture sessions. From the students' course outline, you see what topics one has to cover, and so through the Internet, I read and found some vocabulary. Though I read and find vocabularies, I still have to sit down with my students and agree on the vocabularies that we will use so as to reduce misunderstanding of signs (Interpreter 4, CA).

Interpreters revealed that reading the subject content on the internet in advance helped them understand the lecture for interpretation. In addition, interpreters believed that reading the related subject contents from the Internet helped them to be aware of some vocabulary that might be used in the lectures. They also perceived that interpreting without prior information was difficult, and reading the material that was not prepared in advance for the lecture also hindered meaningful interpretation. The present findings are inconsistent with those by Mapson (2017), who revealed two linguistic coping mechanisms used by sign language interpreters in education settings, namely, transitional style and omission. In transitional style, an interpreter switches between free and literal interpretation, a combination particularly common in higher education settings. The sign language interpreter also consciously and unconsciously uses omission within the lexically dense text or speech, which is often grammatically complex and subject-specific.

Sign's formulation and fingerspelling

Formulating signs and fingerspelling was another coping mechanism revealed in the findings. It was revealed by sign language interpreters that they used fingerspelling for things that did not have established signs in the sign language and created signs from the spelled or written word(s) that had no signs. The formulation of the signs was done after mutual agreement between the interpreter and the deaf student was reached. An interpreter would fingerspell the word, and deaf student would suggest the sign, or the interpreter may formulate the sign but first discuss it with the deaf student until they agree with the sign to be used.

I and my student(s) decide on the signs to be used, you see! During

the lecture, sometimes a word comes up that is new to me. For you to understand and for me to give you what the lecturer says, maybe I write the word (finger spelling) or write it on the paper. After the lecture, we discuss what sign to use. We agree on what sign to use for a certain word or vocabulary, so next time when the same vocabulary is repeated, we will have already formulated our sign for use. We fingerspell, and though this has an effect, it consumes time because we use spellings that sometimes deaf students do not understand and ask us to repeat (Interpreter 3, CA).

It appears that sign formulation and fingerspelling, which were reported as coping strategies, enabled them to facilitate communication during teaching and learning, especially on the subjects they were less familiar with. The findings of this study are congruent with earlier findings by Adam (2012), who reported that finger spelling has two functions in sign languages. It can bridge a lexical gap either because there is no existing lexical equivalent in the host sign language that is a proper noun or if a lexical sign is unknown to the signer. Fingerspelling may also be used as a form of code-switching, where words from spoken language are introduced into sign language for specific purposes such as emphasis and clarification. In the current study, the findings indicate that interpreters work in a collaborative manner in order to achieve success in offering interpretation services for deaf and hard-of-hearing students. de Freitas et al. (2017) noted the use of the manual alphabet to replace the unknown signs and to encode temporarily new signals with and/or in agreement with the students with hearing impairment and officially use it in that particular situation.

Implications of the findings

Under the Education and Training Policy (ETP) of 2014 in Tanzania, the National Strategy of Inclusive Education (NSIE) of 2018, and the United Nations (2006) Convention of People with Disability, students who are deaf have the right to access education, and the sign language interpretation profession is an important aspect for deaf students to access university education. In this regard, more professional training in sign language interpretation and support in the university are vital for interpreters to facilitate teaching and learning for deaf students who are using sign language in their learning. Deaf students should have access to language and become bilingual, which is TSL and the language of instruction (Kiswahili and English), and bicultural between the hearing and deaf cultures. In that way, they are prepared to attend inclusive educational settings. If sign language interpreters were not prepared with skills and knowledge appropriate to the demands of sign language interpretation in university settings, there is a possibility of providing

inadequate sign language interpretation services that facilitate communication during the teaching and learning process.

Conclusions

Based on the findings, one may conclude that sign language interpretation service provided in a regular education is not easy for sign language interpreters. The challenges facing sign language interpreters affect their intention to facilitate communication of deaf students during teaching and learning. Inadequate preparation of interpreters, difficulty interpreting content of student's courses of specialisation and difficulty voicing, held down the possibility of deaf students to realise their academic potentials because they were studying courses that were unfamiliar to interpreters. The fact that the interpreters provided ineffective interpretation made them feel incompetent while providing interpretation services. Sign language interpreters could provide faithful interpretation that would enhance learning of deaf students if they had sign language interpretation skills and relevant basic knowledge of the subjects that are interpreted.

Recommendations

On the basis of the preceding conclusions, sign language is very technical and it is in its own merit. For successful sign language interpretation, the university may need to rethink of providing in-service training and in-house workshops to sign language interpreters. This would serve to orient interpreters in some courses that they do not have education background. This orientation could also create enabling environment for lexicalising signs to ensure interpreters' capacity to navigate university discourse including the complex disciplines such as Science, Technology Engineering and Mathematics (STEM).

Likewise, the study recommends that sign language interpreters should be part of a multidisciplinary teaching team to allow collaboration between them and lecturers for the benefit of students who are deaf. The teamwork would serve to ensure appropriate understanding of courses facilitated by interpretation and adequate preparation of interpretation by previewing lecturers' teaching and learning materials before the actual classroom interpretation assignment.

It is evident that interpreters are more familiar with social science courses. The university could consider recruiting sign language interpreters with various educational specialties. The specialties should include social sciences, natural sciences and mathematics which would ensure the provision of quality interpretation services to all deaf students who are using interpretation services in their learning.

References

- Adade, R., Appau, O., Mprah, W. K., Fobi, D. & Marfo, P. S. (2022). Factors influencing sign language interpretation services in Ghana: The interpreter's perspectives. *Journal of Interpreters*, 30(1), 1-21. <https://digitalcommons.unf.edu/joi/vol30/iss1/1>.
- Adamu, R. (2012). Language contact and borrowing. In R. Pfau, M. Steinbach & B. Woll (Eds), *Sign language: An international handbook* (pp 841-861). De Gruyter Mouton.
- Al Hashimi, S., Sadoun, J., Almahoozi, Y., Jamel, F. S & Hassan, N. (2021). Examining perception on inclusion of deaf and hard of hearing students in art and design higher education in Bahrain. *Cogent Arts and Humanities*, 8(1), 1-23. file:///C:/Users/User/Downloads/Examining_perceptions_of_inclusion_of_deaf_and_har.pdf.
- Braun, V. & Clarke, V. (2013). Teaching Thematic analysis: Overcoming challenges and developing strategies for effective learning. *The Psychologist*, 26(2), pp. 120-123 http://www.thepsychologist.org.uk/archive/archive_home.cfm?volumeID=26&editionID=222&ArticleID=2222.
- Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.
- Chibwe, J. (2015). *Contribution of sign language variations to academic performance of learners with hearing impairment in selected Copper belt and Lusaka special primary schools in Zambia*. Master of Education in Special Education, University of Zambia, Zambia.
- Creswell, J. W. & Creswell, J. D. (2018). *Research design: Qualitative, quantitative and mixed approaches* (5thed.). Sage.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative and mixed approaches* (4th ed.). Sage.
- De Wit, M. (2010) .Linguistics coping strategies from international sign to English. *EUMALSI*, 3(1), 1-23.
- de Freitas, C., Delou, C. M., Amorim, G., Teixeira, E. & Castro, H. C. (2017). Sign language interpreter: Perception analysis about working with deaf students in a federal institute of education, science and technology in the northern region of Brazil. *Creative Education*, 6, pp. 657665. <https://www.scirp.org/journal/paperinformation.aspx?paperid=75901>.
- Dean, R. & Pollard, R. Q. (2001). The application of demand-control theory to sign language interpreting: Implication for stress and interpreter training. *Journal of Deaf Studies and Deaf Education*, 6(1), 1-14.

- Deneke, Y. G. (2017). *Accessibility of sign language services to the deaf in tertiary education institution: A case of the university of Zambia and Zambia institute of special education*. Master thesis, University of Zambia. <http://dspace.unza.zm/bitstream/handle/123456789/5625/Yohannes%20corrected%20Dissertation.pdf?sequence=1&isA>.
- Glaser, M & Van Pletzen, E. (2012). Inclusive education for deaf students: Literacy practices and South African sign language. *Journal of South African Linguistic and Applied Language Studies*, 30(1), 25-37.
- Haug, T., Bontempo, K., Leeson, L., Napier, J., Nicodemus, B., Bogaerde, B. & Vermeerberge, M. (2017). Deaf leaders' strategies for working with signed language interpreters: An examination across seven countries. *Across Language and Culture* 18(1), pp. 107-131.
- Jalang'o, C. V. (2016). *Educational challenges and coping strategies among students with hearing disability in Tanzania inclusive public secondary schools*. Unpublished PhD (Education) thesis, University of Dar es Salaam, Tanzania.
- Janzen, T. (2005). *Topics on sign language interpreting: Theory and practice*. Amsterdam, John Benjamin Publishing Company.
- Kisanga, S. E (2020). Barrier to learning faced by students who are deaf and hard of hearing in higher institutions in Tanzania. *PED*, 37(2), 201-218. <https://scholar.google.com/citations?user=vsvwdyUAAAAJ&hl=en>
- Knox, S. (2006). Sign language interpreting in an academic setting: Preparation strategies and consideration. *New Series*, 3(1), 183-204.
- Komba, W., Shughuru, P., Kusenha, N. S & Kapinga, O. (2017). *Research report in implementation of inclusive education in higher learning institution (HLIs) in Tanzania: A case of three universities in Tanzania*. Open Society Initiative for East Africa.
- Kortekisalo, M. (2015). *A study of qualification process and competencies of sign language interpreters in African context: a contribution to the process of establishing a sign language training programme in Ethiopia*. Theses, Diaconia University. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3698981/>.
- Mapson, R. (2017). Book review: linguistic coping strategies in sign language interpreting. *International Journal of Interpreter Education*, 6(1), pp. 70-73. <https://tigerprints.clemson.edu/ijie/vol9/iss1/9>.
- Migehe, J. D. (2014). *An analysis of academic performance of students with hearing impairment in secondary schools in Tanzania*. MA (Education) thesis, The Open University of Tanzania.

- Ministry of Education and Vocational Training [MoEVT] (2014). *Sera na mafunzo ya elimu*. Dar es Salaam, Tanzania: Ministry of Education and Vocational Training.
- MoEST. (2018). *National strategy on inclusive education (NSIE) 2018-2020*. Dar es Salaam: Ministry of Education Science and Technology (MoEST).
- Napier, J. & Baker, R. (2004). Accessing university education: Perception, preferences and expectations of interpreting by deaf students. *Journal of Deaf Studies and Deaf Education*, 9(2), 229-238.
- Nicodemus, B. & Emmorey, K. (2013). Direction asymmetries in spoken and signed language interpreting. *Biling (Camb Eng)*, 16(3), 624-636. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3698981/>.
- Oppong, A. M., Fobi, D., & Fobi, J. (2016). Deaf students' perception about quality of sign language interpreting service. *International Journal of Educational Leadership*, 7(1), 63-73. <https://www.researchgate.net/publication/322636038>
- Powell, D. (2013). A case of two sign language interpreters working in post-secondary education in New Zealand. *International Journal of Teaching and Learning in Higher Education*, 23(3), 297-304.
- Rushahu, B. G. (2017). *Guidance and counselling services to students with disabilities in higher learning institutions in Tanzania: Practice and implication*. PhD thesis, University of Oldenburg.
- Swift, O. B. (2012). *The role of signed language interpreters in postsecondary education settings in South Africa*. Master of Art in Linguistics thesis: University of South Africa
- Tcherneshoff, K. C. (2019). *Na nyinginekutokanjeya Tanzania: Discussions of Tanzania sign language in a demissionizing context*. Master's (African studies/Art) thesis, University of Helsinki. <https://core.ac.uk/download/pdf/224642576.pdf>.
- Tungaraza, F. D. (2012). Sixty years of special need education in Tanzania: Celebrating audacity, commitment and resilience. *A Journal of Contemporary Research (LWATI)*, 9(1), 86-109.
- United Nations [UN]. (2006). *Convention on the rights of persons with disabilities and optional protocol (CRPD)*. United Nations.
- University of Dar es Salaam [UDSM]. (2021). *Special Education Needs Unit (SENU)*. University of Dar es Salaam.
- University of Dar es Salaam [UDSM]. (2022/23). Undergraduate programmes and admission procedures: Office of the Deputy Vice Chancellor

(Academic) and Director of undergraduate studies. https://www.udsm.ac.tz/upload/20220707_030412_UDSM_AdmissionHandbook_2022_2023.pdf.

Woodall-Green, T. (2021). Collegiate sign language interpreters: A case study. Doctor of Philosophy, Oklahoma State University. https://shareok.org/bitstream/handle/11244/330895/WoodallGreene_okstate_0664D_17222.pdf?sequence=1.

World Federation of the Deaf, (2008). Global Survey WFD regional secretary for Southern and Eastern Africa (WFD RSESA) by the World Federation of the Deaf and the Swedish National Association of the Deaf. <http://www.wfdeaf.org/wp-content/uploads/2011/06/5.-RSESA-Regional-Survey-Report-No-5-English-Version.pdf>.