Art. #1735, 7 pages, https://doi.org/10.15700/saje.v40n2a1735

The effect of limited sign language as barrier to teaching and learning among Deaf learners in South Africa

Winnie Poelane Ngobeni and Joseph Ramathibela Maimane
Department of Professional Studies, Faculty of Humanities, Central University of Technology, Bloemfontein, South Africa
wpngobeni@gmail.com
Mmushetji Petrus Rankhumise
Department of Mathematics, Science and Business Education, Faculty of Humanities, Tshwane University of Technology, Soshanguve, South Africa

In the study reported on here we investigated the effects of sign language barriers among Deaf learners in special schools for the Deaf and Blind in the Motheo District in the Free State province of South Africa. Semi-structured focus group interviews were held with 7 teachers (2 males and 5 females) and 10 Grade 8 learners (6 males and 4 females) who used sign language as their first language. We employed a qualitative research approach and data were collected, themes identified, and learners were observed in their natural classroom environment. Open-ended questions were used when interviewing the teachers and learners of the selected school. South African Sign Language (SASL) is used as language of learning and teaching in schools for the Deaf. A qualified sign language interpreter translated the data. The results of the study show a lack of in-service training in SASL for teachers. It was found that learners acquired language at school rather than in the home environment, and a lack of physical resources were responsible for the learners' poor performance. We recommend that universities offer SASL as common subject – especially for education students.

Keywords: Deaf learner; medium of instruction; performance; sign language

Introduction and Background

Hearing parents who learn that their child suffers from hearing loss, especially those who are not familiar with Deaf people and the Deaf culture, may, as a result of shock and grief because of the diagnosis, feel that a barrier exists between them and their child (Garden, 2010). Although sign language is an important element in the Deaf culture, not all Deaf people use it. They use the oral method or total communication instead, because the family is confused about the language the child will use when meeting other people or participate in normal cultural activities (Garden, 2010). Deaf children are seldom aware of what Deaf culture means when they first arrive at a school for the Deaf (Akach, Demey, Matabane, Van Herreweghe & Vermeerbergen, 2009; Garden, 2010). Deaf education is a neglected field, which needs attention (Akach et al., 2009).

Deafness is a condition in which individuals suffer from hearing loss, which influences their development of spoken languages. People who work with Deaf children must understand their cultural norms and values to be able to communicate with them and advise parents to send their children to special schools that cater for the Deaf (Akach et al., 2009). Deaf children are normally placed at institutions with the belief that they will acquire the language from an adult who is Deaf and learn the language from other people whom they meet in class or hostels where they reside. According to Rietveld-Van Wingerden and Tijsseling (2010), the practice of removing children and placing them with other Deaf people is the main disadvantage experienced by Deaf children in their mastering of sign language.

Sign language is the principal means of communication for Deaf people, but since they grow up in a hearing world, they are actually functional, bilingual people. They have a sufficient command of both their sign language and informal sign language, or the ability to lip-read spoken language which helps them where they experience communication breakdown (Bank, 2015; Grosjean, 2010). Sign language has developed naturally through its use by the community of users in a natural context and evolved and developed over time as it was passed down from generation to generation. Sign language used in one country is identifiably distinct from the sign language used in another country, particularly where the countries are geographically and historically unrelated (Lavia & Moore, 2010). Although SASL is not recognised as an official language in South Africa, it does have the status of a medium of instruction in schools for the Deaf.

The Deaf of South Africa have developed and created their own culture shaped by personal history, social class, gender, culture and religion (Quinn, 2010; Storbeck & Magongwa 2006). The Deaf in South Africa are from various cultures, religions, lifestyles, beliefs and education.

In this study we focused on the sign language barriers to learning that affect the performance of Deaf learners at special schools.

Literature Review

Most Deaf learners start school at the age of 10 years or older because their parents believe that younger children are too young to stay at school hostels. However, taking their children to school at that age is problematic, because learners in the lower grades tend to make fun of them, causing a great deal of frustration

and unhappiness. Moreover, they end up being placed in skills-based classes, even though some do not have a passion for the skills they are meant to develop, resulting in them dropping out of school.

The gap created by not learning any spoken or sign language between birth and starting school, does not cease to exist (Botha, Smit & Oosthuizen, 2009; De Vos, Strydom, Fouché & Delport, 2005). As Deaf learners should use sign language as their first language (L1) in all subjects, they become frustrated due to their lack thereof (Landsberg, Krüger & Nel, 2005). It is difficult for some Deaf learners to learn sign language while they are under tremendous pressure to cope with mastering the rest of the curriculum. This also presents a challenge to some as learners who are weak in inclusive programmes are referred to special schools to learn practical skills, which are normally vocational. According to Akach et al. (2009), 90% of teachers in South Africa teach Deaf children without any knowledge of SASL. Traditionally, teachers demonstrate and explain course material in spoken language. In situations where learners do not understand, the communication barrier may cause some learners to underperform academically (Biggs & Tang, 2007).

Schools for the Deaf have occupational therapists that help to assess all learners at intake; based on this assessment, some learners are referred to skills classes. It is always better to start teaching Deaf children sign language at an early age as the language skills and fine motor skills acquired in pre-school form the building blocks for their future learning. Deaf children often attend pre-school in a hearing pre-school situation where the parents enrol them for different reasons. Parents either work far from a school for the Deaf or view them as too young to go to a hostel (Akach et al., 2009). The direct consequence is that the children do not acquire any of the early developmental skills adopted by hearing children (Akach et al., 2009). The spoken language used for teaching in these schools does not benefit the Deaf child. In terms of future development, it would be more conducive to learning if these children were given the opportunity to attend schools for the Deaf. Unfortunately, not many schools cater solely for the Deaf and those that do are often far away from learners' homes. Parents are also afraid to send their children to boarding school at an early age (Landsberg et al., 2005; Ryan & Deci, 2009). If neither the teacher nor the learner is well versed in signing, this poses a barrier to teaching and learning.

However, teachers must find ways of dealing with the sign language problems and somehow overcome or compensate for them.

Stander and McIlroy (2017) argue that huge amounts of time and energy have been spent on education transformation in South Africa to revise policy documents to include SASL to raise Deaf learners' achievement.

Theoretical Framework

Children's ability of learning a language is linked with the perception that humans are considered to be generators of representation. Recent research on the importance of learning a language through hearing is emphasised by Tamis-LeMonda, Kuchirko, Luo, Escobar and Bornstein (2017). They highlight the importance of learning language in a naturalistic context and underscore the importance of hearing. In the case of Deaf children, it is thus even more challenging to acquire a language without being able to follow it due to their deafness. Tamis-LeMonda et al. (2017) highlight the value of caregiver attention and support (identified by Piaget, 1981) as imperative in language development. In the case of Deaf children, caregiver support becomes even more paramount. Tamis-LeMonda et al. (2017) emphasise the value of structured tasks to make tasks more digestible to learners. They emphasise that physical gestures and visual cues are crucial in language development (Tamis-LeMonda et al., 2017).

Courtin (2000) argues that in the past Deaf children's cognitive abilities were viewed as inferior to those of hearing children, because sign language was not valued and not all that readily used. The availability of sign language affects cognitive functioning which leads to greater creativity (Courtin, 2000).

Piaget's (1981) theories about the psychology of learning are based on mental development, language, play, and comprehension. Furthermore, Piaget's pedagogical theory was based on psychology, logic, and biology and this is reflected in how he defines thinking, and how it is conditioned by genetics and built through social cultural stimuli. Learners acquire knowledge in an active way, and despite the fact that it occurs unconsciously and passively, it is a process that only becomes meaningful in situations of change. Moreover, learning involves adapting to change (Piaget, 1981). This language acquisition theory explains the dynamics of adaptation through the processes of *assimilation* and *accommodation* (Block, 1982).

Language influences communication by allowing subjects to explain their actions in words. It facilitates scaffolding and building on past knowledge and helps to recall moments and situations that assisted in guiding previous behaviour (Piaget, 1981). It also allows speakers to anticipate future actions that have not yet occurred. These intended actions can be replaced with words that may even be postponed or rejected. Language itself, in effect, combines concepts and notions that can be grasped by learners and reinforce individual thinking through a broad system of collective

thought, which forms an integral part of language development.

In reality, people want their experiences to make sense, and have an intrinsic need for understanding, order and certainty (Budelmann, 2000). Deaf people are unable to do phonics or spelling with their mouths, and instead they fingerspell. This means that the development of schema has never taken place satisfactorily. Piaget states that the development of schemata is required for understanding. Schemata are units of the sound that form the nucleus of a syllable (Eggen & Kauchak, 2010). When Deaf are at school-going age, they develop more abstract schemes of classification and proportional reasoning. Sternberg and Sternberg (2012) assert that human intelligence can be viewed as an integrated or "umbrella" psychological construct for a great deal of theory and research on the cognitive process to enhance learning and the ability to adapt to the surrounding environment.

According to Hardin, Blanchard, Kemmery, Appenzeller and Parker (2014), American Sign Language (ASL) is the primary language used by people who are Deaf and hard of hearing. They use various modes of communication to effectively communicate with those who do not know or use ASL.

The South African education system lacks skilled and fluent sign language teachers and learning resources. This has an effect on the teaching and learning of Deaf learners. Most Deaf learners go to school without having established any language as their home language. This implies that they do not have a way of dealing with sign language barriers during the teaching and learning process. Deaf learners are visually oriented people as they depend on visual cues for communication. They use their eyes as their ears, and their hands as their mouths. Therefore, they cannot "listen" while performing a task (Chataika, 2010). Moreover, the absence of skilled sign language teachers is a barrier to learning by Deaf learners.

Research Questions

This study was guided by the following research questions:

1) What is the effect of being taught by non-fluent sign language teachers on Deaf learners in special schools for the Deaf?
2) What is the effect of sign language barriers on the teaching and learning of Deaf learners?

Methodology

A qualitative approach was used in conducting the study, and an interpretivist research paradigm enabled the researchers to observe the participants in a natural setting embracing real-life circumstances and social factors. The study stemmed from a phenomenological approach and used a case study as research type, since it was a descriptive study on how individuals experienced the phenomenon researched. We attempted to gain access to individuals' life-worlds, which is their world of experience where consciousness exists.

Participants and Setting

We observed a Grade 8 English class to test the competency of teachers in teaching Deaf learners using SASL. The sample consisted of Grade 8 learners from a special school for the Deaf and Blind in the Motheo District, South Africa. The class comprised 10 learners, six males and four females from a population of 50. Grade 8 learners from the entire population of 347 learners at the school were conveniently selected. A sample of seven teachers was purposefully selected from a population of 55 teachers.

Data Collection and Procedure

We collected data through semi-structured interviews and video-recorded classroom observations where we observed the teachers' competency. Conducting in-depth interviews presented a common method for gaining access to individuals' life-worlds. We observed one teacher who used SASL as language of learning and teaching (LoLT) to teach Deaf learners. Learners and teachers were interviewed using SASL to obtain in-depth information.

Data Analysis

The data solicited during the interviews were categorised according to thematic analysis. The main task in the data analysis stage was to identify common themes from the participants' descriptions of their experiences, and to code such themes. Video-recorded lessons were analysed to observe the participants' reactions and the way in which the teachers presented the lessons using sign language. The videos were analysed with the help of a qualified sign language interpreter.

Ethical Considerations

We obtained permission from the Deaf learners' parents for their participation in the research and the learners' and the teachers' consent were sought before we started with the research. We obtained ethical clearance to do the research from the Free State Provincial Department of Education. In the study the participants' anonymity was guaranteed. No participants were coerced into taking part in the research and they were reassured that they could withdraw from the study at any time should they feel uncomfortable to participate.

Findings and Discussions

We observed that the classroom environment lacked visual charts on the walls to create an environment conducive to learning. The teacher was not fluent in SASL. He experienced a language barrier and used more actions than signing. Learners looked as though they were lost and seemed bored.

There was no active participation in the classroom. Deaf learners acquire language and content more effectively by means of pictures than through instruction. We found that there was a communication breakdown between the learners and the teacher, because he did not teach the polymorphemic (polycomponential) signs. He lacked knowledge of sign language. This was clear as he used inappropriate location or position of signs and hand placement and inappropriate facial expressions (non-manual features [NMFs]) to communicate vocabulary. The teacher's inability to use SASL affected the teaching and learning and the Deaf learners were unable to participate effectively. Since no proper signing was used, communication was virtually impossible. The teacher had no proper knowledge of the importance of manner, position or path of motion.

Communication Breakdown

Learner C said that that they failed to understand the teachers, because of the type of language that was used in the class which made them lose concentration and became bored.

> Learner F: *Sometimes I fail to understand the teacher because of the language she uses in class. If a teacher does not know SASL we cannot understand the lesson. I end up losing concentration and become bored. Most of the teachers are not trained to teach in sign language. Starting to teach them to sign is wasting our time. This causes great confusion in the process of our learning. The communication breakdown in class affects us to underperform academically, which results in us being moved to pre-vocational skills.*
>
> Learner J: *Some teachers come to school without SASL and interpreters are not equipped to teach. The message we sometimes receive is not exactly what the teacher meant.*

Akach (2010) states that Deaf learners are visually orientated people, i.e. they learn by seeing. After observing the English lesson in Grade 8, we realised that resources were insufficient. SASL is a practical language; it has never been written. A lack of resources creates a serious barrier for the teacher as the manager of a classroom, and learners suffer the consequences. Deaf classrooms must have pictures as the learners learn by seeing. The pictures should display the movement of the palm and fingers, position of signs and the appropriate facial expressions as displayed by a teacher in the picture. Learners should be taught that finger-spelling on its own is not called sign language since sign language embraces all other aspects of gesturing and knowing the symbols for words.

Sign Language as Medium of Instruction

The South African Department of Basic Education (DBE) lags behind with regard to sign language. There are not enough people available who are knowledgeable on signing to be hired as sign language specialists. This causes a deficit in the teaching system. The school community cannot align themselves with the cultural norms and values of SASL due to a lack of trained specialists who know SASL and know how to teach it to learners before they embark on learning content knowledge. The problem of lacking knowledge on SASL leads to the inability of the DBE to support the teachers and to facilitate learning in schools for the Deaf. It seems as if the DBE does not understand the needs of Deaf learners and why they should hire teachers who are fluent in signing, which contributes to the neglect of Deaf teaching. If the teacher, as manager of the classroom, is not fluent in signing, it remains a daunting task to teach Deaf learners.

It is incorrect to assume that Deaf children are unintelligent or less important. This tendency to view Deaf children as less important leads to a lack of interest in developing an effective schooling system. Furthermore, neglecting education of learners with hearing loss may be attributed to an insincere attitude, ignorance, professional protectionism towards segregated education and antagonism towards Deaf education (Khan, 2013; Kochung, 2011).

Teacher A said that some teachers taught Deaf learners without knowing sign language. This statement was supported by Learners B, E and H. They added that teachers used their own signs that confused the Deaf learners, and that this lead to a serious breakdown in communication.

Teacher B said: "*Ninety percent of learners are from hearing families that know nothing about deafness or sign language, and these learners find it difficult to sign fluently*." Learners A, B, G, H and I supported this statement by saying that some of them were from hearing families where SASL was not used.

Teacher C reported as follows: "*The misunderstanding with regard to SASL stems from both the teachers and the learners, which leads to learners dropping out and educators losing interest in their work*." This statement was supported by Learners C, F and J. Learner C said: "*Teachers that do not know SASL increase the number of Deaf learners who do not progress. Communication is impossible without a common way of signing*."

Learner F said: "*If we do not understand the teacher, we fail the subject. The teachers do not reach learners; learners become frustrated and drop out. When the teacher does not know SASL, learners are not stimulated*."

Learner J said the following:

> *If we do not understand the teacher, we fail the subject. The teachers do not reach the learners; learners become frustrated and fail. The teachers are incompetent, because they fail to teach us to understand because they cannot sign correctly. We remain uninformed and bored.*

The Effect of Sign Language in Teaching and Learning

Learner A commented as follows:

> *When teaching and learning take place, knowledge of SASL is needed. You find that most of the teachers come to teach without knowing SASL. It is very difficult and stressful for us (learners) to understand what the teachers are trying to teach, because they do not have interpreters who can communicate what they are teaching. It is the only language we understand, and if an educator does not know how to sign, we cannot learn anything.*

Learner B said:

> *SASL is the only language we use for communication. Sometimes teaching and learning does not take place because we have to teach the educator SASL. Some of us come to school without SASL and if both teacher and learner do not know SASL, it is very difficult to learn.*

Learner E said:

> *The teacher does not know the use of a single hand to sign, the place where the sign should be positioned, and the way fingers need to be used. Teachers also do not know the Deaf alphabet and the correct signs for each letter. These letters are also sometimes used to clarify when using sign language, e.g. when indicating a province such as the Western Cape. I also found that the teacher does not understand the importance of using eyebrows or the proper syntax of sign language, e.g. the wh-questions need the pronouns at the end of the sentence. I learnt a few signs from another Deaf adult. The object moves to the first position. For yes or no questions the eyebrows need to be raised and such knowledge is just lacking.*

According to Akach et al. (2009), the language used in the teaching and learning of Deaf children makes a serious impact. Some Deaf are totally different in that they sometimes reach school-going age without knowing any official language. Another aspect is that when parents realise that the children are Deaf, they quickly take them to a special school without consulting a professional person to guide them.

The majority of teachers come into the system without knowing SASL. It is unimaginable to think that a teacher can teach without any knowledge of the language of instruction. Hardin et al. (2014) concur, saying that learning is the process of bringing skills, values, emotions and cognition together. The characteristics of learners and teachers will affect the learners' ability to take part in the activities in the classroom. When the teacher or learner does not understand the language being used for teaching and learning, communication breakdown takes place.

Culture of the Deaf

Teacher D, said the following:

> *Some teachers are not familiar with the culture of the Deaf. There is also a specific sign to indicate culture and each culture has its own unique sign that distinguishes it from others. There is also a different sign to indicate race. Not all teachers are familiar with these signs as there is nobody to teach them. Culture is such a sensitive issue and needs to be treated with extra attention and careful signing. We as teachers are not so informed about the position of the signs.*

Teacher F stated as follows: "*Some parents are not aware that their children are Deaf until the child reaches the stage where he or she is supposed to start talking*." This has a great impact on the child's language development, and the child grows up without knowing any language. The child might even be perceived to be unintelligent.

As far as SASL as second language is concerned, it was reported that although children vary with regard to the exact time at which they produce their first word or sentence, there is a remarkable similarity in terms of the developmental stages they go through. Deaf children, however, do not go through these stages. Sounds and symbols are the most basic characteristics of language and are the manifestation of language as a physical system. People use sound when they speak, but for the Deaf it is completely different. They use hand signals for sign language. Deaf people do not have the elements of language, namely the phonological, morphological, syntactic discourse and pragmatic elements (Antia & Kreimeyer, 2003).

Hearing people use sound to spell correctly. Deaf people, however, do not develop speech, and have a limited number of sounds which they are able to produce (Ohajunwa & McKenzie, 2013). SASL is still under development, and people sign according to the areas in which they live. If you go to a certain area, you need to adapt to the signing structure used in that area.

The theory underpinning this study is constructivism. It is a learning theory that explains how people might learn or acquire knowledge. It, therefore, has a direct application to education. This theory suggests that humans construct knowledge and meaning from their experiences with the help of a caregiver or a more knowledgeable peer. This also contributes towards the shaping of behaviour, as well as cognitive and contractive development of human beings. According to learning theories and Piaget's theory of intellectual development (Eggen & Kauchak, 2010), teachers cannot manage classes if they suffer from a language barrier, which also affects the learners' performance.

Language acquisition is a natural process that occurs without effort for most hearing children (Owens, 2010). Most hearing learners begin school with good language skills and a strong background knowledge of spoken language (Federal Interagency Forum on Child and Family Statistics, 2009). Deaf learners, on the other hand, are completely different, except in cases where they are born to Deaf parents. There is no way that a person can start signing fluently or without experiencing difficulties when using the language as a second lan-

guage for the first time at the age of 10, which causes Deaf learners a great deal of confusion.

Limitations of the Study

Due to the small sample used in the study, the results may not be adequate to be generalised beyond the specific population from which the sample was taken. In addition, the literature on the effects of sign language on Deaf learners may be limited.

Summary and Conclusion

We found that there was a gap regarding SASL acquisition that needs be addressed through the involvement of parents, teachers and the DBE. As soon as the parents become aware of their children's Deafness, they must send the children to a school for the Deaf where they will be able to acquire sign language by engaging with specialists in the language. This will help the children to develop some skills related to sign language and the norms and standards of the Deaf culture. Teachers who do not have the required skills in SASL enter the system lacking crucial knowledge causing barriers in the classroom for the Deaf, which lead to teaching and learning being negatively affected. Deaf learners who attend school without having any language find it very difficult to learn SASL while learning other subjects.

For some Deaf learners the absence of sign language is not the only issue. Additional disabilities, such as autism spectrum disorders, visual impairment, epilepsy, et cetera, also impair their education. As soon as parents realise that their children are Deaf, they must be willing to learn sign language, which will, in turn, help their children to learn sign language at an early age. The DBE must understand the need for SASL at schools for the Deaf in terms of the provision of resources offered and the staff's competency with regard to sign language.

Authors' Contributions

WP conducted the study in accordance with the requirements for the MEd degree. JR and MP provided the concept for reporting on the dissertation in a journal article. All authors reviewed the final document.

Notes

i. The article is based on the master's dissertation of Winnie Poelane Ngobeni.

ii. Published under a Creative Commons Attribution Licence.

iii. DATES: Received: 5 July 2018; Revised: 26 July 2019; Accepted: 31 August 2019; Published: 31 May 2020.

References

Akach P, Demey E, Matabane E, Van Herreweghe M & Vermeerbergen M 2009. What is South African sign language? What is the South African Deaf community? In B Brock-Utne & I Skattum (eds). *Languages and education in Africa: A comparative and transdisciplinary analysis*. Oxford, England: Symposium Books.

Akach PAO 2010. Application of South African Sign Language (SASL) in a bilingual-bicultural approach in education of the Deaf. PhD thesis. Bloemfontein, South Africa: University of Free State. Available at https://scholar.ufs.ac.za/bitstream/handle/11660/663/AkachPAO.pdf?sequence=1&isAllowed=y. Accessed 30 April 2020.

Antia SD & Kreimeyer KH 2003. Peer interaction of Deaf and hard-of-hearing children. In M Marschark & PE Spencer (eds). *Oxford handbook of Deaf studies, language, and education*. New York, NY: Oxford University Press.

Bank R 2015. *Centre for Language Studies: Radboud University Nijmegen and International Max Planck Research School for Language Sciences*. Nijmegen, The Netherlands: Radboud University Nijmegen and International Max Planck Research School for Language Sciences

Biggs J & Tang C 2007. *Teaching for quality learning at university* (3rd ed). Maidenhead, England: Open University Press.

Block J 1982. Assimilation, accommodation, and the dynamics of personality development. *Child Development*, 53(2):281–295. https://doi.org/10.2307/1128971

Botha P, Smit MH & Oosthuizen IJ 2009. The educator as caring supervisor. In IJ Oosthuizen (ed). *Aspects of education law* (4th ed). Pretoria, South Africa: Van Schaik.

Budelmann BU 2000. Kinociliary mechanoreceptors in the equilibrium receptor organs of cephalopods. In DJ Lim (ed). *Cell and molecular biology of the ear*. New York, NY: Springer. https://doi.org/10.1007/978-1-4615-4223-0

Chataika T 2010. Inclusion of disabled students in higher education in Zimbabwe. In J Lavia & M Moore (eds). *Cross-cultural perspectives on policy and practice: Decolonizing community contexts*. New York, NY: Routledge.

Courtin C 2000. The impact of sign language on the cognitive development of Deaf children: The case of theories of mind. *The Journal of Deaf Studies and Deaf Education*, 5(3):266–276. https://doi.org/10.1093/Deafed/5.3.266

De Vos AS, Strydom H, Fouché CB & Delport CSL 2005. *Research at grass roots: For the social science and human services professions* (3rd ed). Pretoria, South Africa: Van Schaik.

Eggen P & Kauchak D 2010. *Educational psychology: Windows on classrooms* (8th ed). Upper Saddle River, NJ: Pearson.

Federal Interagency Forum on Child and Family Statistics 2009. *America's children: Key national indicators of well-being, 2009*. Washington, DC: Government Printing Office. Available at https://www.childstats.gov/pdf/ac2009/ac_09.pdf. Accessed 27 April 2020.

Garden R 2010. Language, identity, and belonging: Deaf cultural and narrative perspectives. *The Journal of Clinical Ethics*, 21(2):159–162.

Grosjean F 2010. *Bilingual life and reality*. Cambridge, MA: Harvard University Press.

Hardin BJ, Blanchard SB, Kemmery MA, Appenzeller M

& Parker SD 2014. Family-centered practices and American Sign Language (ASL): Challenges and recommendations. *Exceptional Children*, 81(1):107–123. https://doi.org/10.1177/0014402914532229

Khan HS 2013. Foster inclusive education through community development and participation in the present teacher education systems in India. *Global Research Analysis*, 2(3):140–141.

Kochung EJ 2011. Role of higher education in promoting inclusive education: Kenyan perspective. *Journal of Emerging Trends in Educational Research and Policy Studies*, 2(3):144–149.

Landsberg E, Krüger D & Nel N (eds.) 2005. *Addressing barriers to learning: A South African perspective*. Pretoria, South Africa: Van Schaik.

Lavia J & Moore M (eds.) 2010. *Cross-cultural perspectives on policy and practice: Decolonizing community contexts*. New York, NY: Routledge.

Ohajunwa C & McKenzie J (eds.) 2013. *Beyond 'if' to 'how': Disability inclusion in higher education* (Disability Catalyst Africa Series No. 4). Cape Town, South Africa: Disability Innovations Africa, Disability Studies Programme, School of Health and Rehabilitation Sciences, University of Cape Town. Available at https://vula.uct.ac.za/access/content/group/9c29ba04-b1ee-49b9-8c85-9a468b556ce2/Disability%20Catalyst%20Africa%20Series%202014/posters/Disabylity%20Catalyst%20Africa%20Series%204.pdf. Accessed 27 April 2020.

Owens RE Jr 2010. *Language disorders: A functional approach to assessment and intervention* (5th ed). Boston, MA: Pearson.

Piaget J 1981. The theory of Piaget. *Childhood and Learning*, 4(Suppl. 2):13–54.

Quinn G 2010. Schoolization: An account of the origins of regional variation in British Sign Language. *Sign Language Studies*, 10(4):476–501.

Rietveld-Van Wingerden M & Tijsseling C 2010. *Ontplooing door communicatie: Geschiedenis van het onderwijs aan doven en slechthorenden in Nederland* [Development through communication: A history of education for the Deaf and hard-of-hearing in the Netherlands]. Antwerpen, Belgium: Garant.

Ryan RM & Deci EL 2009. Promoting self-determined school engagement: Motivation, learning and well-being. In KR Wentzel & A Wigfield (eds). *Handbook of motivation at school*. New York, NY: Routledge.

Stander M & McIlroy G 2017. Language and culture in the Deaf community: A case study in a South African special school. *Per Linguam: A Journal of Language Learning*, 33(1):83–99. https://doi.org/10.5785/33-1-688

Sternberg RJ & Sternberg K 2012. *Cognitive psychology* (6th ed). Belmont, CA: Wadsworth, Cengage Learning.

Storbeck C & Magongwa L 2006. Teaching about Deaf culture. In DF Moores & DS Martin (eds). *Deaf learners: Developments in curriculum and instruction*. Washington, DC: Gallaudet University Press.

Tamis-LeMonda CS, Kuchirko Y, Luo R, Escobar K & Bornstein MH 2017. Power in methods: Language to infants in structured and naturalistic contexts. *Developmental Science*, 20(6):e12456. https://doi.org/10.1111/desc.12456