

Teaching Language to Children with Hearing Impairment at Early Childhood Education level

Dr. SAMINA ASHRAF

Assistant Professor, Department of Special Education
University of the Punjab, Lahore.
Email: samina.dse@pu.edu.pk

Dr. MUSARRAT JAHAN

Assistant Professor, Department of Special Education
The Islamia University of Bahawalpur.
Email: m.jahan99@yahoo.com

Dr. ZAHID MAJEED

Director External linkages / Assistant Professor AIOU, Islamabad.
Email: Zahid_majeed@aiou.edu.pk

Abstract

The importance of ECE is evident because learning in the early years has a long-lasting impact on the future life of young children with hearing impairment (YCWHI). This paper is an attempt to highlight the status of language teaching to children with hearing impairment in their early years of education at school. The objectives of this study were to explore the methods used for teaching language to the children with hearing impairment at K.G(1&2) level and grade 1 in the schools of Punjab and to investigate the problems of teachers in teaching language skills to the children with hearing impairment at, K. G (1 & 2) and grade one. The targeted population of the study was teachers teaching at the K.G (1 & 2) and level one in the schools of children with hearing impairment at Punjab. A total number of 96 teachers were selected through a random sampling technique from the schools of the 8 divisions of Punjab. The majority of the teachers were Master in special education with 3 to 20 years of job experience. A self-made questionnaire was used as a tool in the study. Content validity was estimated through experts' opinion and reliability (.88) was estimated after piloting. SPSS was used to analyze the data. The major teaching techniques revealed from the data analysis were interactive technique, guided practice, and play method along with total communication. The rare use of hearing aids by the students, the number of students in one class, and less cooperation of parents were major problems highlighted by the teachers. Recommendations were given to the teachers of young children with hearing impairment and their concerned department.

Keywords: Early Childhood Education, Hearing Impairment, Language, Skills.

Introduction

According to the World health organization approximately 466 million people were living with hearing loss in 2018. This figure is likely to rise to 630 million by 2030 and up to 900 million by 2050 (Davis & Hoffman, 2019). Approximately 90% of people with moderate to profound hearing impairment lives in low- and middle-income countries. Children with hearing impairment lack speech and language development due to problems in hearing (Cole & Flexer, 2019). Variations in auditory factors, certain environmental and personal factors are associated with the language development of young children with hearing impairment. Variations in auditory factors include the age of onset, type/degree of hearing loss, and

age of identification and intervention. Environmental factors have vital importance for the language development (Bonvillain, 2020) of young children with hearing impairment. These factors have a crucial impact on hearing-impaired children's early language and communication abilities (Marschark & Knoors, 2012). The language development of children also depends on their speech perception skills (Levine, et al., 2016). Speech perception skills are developed in children with hearing impairment through the use of auditory and visual skills (Werker & Hensch, 2015). Speechreading is used to help hearing-impaired children to perceive speech and acquire spoken language. The studies in neuroscience reflect that to acquire language, lip reading is a natural component of spoken language. For instance, the 8 to 10-month-old baby starts focusing on the mouth of the person who is communicating with her (Hillairet de Boisferon, et al., 2017). On the other hand, the use of auditory-verbal therapy focuses on the child's listening ability and discourages relying on the visual cues to understand the spoken language (Tomelski, 2015; Yeung & Werker, 2015; Nittreour, 2016). The use of cued speech, assistive listening devices daily are helpful strategies for the development of language skills among young children with hearing impairment in the early years of schooling (Mulla, 2011).

This study is an attempt to see the strategies used by the teachers teaching in Kindergarten (K.G.) and at grade one. Understanding the role of teachers in developing the early language skills of children with hearing impairment is quite necessary as the early years of language development of children with hearing impairment are much influenced by the teachers and their pedagogies (Webb & Williams, 2019). The objectives of this study were to explore the methods used for teaching language to the children with hearing impairment at K.G and grade 1 in the schools of Punjab, investigate the problems of teachers in teaching language skills to children with hearing impairment at K.G and grade 1 in the schools of Punjab and to see the difference of strategies used by the teachers possessing different educational qualifications in teaching early language skills to YCWHI.

Literature Review

Hearing impairment is caused due to problems in hearing. It is a general term indicating a disability that differs in severity from mild to severe and profound (Kirk, Gallagher, & Coleman, 2015). Children with hearing impairment face certain problems in their life span due to limitations in listening ability (Diana, 2019). The problem in hearing can be at the time of birth or after birth, with various degrees of hearing loss. The earlier hearing loss occurs in a child's life, the more serious the effects on the child's language development. The loss of hearing affects children in multiple ways, including delays in the development of receptive and expressive language skills (Kennedy, McCann, Campbell, Law, Mullee, Petrou & Stevenson, 2006). It affects primarily the phenomenological awareness, vocabulary, and/ or the word span of children and in understanding alphabetic principles (Miller, Bergeron & Connor, 2008). Children with hearing loss face difficulty in understanding abstract and words with multiple meanings. It further impacts the ability to comprehend sentences thus children often produce short and simple sentences. The problems in language development in the early years of children cause learning problems that result in reduced academic achievement in later years too. These problems, if not addressed or intervened at the early childhood level, often lead to social isolation and poor self-concept among children with hearing impairment.

Importance of early childhood education

The research studies have proven the early years of children a crucial phase of life due to the rapid growth and development of the brain (Rao, Wong, Weekes, Shaeffer & Lee, 2014) and the development of a basic social and emotional aspect of the personality (Porter, 2014). Schooling in the early years of life is known by different names like pre-primary education, early childhood education (ECE), and early education in the literature (Doherty & Hughes, 2009). There are a variety of ways to offer early childhood education, including home-based centers, day-care centers, Montessori and Kindergarten schools, etc. In reality, early education starts informally from the lap of the mother but formally it begins at the age of two in institutional settings (Doherty & Hughes, 2009) at either public or private levels. Many of the medical and

educational researchers have highlighted the immense importance of early childhood education through their research studies and considered it crucial for mental growth, intelligence, personality, and social behavior of the children (Nicholl, 2019; UNICEF, 2019). It is also anticipated that half of the intellectual development is established by the age of four years (Qureshi, Bhutto, & Mahar, 2019).

Thus through focusing our early childhood education programs, we can acquire a more knowledgeable and skilled person. In the future, these persons can build a refined society and will provide competent human capital to the country. Therefore, focusing on the early education of children with hearing impairment yields more profit for the nation than focusing on any other program.

Language development in young children with hearing impairment

The importance of teaching language in the early years of schooling has increased many times in the case of children with hearing impairment. Due to the deficiency in hearing, children with hearing impairment lacks in both spoken and written language as compared to their hearing counterparts (Humphries, Kushalnagar, Mathur, Napoli, Padden, Rathmann, & Smith, 2012). Younger children with hearing impairment need extra facilitation for their language-related skills. The studies have proven that as early toddlers or preschoolers will expose to sound, oral and other modes of communication (Sobreira, Capo, Maria, Santos & Gil, 2015) as their language skills will be developed rapidly. The development of early language skills further facilitates the development of literacy skills of children with hearing impairment at their later age. Literature has established a strong connection between early language development and better literacy development (Paul & Alqraini, 2019). Ultimately it will enable children with hearing impairment to communicate with the hearing world in a better way and become useful members of an inclusive world. In addition to parents, the key role is for teachers who are teaching at the pre-primary level. The role of teachers as facilitators in the language development of young children with hearing impairment is evident in research studied (Justice, Jiang, & Strasser, 2018).

Significance of the study

The study is significant for the teachers of young children with hearing impairment as it will highlight not only the common strategies used for teaching language to YCWHI rather it will also highlight the problems teachers currently are facing while teaching language to YCWHI. The study will suggest some measures to address the teachers' problems too.

Questions of the study

The study was conducted to know,

1. What are the methods and strategies used for teaching language to young children with hearing impairment at K.G, and grade one in the schools of Punjab?
2. Are teachers facing problems in teaching language skills to YCWHI at K.G, and grade one?
3. Is there any difference in strategies used by the teachers possessing different educational qualifications in teaching early language to YCWHI?
4. Is there any difference between the teaching strategies of teachers with different teaching experiences?

Methodology and Procedure of the study

It was a quantitative study, conducted with a self-reported survey method. The population of the study comprised of teachers teaching in the schools of children with hearing impairment at early education level i.e., Kindergarten (K.G.1& 2) and grade one in the schools of 8 divisions of Punjab. A total number of 96 teachers from 33 schools were taken as a sample of the study. From each school, teachers teaching in the

Nursery, K.G, and grade one were selected as a sample of the study through the random sampling technique. A self-made questionnaire based on 5 points (Likert scale) was used as a tool for the study. The questionnaire consisted of three parts; demographics, items related to teaching strategies used for the development of early language skills in young children with hearing impairment, and problems faced by teachers in teaching language skills to these children. Validity is measured through experts in the field of special education, reliability through Cronbach alpha (.88).

The researchers personally visited the schools after seeking permission from the headteachers to visit their schools and collected the data from their teachers. The major portion (70%) of the data collected from the teachers through personal interaction. The researchers personally visited the teachers in the school timings during their free periods and got the questionnaires filled up from them. Whereas a little portion of data (30% questionnaires) was gathered through e-mail and social media. The Researchers took the email addresses of the teachers and emailed them a questionnaire. The response rate of the respondents was 100%.

Analysis

The data were analyzed using descriptive and inferential statistical techniques. Frequency analysis to know the demographics of the respondents was calculated and presented in the following tables.

Table. No.1: Classes of the teachers

Classes	Frequency	Percent	Cumulative Percent
K.G.1	34	35.4	35.4
K.G.2	26	27.1	62.5
One	36	37.5	100.0
Total	96	100.0	

Table No.2: Gender of the respondents

Gender	Frequency	Percent	Cumulative Percent
Female	72	75.0	75.0
Male	24	25.0	100.0
Total	96	100.0	

Table No.3: Educational qualification of the teachers teaching

Education	Frequency	Percent	Cumulative Percent
BS/B.Ed.	33	34.4	34.4
MA	44	45.8	80.2
M. Phil	14	14.6	94.8
any other	5	5.2	100.0
Total	96	100.0	

Table N0.4: Job experience of the teachers

Experience in years	Frequency	Percent	Cumulative Percent
1-5	17	17.5	17.7
6-10	29	29.9	47.9
11-15	36	37.1	85.4
16-20	14	14.4	100.0
	96	99.0	
Total	96	100.0	

Table No. 1, 2, 3, and 4 are showing the analysis performed on the demographics of the respondents of the study. The majority of the teachers belonged to grade one (37.5%) and their gender was female (75%). The qualification of the majority of teachers was M.A in special education (45.8%). The job experience of the majority of teachers (37.1%) was 11-15 years.

To answer the questions of the study both descriptive and inferential statistical analysis was used. The analyzed data are tabulated and presented here to get the findings and conclusion of the study. The Mean and SD of the teachers' responses were calculated to answer the first question of this study seeking the type of teaching strategies used by the teachers for the development of language skills among young children with hearing in their early years of education.

Table N0.4: Types of teaching strategies used for teaching language. N=96

Statements	Mean	Std. Deviation
1.Are you aware of the reason for hearing impairment of your students	1.67	.474
2. Do you know the management of hearing aids?	1.38	1.154
3. I use sign language to teach language to YCWHI*	2.71	1.142
4. I teach the phonics method for teaching language to YCWHI	2.25	.834
5. I use the blackboard for teaching language to YCWHI	3.71	1.628
6. I use the F.M system for teaching language to YCWHI	2.08	1.121
7. Use of hearing aids by students part of teaching them language	2.54	1.589
8.I use total communication to teach language to YCWHI	3.25	1.399
9.I use part to the whole method for teaching language skills to YCWHI	3.33	1.581
10.I use guided practice for teaching written language to YCWHI	3.08	1.419
11. Cued speech is used to teach spoken language to YCWHI	2.67	1.254
12.Demonstration is provided to YCWHI for early language skills	2.46	1.391
13.Grammatical skills are used to teach early language skills	2.83	1.382
14. Children are encouraged to make two-word sentences	2.75	1.515
15. Repetition is used for learning language rules	2.54	1.507
	2.92	1.533
16. Drill method is used for better memorization of language rules.		
17.Short stories in sign language are used for the language development of YCWHI	3.25	1.458
18. Short storybooks are used for the language development of YCWHI.	2.71	1.247
19. Signs to letter correspondence is focused on reading comprehension of YCWHI are encouraged to	2.17	1.185
20.Picture is used with words for vocabulary development of YCWHI	2.71	1.313
21.Sighted words technique is used for teaching language to YCWHI	2.50	1.361
22.Interactive strategies are used to teach early language skills to YCWHI	4.46	.648
23.Play-way method is used to teach early language skills	4.13	.837
24. Children are reinforced on correct performance related to language.	3.54	1.391
25.Positive learning environment is created in class for teaching language to YCWHI	3.29	1.313
26. Every student is encouraged to read in class daily.	2.38	1.292
27. Written tasks are assigned frequently to YCWHI for their language development.	2.46	1.450
28: I use the auditory-verbal and tactical (AVT) method for teaching language.	3.54	1.391
29. Teaching early language skills to YCWHI is a challenging task.	3.23	1.380

*YCWHI (Young children with hearing impairment)

The above table shows that majority of the teachers use the play-way method($x=4.13$), interactive strategies($x=4.46$) blackboard ($x=3.71$), use of total communication ($x=3.25$), the use of guided practice ($x=3.08$), use of short stories in sign language ($x=3.25$) and reinforcement is used for teaching early language skills to young children with hearing impairment more as compared to other strategies mentioned in the table. A great number of teachers considered teaching language to young children with hearing impairment a challenging task($x=3.23$).

Table No. 6: A table showing mean and SD of teachers' responses to problems faced in teaching language to YCWHI.

Statements	Mean	SD
I Face problem in teaching language to YCWHI due to.....		
1. Less use of hearing aids by them.	4.13	.873
2.....Parents lack of cooperation	4.46	.648
3.....More number of students in one class	3.23	1.380
4.....Bilingualism of students	2.46	1.450
5.....Absence of reading culture	2.50	1.361
6.....Excessive use of mobile by them at home	3.23	1.380
7.....Classroom acoustics	2.46	1.450
8.....Lack of resources, e.g., group hearing aids, interactive boards, etc.	3.33	1.581

The above table shows major problems teachers are facing in teaching language skills to children with hearing impairment at early educational levels. Parents lack cooperation($x=4.46$), lack resource in the schools ($X=3.33$) and more number of students in one classroom ($x=3.23$) have been highlighted by the majority of teachers as major barriers in teaching language to children with hearing impairment.

Oneway Analysis of variance (ANOVA) was run to explore differences in the opinions of teachers in the use of teaching strategies based on their job experience. The result is tabulated in the following table.

Table. No.7: Results of ANOVA based on the job experience.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2140.436	3	713.479	2.928	.038
Within Groups	22414.522	92	243.636		
Total	24554.958	95			

The above table shows a significant difference between the opinions of teachers teaching language to children with hearing impairment based on their job span ($F=2.93$ whereas the significance is .038 which is $< .05$).

The one-way ANOVA was run to see the use of teaching strategies by the teachers for teaching early language skills to young children with hearing impairment based on their educational qualifications. The analysis is tabulated and presented in the following table.

Table.No.8:ANOVA calculated based on educational qualification

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4127.041	3	1375.680	6.196	.001
Within Groups	20427.918	92	222.043		
Total	24554.958	95			

The above table shows a significant difference between the teaching strategies used by teachers based on their educational qualification. The value of $F=6.196$ and significance is .001 which is $< .05$.

Discussion

This study explored the use of the play-way method (Khosla, 2020), interactive techniques, guided practices (Yule, 2020), total communication, and use of auditory-verbal and tactile (AVT) methods as major techniques used for teaching language to children with hearing impairment (Hallahan, Pullen, Kauffman, & Badar, 2020). The use of AVT methods has also been highlighted by the respondents in this study, which conforms with the many research studies conducted on hearing impairment (Brennan-Jones, White, Rush, & Law, 2014). The study also found that only less number of teachers used the pictorial method for the development of language skills among children with hearing impairment. The study conducted by Razalli, Thomas, Mamat, and Yusuf (2018) has suggested the use of pictures along with the text as an effective method for reading development in young children with hearing impairment. The use of sign language for teaching language skills is also pointed out by teachers participating in this study. The use of signs for teaching language to hearing-impaired children has also been highlighted by many research studies (Howerton-Fox, Amanda, Falk & Jodi, 2019).

The study has highlighted the lack of availability of technological resources as a problem in teaching early language skills to young children with hearing impairment. However, the study conducted by Mertala (2019) has highlighted the benefits of technology in the early childhood education of children with hearing aids. In particular, the use of hearing aids has proven as a vital device in the language development of children with hearing impairment in their early years (Cupples, Ching, Button, Leigh, Marnane, Whitfield, & Martin, 2018).

Less use of hearing aids by the children with hearing impairment, parents less cooperation with teachers (Calderon, 2000) presence of several students in the classroom are underlined as major problems in teaching language to young children with hearing impairment by the majority of our school teachers (respondents). These problems are also highlighted in various research studies. Recently world health organization (WHO, 2020) has pointed out an 83% gap in hearing aid need and use of hearing-impaired persons. That is only 17% of those who could benefit from hearing aids use them. The problem of the increased student-teacher ratio is more indigenous. Due to the population and less number of schools, the student-teacher ratio is not at an ideal level in the majority of special schools in Punjab.

The results of inferential statistics have shown the difference between the uses of teaching techniques by the teachers on the basis of their job experience. These findings are quite realistic and in line with the research studies conducted by Melnick and Meister (2008) and Podolsky, Kini, and Darling-Hammond (2019). The studies concluded a difference in the teaching of experienced and relatively less experienced or new teachers and relate teachers' experiences with students' success. The difference in teaching based on teachers' educational qualifications is also reported in previous studies (Quigney, 2009).

Conclusion

This study has come up with the results that most teachers who are teaching language skills to young children with hearing impairment putting their sincere efforts into the language development of their students. Though most of them are using traditional methods like total communication, lip-reading, guided practices, drill methods, etc., on a more frequent basis as compared to new and innovative methods. They are facing many challenges too while teaching children with hearing impairment. There is a dire need to train and facilitate teachers to use the latest technology and more practical methods for the language development of children with hearing impairment in their early years of schooling. Through focusing on language development at the early stages of hearing impaired children can facilitate the development of their script literacy in the later years of their education.

Recommendations of the study

The following recommendations are made based on the findings of the study.

1. Teachers of young children with hearing impairment may be provided more latest and technological resources. The role of technology for language development among young children is evident in bundles of researches too.
2. The use of hearing aids should have made part of school policy for better language development of children with hearing impairment in their early years as listening is a basic element in the language development of human beings.
3. Teachers should be encouraged and facilitated for use of interactive and experiential learning strategies while teaching language to hearing impaired children. Using these methods the young children with hearing impairment will be able to learn language skills quickly and efficiently.

Limitations and delimitations of the study

The study was delimited only to the 33 schools of Punjab.

A self-made questionnaire was used to conduct the study. There is a need to generalize the research findings carefully.

The data were collected only from the teachers of children with hearing impairments. The opinions of parents and children would have not been taken in this study.

References

- Bonvillain, N. (2020). *Language, culture, and communication: The meaning of messages*. USA Rowman & Littlefield.
- Brennan-Jones, C. G., White, J., Rush, R. W., & Law, J. (2014). Auditory-verbal therapy for promoting spoken language development in children with permanent hearing impairments. *Cochrane Database of Systematic Reviews*, (3)1,12-16.
- Calderon, R. (2000). Parental involvement in deaf children's education programs as a predictor of a child's language, early reading, and social-emotional development. *Journal of Deaf Studies and Deaf Education*, 5(2), 140-155.
- Cole, E. B., & Flexer, C. (2019). *Children with hearing loss: Developing listening and talking, birth to six*. Plural Publishing.
- Cupples, L., Ching, T. Y., Button, L., Leigh, G., Marnane, V., Whitfield, J., & Martin, L. (2018). Language and speech outcomes of children with hearing loss and additional disabilities: identifying the variables that influence performance at five years of age. *International Journal of Audiology*, 57(sup2), S93-S104.
- Davis, A. C., & Hoffman, H. J. (2019). Hearing loss: rising prevalence and impact. *Bulletin of the World Health Organization*, 97(10), 646-656.
- Diana, B. (2019). Deaf education, the past, present and future. *Senior-honors' Project, 2010*. Available on line on <https://commons.lib.jmu.edu/honors201019/655>.
- Doherty, J., & Hughes, M. (2009). *Child Development: Theory and Practice* 0-11.
- Hallahan, D. P., Pullen, P. C., Kauffman, J. M., & Badar, J. (2020). *Exceptional learners*. In Oxford Research Encyclopedia of Education.
- Hillaiet de Boisferon, A., Tift, A. H., Minar, N. J., & Lewkowicz, D. J. (2017). Selective attention to a talker's mouth in infancy: role of audiovisual temporal synchrony and linguistic experience. *Developmental Science*, 20(3), e12381.
- Howerton-Fox, Amanda & Falk, Jodi. (2019). Deaf Children as 'English Learners': The Psycholinguistic

- Humphries, T., Kushalnagar, P., Mathur, G., Napoli, D. J., Padden, C., Rathmann, C., & Smith, S. R. (2012). Language acquisition for deaf children: Reducing the harms of zero tolerance to the use of alternative approaches. *Harm Reduction Journal*, 9(16). <https://doi.org/10.1186/1477-7517-9-16>.
- Justice, L. M., Jiang, H., & Strasser, K. (2018). The linguistic environment of preschool classrooms: What dimensions support children's language growth? *Early Childhood Research Quarterly*, 42, 79-92.
- Kennedy, C. R., McCann, D. C., Campbell, M. J., Law, C. M., Mullee, M., Petrou, S., & Stevenson, J. (2006). Language ability after early detection of permanent childhood hearing impairment. *New England Journal of Medicine*, 354(20), 2131-2141.
- Khosla, R. (2020). *Unit-24 Furthering language*. Indira Gandhi National Open University, New Delhi.
- Kirk, S. A., Gallagher, J. J., & Coleman, M. R. (2015). *Educating exceptional children* (14th Ed.). Belmont, CA: Cengage.
- Kodiango, William, Syomwene, & Anne. (2016). Challenges faced by the hearing impaired learners in composition writing and in answering comprehension questions during English language lessons. *European Journal of Education Studies*, 2(1), 10.5281/zenodo.166048.
- Levine, D., Strother-Garcia, K., Golinkoff, R. M., & Hirsh-Pasek, K. (2016). Language development in the first year of life: What deaf children might be missing before cochlear implantation? *Otology & Neurotology*, 37(2), e56-e62.
- Marschark, M., & Knoors, H. (2012). Educating deaf children: Language, cognition, and learning. *Deafness & Education International*, 14(3), 136-160.
- Mertala, P. (2019). Teachers' beliefs about technology integration in early childhood education: A meta-ethnographical synthesis of qualitative research. *Computers in Human Behavior*, 101, 334-349.
- Miller, E. M., Bergeron, J. P., & Connor, C. (2008). Emergent literacy skills during early childhood in children with hearing loss: Strengths and weaknesses. *Volta Review*, 108, 91-114.
- Mitter, R., & Putcha, V. (2018). *Strengthening and Supporting the Early Childhood Workforce: Training and Professional Development*. Washington DC: Results for Development.
- Mohay, H. (2000). Language insight: Mothers' strategies for making language visually accessible to deaf children. The deaf child in the family and at school: Essays in Honor of Kathryn P. *Meadow-Orleans*, 151-166.
- Mulla, I. (2011). *Pre-school use of FM amplification technology*. The University of Manchester: United Kingdom.
- Nicholl, P. (2019). For Every Child, the Right to a Childhood. UNICEF.
- Paul, P. V., & Algraini, F. (2019). Conclusion: Perspectives on Language, Literacy, and Deafness. *Education Sciences*, 9(4), 286-292.
- Podolsky, A., Kini, T., & Darling-Hammond, L. (2019). Does teaching experience increase teacher effectiveness? A review of US research. *Journal of Professional Capital and Community*.
- Quigney, T. A. (2009). The status of special education teachers at the secondary level: Effects of the "Highly Qualified Teacher" standard. *American Secondary Education*, 49-61.
- Qureshi, A. J., Bhutto, A., & Mahar, P. R. (2019). Implementation of Free Early Childhood Education and Economic Development: A Case Study of Government Schools in Pakistan. *Journal of Business Strategies*, 13(1), 125.
- Rao, N., Sun, J., Wong, J. M. S., Weekes, B., Ip, P., Shaeffer, S. & Lee, D. (2014). Early childhood development and cognitive development in developing countries: A rigorous literature review. Department for International Development.
- Razalli, A. R., Thomas, R. O., Mamat, N., & Yusuf, N. (2018). Using text with pictures in primary school to improve reading comprehension for hearing impaired students. *Journal of ICSAR*, 2(1), 19-27.
- Ryan, R. M., Fauth, R. C., & Brooks-Gunn, J. (2006). *Childhood Poverty: Implications for School Readiness and Early Childhood Education*. Available on the internet.
- Sobreira, A.C.O, Capo, B. M., Santos, T. S. D., & Gil, D. (2015). Speech and language development in hearing impairment: two- case report. *Revista CEFAC*, 17(1), 308-317. Epub January 00, 2015.<https://dx.doi.org/10.1590/1982-021620152314>
- Turn in Deaf Education. *Education Sciences*. 9. 10.3390/educsci9020133.
- Webb, G., & Williams, C. (2019). Interactions between children and their early childhood educators: The effect of the cultural match on communication. *Australasian Journal of Early Childhood*, 44(1), 48-62.

- Werker, J. F., & Hensch, T. K. (2015). Critical periods in speech perception: new directions. *Annual Review of Psychology*, 66, 173-196.
- World Health Organization Report (2020). Deafness and Hearing Loss. Available online on <https://www.who.int/news-room/fact-sheets/detail/deafness-and-hearing-loss>.
- Yule, G. (2020). *The study of language*. UK: Cambridge University Press.

