Al-Ishlah: Jurnal Pendidikan
Vol.15, 3 (September, 2023), 3287-3294
ISSN: 2087-9490 EISSN: 2597-940X, DOI: 10.35445/alishlah.v15i3.2594

Positive Effects of SIBI Alphabet Cards on Increasing Vocabulary Acquisition in Children with Special Needs Deaf

Fatichatul Istiqomah[1*], Luluk Sri Agus Prasetyoningsih[2], Ari Ambarwati[3], Sri Wahyuni[4]

1. Universitas Islam Malang, Malang, Indonesia; istiqomah.fatichatul@gmail.com
2. Universitas Islam Malang, Malang, Indonesia; luluksap58@unisma.ac.id
3. Universitas Islam Malang, Malang, Indonesia; ariati@unisma.ac.id
4. Universitas Islam Malang, Malang, Indonesia; sriwy@yahoo.ac.id

ARTICLE INFO

Keywords:

Learning Media;
Sibi Alphabet Card;
Vocabulary Acquisition;
Deaf Student.

Article history:

Received 2022-07-31
Revised 2023-04-13
Accepted 2023-06-22

ABSTRACT

Children with Special Needs with hearing impairment have hearing loss, classified as deaf and hard of hearing. Hearing loss in children with special needs is associated with long-term academic and communication difficulties, so it will hinder the learning process and potentially experience obstacles in developing students' thinking or cognitive quality. This study aims to analyze the effect of Indonesian language learning media using the SIBI Alphabet Card on increasing vocabulary acquisition in children with hearing impairment. This research is true experimental research with the randomized three-group pretest-posttest only design. A total of 27 children with hearing impairment, categories slight, moderate, profound, male and female, aged 8-22 years. Subjects were randomly divided into three study groups, namely G_1 (n = 10; Slight Deaf), G_2 (n = 8; Moderate Deaf), G_3 (n = 9; Profound Deaf). The Indonesian-language learning media intervention using the SIBI Alphabet Card was carried out 2x/week for four weeks. Data were collected before and after the intervention using a written test instrument. The data analysis technique used the Paired Samples T-Test test with the Packet for Social Science (SPSS) Statistics Software version 21. Based on the results of the study showed that there was an increase in vocabulary acquisition in the three groups before and after the intervention (p<0.001). In general, concluded that the provision of Indonesian-language learning media using the SIBI Alphabet Card which is carried out two times/week for four weeks is effective in increasing vocabulary acquisition in deaf children with special needs.

Corresponding Author:
Fatichatul Istiqomah
Universitas Islam Malang, Malang, Indonesia; istiqomah.fatichatul@gmail.com

1. INTRODUCTION

The process of learning a child's language cannot be separated from the role of parents who play a role in responding to all conversations expressed by children (Setyawan & Prasetyoningsih, 2021; Haliza et al., 2020). Individuals who can speak must be supported by a good hearing function, this is because language acquisition is formed through the process of imitation and listening (Haliza et al., 2020). After language begins to form, children will try to express themselves through words as the beginning of

expressive language skills (Christine, 2016). If the hearing function is impaired, then the language acquisition process will be disrupted, because this ability develops through hearing. Children whose hearing function experiences obstacles in the process of acquiring children's language, children will experience obstacles in the process of communicating (Haliza et al., 2020).

Communication is the process of delivering thoughts/intentions from the communicator aimed at the communicant including information, opinions, and several other goals that arise in the thoughts of the communicator and the communicant (Rahmah & Kholiq, 2018). The course of communication can be done from simple to complex things, including communication by speaking, gestures, facial expressions, and others (Rahmah & Kholiq, 2018). In essence, communication is the transfer of information from the sender to the recipient with a specific purpose (Rosmiati, 2019). Ease in the process of communicating/speaking must be supported by good hearing (Haliza et al., 2020). Individuals with limited speaking and hearing (deaf and mute) experience limitations in developing the quality of thinking due to the lack of mastery of the language acquired, so the ability to communicate is impaired (Haliza et al., 2020). In language/communication, it must be supported by good hearing, because language is developed from the process of imitating and listening (Christine, 2016). Communication and language disorders will lead to complex problems, such as disturbances in cognitive, emotional, perceptual, social and vocational aspects (Haliza et al., 2020).

Hearing loss can result in deviations in emotional and social development and can have a significant impact on everyone's quality of life (Frajtag & Jelinic, 2017). Hearing impairment which has an impact on communication barriers is also one of the inhibiting factors for education and learning for the deaf (Haliza et al., 2020). However, several ways can be done to explore the potential for vocabulary acquisition in children with special needs for hearing impairment, such as the use of media in learning. According to Jazuli et al. (2017) stated that the use of media in learning has a big impact on improving the quality of learning by delivering material more easily. Learning media helps teachers in explaining lessons, especially for deaf children with special needs who need concrete objects to learn (Mais, 2016).

Currently, according to the World Health Organization (WHO), the world's population suffers from hearing loss which makes verbal communication with others difficult (Galván-Ruiz, et al., 2023). For school-age children, communication is a basic factor in supporting the learning process, and gestures remain an important feature of children's communication at all times (Mahon, 2009). The researchers argue that the growth of visual phonology is also seen in students because the number of masteries of the alphabet and American Sign Language (ASL) hand shapes presented in the form of pictures can increase (Howerton-Fox & Falk, 2019). The use of SIBI or Hand shapes is the basis of the so-called finger alphabet which is used by the deaf to express words that do not have separate signs in sign language (Kapuscinski & Organisciak, 2018). The results by Pontecorvo et al., (2023) prove that the level of vocabulary is positively correlated with the ability to communicate. Its application to learning Indonesian with the SIBI alphabet card is a learning model needed by deaf people in increasing vocabulary for deaf students.

Several research results on the effect of learning media on vocabulary acquisition in children with special needs for hearing impairment have been widely reported. As research conducted by Fathoni & Masitoh (2021) reported that the use of pictorial media, application media, and interactive illustrated media showed positive results and could be used to improve vocabulary mastery in deaf children. Research by Nirwanawati et al. (2015) also reported that using picture word cards improved vocabulary mastery in 4th-grade deaf students at the Sekolah Dasar Luar Biasa (SDLB) Kepanjen Malang. Alfitri et al. (2018) in their research concluded that pictorial word media was effectively used in increasing vocabulary in pronouncing nouns in class for deaf children. Based on this, this study aims to analyze the effect of Indonesian language learning media using the SIBI Alphabet Card on increasing vocabulary acquisition in children with hearing impairment.

The results of research conducted by Jumiatun et al. (2017) reported that the application of flashcard media significantly increased the vocabulary mastery of deaf elementary class I students at SLB Wiyata Dharma 1 Sleman. Likewise, the results of research by Fathoni & Masitoh (2021) reported the use of pictorial media, application educational media, and pictorial interactive media gave positive results in

increasing vocabulary mastery in deaf children with special needs. Alfitri et al. (2018) in their research also concluded that pictorial word media were effectively used in increasing vocabulary in pronouncing nouns in class for deaf children. Vocabulary is a basic thing that must be mastered to communicate well. The more vocabulary is mastered, the better the quality of language and communication to facilitate the process of sending and receiving information. The results showed that the effectiveness of media images has a positive impact in supporting the learning process of children with special needs the deaf. However, there has been no research that applies the Sibi alphabet card media to increase vocabulary in deaf children. Alphabet knowledge is an important component of emergency literacy development and refers to children's knowledge of letter shapes, names, and their corresponding sounds because alphabet knowledge is one of the best predictors of children's reading and spelling skills later in life (Sonia et al., 2022; Piasta & Wagner, 2010; National Early Literacy Panel, 2008; Schatschneider, et al., 2004).

This study aims to determine the effect of the SIBI alphabet card media on increasing vocabulary acquisition in children with special needs who are deaf. In theory, this research will broaden horizons. While pragmatically, it can be used as a scientific reference on the use of SIBI alphabet card learning media in supporting the learning process and being a form of attention to children with special needs of deaf.

2. METHODS

This research is true experimental research with the randomized three-group pretest-posttest only design. A total of 27 children with hearing impairment in the light, moderate, and profound categories, male and female, aged 8-22 years, were randomly divided into three study groups, namely G_1 (n = 10; Slight Deaf), G_2 (n = 8; Moderate Deaf), G_3 (n = 9; Profound Deaf).

The Indonesian-language learning media intervention using the SIBI Alphabet Card was carried out 2x/week for 4 weeks. Vocabulary acquisition data were collected before and after the intervention for 4 weeks. The test instrument used in this study was a written test which was adopted from previous research (Jumiatun et al., 2017). The research instrument is equipped with a list of 30 questions. The questions consist of nouns, which include ants, birds, butterflies, elephants, rabbits, durians, melons, watermelons, rambutans, grapes, horses, worms, snakes, crocodiles, mosquitoes, guava, pineapple, strawberries, mangosteen, papaya, chicken, mouse, cat, cow, goat, orange, apple, salak, mango, banana. The questions are divided into three parts, namely questions number 1-10 matching the picture with the text, questions 11-20 writing or saying the name of the picture correctly, and questions number 21-30 completing the missing sentences (attached). Students are said to be successful in mastering vocabulary if students answer questions correctly through writing or speech.

The data analysis technique used descriptive statistical analysis, normality test with Shapiro-Wilk, and homogeneity test with Levene's test, while the different tests used Paired Samples T-Test, One-way ANOVA with significant level (p<0.05) and continued with Tukey's Honestly Significant Difference test. (HSD) post-hoc test with a significance level (p<0.05). All data are displayed with Mean±SD.

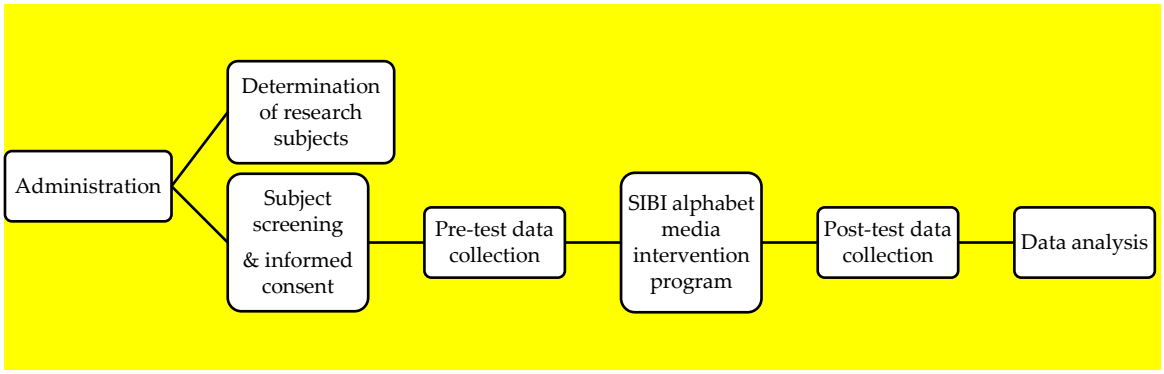

Figure 1. Conceptual Framework

3. FINDINGS AND DISCUSSION

The results of the descriptive analysis of the average vocabulary acquisition of children with special needs with hearing impairment in the slight category (G_1) between before and after the intervention of Indonesian language learning media using the SIBI Alphabet Card for 4 weeks can be seen in Figure 1.

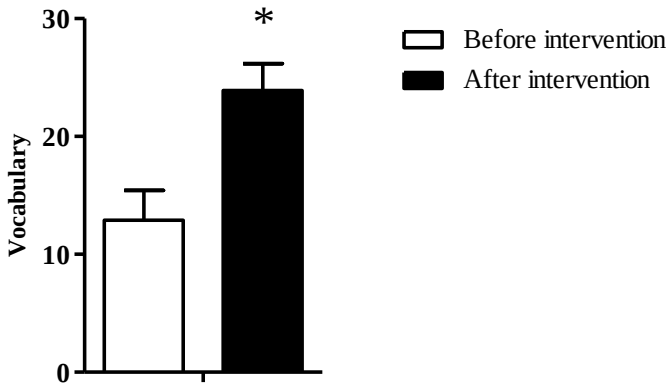

Figure 1. The average vocabulary acquisition of children with special needs with hearing impairment is in the slight category
Description: (*) Indicates significant vs. before intervention (p<0.001)

Based on Figure 1, shows that there is an increase in vocabulary acquisition in the group with slight deaf children with disabilities (G_1) between before and after the intervention. The results of the Paired Samples t-Test show that there is a significant increase in vocabulary acquisition between before and after the intervention in G_1 (p<0.001). The results of statistical analysis of the average vocabulary acquisition of children with hearing impairment in the medium category (G_2) between before and after the intervention are shown in Figure 2.

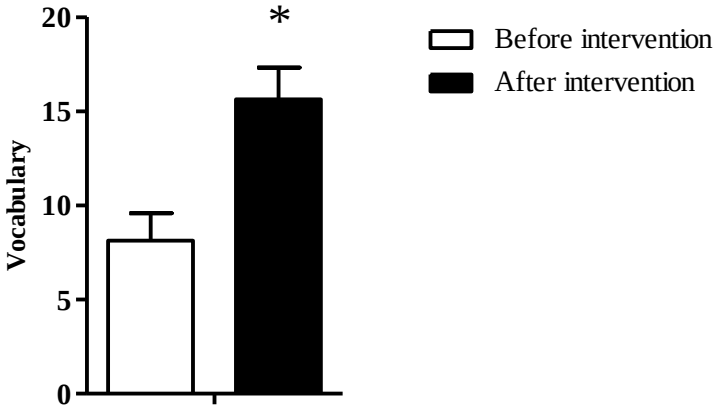

Figure 2. The average vocabulary mastery of deaf children is in the medium category
Description: (*) indicates significant with before intervention (p<0.001)

Based on Figure 2, shows that there is an increase in vocabulary acquisition in the medium category (G_2) group of deaf children with special needs between before and after the intervention. The results of the Paired Samples t-Test show that there is a significant increase in vocabulary acquisition between before and after the intervention in G_2 (p<0.001). The results of statistical analysis of the average vocabulary acquisition of children with hearing impairment in the profound category (G_3) between before and after the intervention are shown in Figure 3.

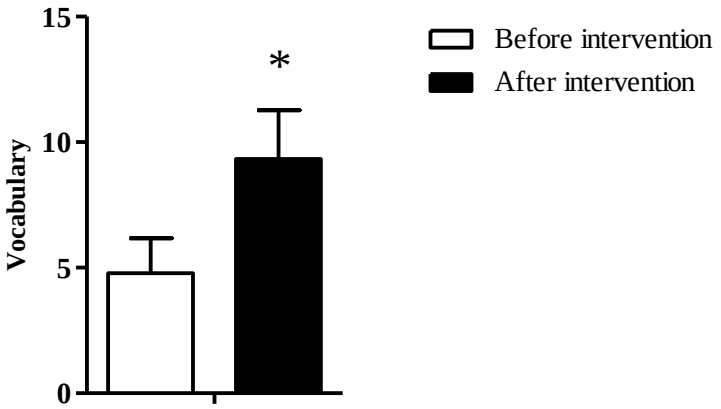

Figure 3. The average vocabulary acquisition of deaf children in the heavy category
Description: (*)Indicates significant with before intervention (p<0.001)

Based on Figure 3, shows that there is an increase in vocabulary acquisition in the group of children with hearing impairment in the profound category (G_3) between before and after the intervention. The results of the Paired Samples t-Test showed that there was a significant increase in vocabulary acquisition between before and after the intervention in G_3 (p<0.001). The results of the comparative analysis of the average vocabulary acquisition after the intervention in the three groups are shown in Figure 4.

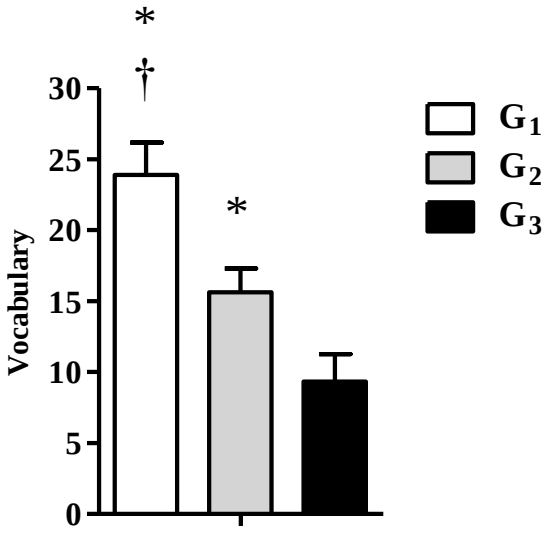

Figure 4. Average vocabulary acquisition in the three groups
Description: (*)Indicates significant vs. profound category of hearing impaired crew members (G_3) (p<0.001). (†) Indicates significant vs. moderate category of deaf crew members (G_2) (p<0.001).

Figure 4, shows that the average increase in vocabulary acquisition after the intervention in the slight category of children with hearing impairment (G_1) was higher than the group of children with hearing impairment in the medium category (G_2) and children with hearing impairment in the profound category (G_3). The results of the One Way-ANOVA test showed that there was a significant increase in vocabulary acquisition after the intervention of Indonesian language learning media using the SIBI alphabet card for 4 weeks between the three groups (p<0.001). The results of Tukey's HSD post-hoc test showed that there was a significant difference in the increase in vocabulary acquisition between G_1 with G_2 (Sig. 0.000 or p<0.001), G_1 with G_3 (Sig. 0.000 or p<0.001), and G_2 with G_3 (Sig. 0.000 or p<0.001).

Based on the results of the study, shows that there was an increase in vocabulary acquisition in the three groups before and after the intervention (Figure 1-3). The results of the Paired Samples t-Test showed that there was a significant increase in vocabulary acquisition before and after the intervention in the three intervention groups. These results are in line with research conducted by Jumiatun et al. (2017) reported that the application of flashcard media significantly increased the vocabulary mastery of deaf students in elementary grade I at SLB Wiyata Dharma 1 Sleman. Likewise, the results of research by Fathoni & Masitoh (2021) which reported the use of pictorial media, application education media, and illustrated interactive media gave positive results in increasing vocabulary mastery in deaf children with special needs. Alfitri et al. (2018) in their research also concluded that pictorial word media was effectively used in increasing vocabulary in pronouncing nouns in class for deaf children. Vocabulary is a basic thing that must be mastered to communicate well. The more vocabulary mastered, the better the quality of language and communication so that it can facilitate the process of delivering and receiving information.

Communication is the process of conveying the thoughts/intentions of the communicator aimed at the communicant which includes information, opinions, and several other goals that arise in the thoughts of the communicator and the communicant (Rahmah & Kholiq, 2018). The communication process can be done from simple to complex things, including communication by speaking, gestures, facial expressions, and others (Rahmah & Kholiq, 2018). Ease in the process of communicating/speaking must be supported by mastery of vocabulary and good hearing (Haliza et al., 2020). A person with limited speaking and hearing (deaf & mute) experiences limitations in developing the quality of thinking due to the lack of knowledge of the language acquired, so that the ability to communicate is impaired. Communication and language disorders will lead to complex problems, such as disturbances in cognitive, emotional, perceptual, social and vocational aspects (Haliza et al., 2020).

Hearing loss in children is a significant public health problem, associated with long-term academic and communication difficulties (Rajendran & Roy, 2011). Children with hearing impairment often experience obstacles in their hearing ability, either in the form of a lack of hearing ability or not being able to hear at all. These barriers can be caused by the malfunctioning of part or all of their hearing devices which results in children being young or even unable to hear sounds in the surrounding environment (Fathoni & Masitoh, 2021), so that children with hearing impairment often have difficulty in undergoing the learning process. Barriers experienced during the learning process have the potential to hinder the development of students' thinking or cognitive qualities. Deaf students, namely students who need special education services because of hearing dysfunction (Mangunsong et al., 1998).

The process of learning a child's language cannot be separated from the role of parents who will respond to all conversations expressed by children (Haliza et al., 2020). Parental acceptance of children's deafness has proven to be the starting point for the development of children's verbal or gestural communication, as well as cognitive, motor, and emotional development (Nasralla et al., 2014). The role of parents in improving children's language development includes (1) introducing good and correct greetings when communicating in the family, (2) practising the pronunciation of short or simple sentences when children receive them; asking, asking other people, (3) inviting children to know the objects around them, (4) inviting children to talk, (5) reading stories or storytelling, (6) applying democratic parenting patterns (Anggraini, 2021).

The level of knowledge of a child's vocabulary is not affected by age but is influenced by the level of hearing loss, characteristics, and the child's social environment (Arifuddin et al., 2018). Vocabulary is the starting point for children to be able to speak, without vocabulary children cannot talk about people, places, or things, about actions, relationships, and circumstances (Clark, 1993). Deaf children can acquire language in total communication using a form of communication orally or called oral, with reading, writing, reading speech activities, also equipped with sign forms using simple sentences (Haliza et al., 2020). Vocabulary is one of the important aspects of language skills. Someone who has more vocabulary tends to be clearer in presenting ideas and ideas. This is in line with the statement of Munirah & Hardian (2021) which states that the more vocabulary a person has, the more skilled they

will be in the language. Someone with a minimal vocabulary will experience obstacles in language and speaking skills. Therefore, increasing vocabulary knowledge is very important for communicating, reading, thinking, and learning (Luckner & Cooke, 2010).

4. CONCLUSION

In general, it can be concluded that the provision of Indonesian language learning media using the SIBI Alphabet Card which is carried out 2 times/week for 4 weeks is effective in increasing vocabulary acquisition in deaf children with special needs. Based on the findings in this study, future research is recommended to compare the effect of providing Indonesian language learning media based on the SIBI Alphabet Sign Card, and Alphabet Blocks packaged in the form of images and videos on increasing vocabulary acquisition in children with hearing impairment. Future research is also advised to add other parameters, such as understanding the Indonesian language for the deaf crew by involving more subjects.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Alfitri, R., Iswari, M., & Kasiyati. (2018). Meningkatkan Perbendaharaan Kata melalui Media Kata Bergambar bagi Anak Tunarungu. *Jurnal Pendidikan Kebutuhan Khusus*. 2(1), 40-45. https://doi.org/10.24036/jpkk/vol2-iss1/96.

Anggraeni, L. A., V. Tirtayani, A., & Sujana, W. (2019). Pengaruh Stimulasi Wicara dalam Pembelajaran Terhadap Kemampuan Berbahasa Anak Tunarungu Usia Dini di Tk Tunarungu Sushrusa. *Jurnal Pendidikan Anak Usia Dini Undiksha*. 7(2), 131-139. http://dx.doi.org/10.23887/paud.v7i2.18769.

Arifuddin, A., Ratnawati, I.I., & Prasetya, K.H. (2018). Pemerolehan Kosakata Berdasarkan Kelas Kata Bahasa Indonesia Pada Anak Tunarungu Kelas I Di SDLB B Negeri Balikpapan Tahun Ajaran 2017/2018 (Kajian Psikolinguistik). *BASA TAKA Universitas Balikpapan*, 1(2), 1-10.

Christine, J. (2016). Pemerolehan Bahasa Anak Tunarungu. *Jurnal Penelitian dan Pengembangan Anak Usia Dini*, 3(2), 95–104.

Clark, E. (1993). *The Lexiconin Acquisition*. England: Canbridge University Press.

Fathoni, W.M. & Masitoh, S. (2021). *Penggunaan Media untuk Meningkatkan Penguasaan Kosakata pada Anak Tunarungu (Sebuah Studi Literatur)*. Jurnal Pendidikan Khusus, 16(2), 1–11.

Frajtag, J.B., & Jelinic, J.D. (2017). Communication Problems and Quality of Life People with Hearing Loss. *Global Journal of Otolaryngology*, 10(4), 0070–0078. https://doi.org/10.19080/gjo.2017.10.555790.

Galván-Ruiz, J., Travieso-González, C. M., Pinan-Roescher, A., & Alonso-Hernández, J. B. (2023). Robust Identification System for Spanish Sign Language Based on Three-Dimensional Frame Information. *Sensors (Basel, Switzerland)*, 23(1), 481. https://doi.org/10.3390/s23010481

Haliza, N., Kuntarto, E., & Kusmana, A. (2020). Pemerolehan Bahasa Anak Berkebutuhan Khusus (Tunarungu) Dalam Memahami Bahasa. *Metabasa: Jurnal Bahasa, Sastra, dan Pembelajaran*, 1(2), 89–97. https://doi.org/10.31629/jermal.v1i2.2214.

Howerton-Fox, A., & Falk, J. L. (2019). Deaf Children as 'English Learners': The Psycholinguistic Turn in Deaf Education. *Education Sciences*, 9(2), 133. https://doi.org/10.3390/educsci9020133

Jazuli, M., Azizah, L. F., & Meita, N. M. 2017. Pengembangan Bahan Ajar Elektronik Berbasis Android Sebagai Media Interaktif. *Jurnal Lensa (Lentera Sains): Jurnal Pendidikan IPA*. 7(2), 47–65.

Jumiatun. (2017). *Peningkatan Penguasaan Kosakata Pada Anak Tunarungu Kelas Dasar I (Satu) Menggunakan Media Flashcard Di SLB Wiyata Dharma 1 Sleman*. Skripsi. Yogyakarta: Universitas Negeri Yogyakarta.

Kapuscinski, T., & Organisciak, P. (2018). *Handshape Recognition Using Skeletal Data*. Sensors, 18(8), 2577. https://doi.org/10.3390/s18082577

Luckner, J.L., & Cooke, C. (2010). A summary of the vocabulary research with students who are deaf or hard of hearing. *American annals of the deaf*, 155(1), 38–67. https://doi.org/10.1353/aad.0.0129.

Mahon M. (2009). Interactions between a deaf child for whom English is an additional language and his specialist teacher in the first year at school: combining words and gestures. *Clinical linguistics & phonetics*, 23(8), 611–629. https://doi.org/10.1080/02699200802491140

Mais, A. (2016). *Media Pembelajaran Anak Berkebutuhan Khusus*. Jember: Penerbit Pustaka Abadi.

Mangunsong, F. (1998). *Psikologi dan Pendidikan Anak Luar Biasa*. Jakarta: Lembaga Pengembangan Sarana Pengukuran dan Pendidikan Psikologi (LPSP3) UI.

Munirah & Hardian. (2016). Pengaruh Kemampuan Kosakata dan Struktur Kalimat Terhadap Kemampuan Menulis Paragraf Deskripsi Siswa SMA. *Jurnal Pendidikan Bahasa Dan Sastra*. 16(1), 78–87.

Nasralla, H. R., Goffi Gomez, M. V., Magalhaes, A. T., & Bento, R. F. (2014). Important factors in the cognitive development of children with hearing impairment: case studies of candidates for cochlear implants. *International archives of otorhinolaryngology*, 18(4), 357–361. https://doi.org/10.1055/s-0034-1382095.

National Early Literacy Panel. (2008). *Developing early literacy*. Washington, DC: National Institute for Literacy

Nirwanawati, R., Efendi, M., Kustiawan, U. (2015). The Effect of Using World Card Picture Media toward the Improvement of the Student's Vocabulary Mastery with hearing Impairment. *Jurnal penelitian dan Pengembangan Pendidikan Luar Biasa*, 2(2), 71-76.

Piasta, S. B., & Wagner, R. K. (2010). Developing Early Literacy Skills: A Meta-Analysis of Alphabet Learning and Instruction. *Reading research quarterly*, 45(1), 8–38. https://doi.org/10.1598/RRQ.45.1.2

Pontecorvo, E., Higgins, M., Mora, J., Lieberman, A. M., Pyers, J., & Caselli, N. K. (2023). Learning a Sign Language Does Not Hinder Acquisition of a Spoken Language. *Journal of speech, language, and hearing research : JSLHR*, 1–18. Advance online publication. https://doi.org/10.1044/2022_JSLHR-22-00505

Rahmah, C. R., & Kholiq, A. (2018). An Analysis of Communication Types of Deaf Students With Environment. *Journal of English Language Teaching*, 5(2), 75–85.

Rajendran, V., & Roy, F. G. (2011). An overview of motor skill performance and balance in hearing impaired children. *Italian journal of pediatrics*, 37(33), 1-5. https://doi.org/10.1186/1824-7288-37-33.

Rosmiati. (2019). Pemerolehan Bahasa Indonesia Pada Anak Tunagrahita Pada Tahap Perkembangan Kognitif. *Jurnal Penelitian, Pendidikan, dan Pembelajaran*, 13(1), 8–15.

Schatschneider, C., Fletcher, J. M., Francis, D. J., Carlson, C. D., & Foorman, B. R. (2004). Kindergarten Prediction of Reading Skills: A Longitudinal Comparative Analysis. *Journal of Educational Psychology*, 96(2), 265–282. https://doi.org/10.1037/0022-0663.96.2.265

Setyawan, W., & Prasetyoningsih, L.S.A. (2021). Proses Pemerolehan Bahasa Kedua pada Peserta Didik Sabah Malaysia di SMK Brantas Karangkates. *Diglosia : Jurnal Pendidikan, Kebahasaan, dan Kesusastraan Indonesia*, 5(2), 596–604.

Sonia Q. Cabell, Hope K. Gerde, HyeJin Hwang, Ryan Bowles, Lori Skibbe, Shayne B. Piasta, Laura M. Justice. (2022) Rate of Growth of Preschool-Age Children's Oral Language and Decoding Skills Predicts Beginning Writing Ability. *Early Education and Development*, 33(7), 1198-1221