

Early Detection and Treatment of Speech Delay in Early Childhood (Systematic Review)

Annisa Mulia^{1*}, Zahra Mansoer², Ahmad Syaikh².

¹Early Childhood Teacher Education, PAUD Kuttub Ababil, Indonesia.

²Early Childhood Teacher Education, STKIP Kusuma Negara, Indonesia.

*dinmly9@gmail.com

Abstract

The research investigates factors contributing to speech delay in early childhood, methods for early detection by various community members, and strategies for addressing speech delay through different approaches. Utilizing a qualitative framework and the Systematic Literature Review (SLR) method, the study aims to enhance understanding and inform policy or practice. Data were gathered from 17 journal articles sourced from Google Scholar and PubMed databases, employing documentation techniques that adhered to PRISMA guidelines. Content analysis was performed to extract significant information from the articles. Findings indicate a meticulous article selection process involving the elimination of duplicates, and assessments of titles, abstracts, and full content. While various early detection methods exist, many parents tend to wait for their children to develop independently. Treatment options for speech delay vary based on the child's condition and the provider's expertise. The author recommends that early childhood education stakeholders improve literacy levels among teachers and parents concerning child development, facilitating timely early detection across the community.

Keywords: early childhood, speech delay, systematic literature review

1 INTRODUCTION

Speech and language disorders in children are the most common cause of developmental disorders in early childhood. The factors that cause speech delays are wide and numerous, some of these disorders are mild to severe, some can improve, and some are difficult to improve.

Speech delay is a phenomenon in the world of child development that seems to be increasing day by day. Based on data from the Indonesian Pediatric Association (IDAI), there are 5-8 percent of preschool children who experience speech delay. In fact, specifically in Jakarta, there are 21 percent of children who experience it. Delays in speech and language development in toddlers in Indonesia are increasing day by day. In Indonesia, it is stated that the prevalence of speech delays in children is between 5-10 percent of school children.

The term delayed speech is usually used by child development doctors, while neurologists call it developmental dysphasia. If the neurological examination does not reveal any defects in the brain, then this group of children who are late in speaking have a problem with growth and development, not because of a disability or pathology. Therefore, the treatment given to him is a form of intervention to stimulate speech and language development until he reaches the maximum level of speech and language development.

A child can be said to have a speech delay if they have not achieved developmental tasks so that they have crossed the developmental boundaries commonly called red flags. The red flags in general are when the baby does not turn his head when called

by his name and the baby does not babble, age 6-12 months the baby does not point with a finger at the age of 12 months and facial expressions are lacking at the age of 12 months, age 12-18 months there are no meaningful words at the age of 16 months, age 18-24 months the child cannot assemble a sentence consisting of at least 2 words that can be understood at the age of 24 months, age 2-3 years the child cannot name and use the objects shown and cannot do 2 simple commands, and age 3-4 years the child cannot tell stories and use long sentences above 4 words.

Speech delays are one of the most common causes of developmental disorders in children. So, the sooner you know the signs of delays in your child's speech development, the easier it will be for your child to carry out other developmental tasks. The environment around the child must also strive to always facilitate the child to continue to grow and develop according to his age.

Based on the background explanation above, researchers found the importance of early detection skills as an effort to prevent speech delay disorders by parents and early childhood education units as well as appropriate treatment for children who are detected to have speech delay disorders.

2 RESEARCH METHODS

The research method used in this research is Systematic Literature Review. Systematic Literature Review is a research method that summarizes the results of primary research to present more comprehensive and balanced facts using meta-analysis and meta synthesis techniques (Atmazaki et.al., 2023; Ramdini et.al., 2024). Meta analysis is one way to synthesize statistical results (quantitative techniques), whereas in this research another method was used to synthesize results, namely narrative techniques (qualitative techniques). This research uses PRISMA (Preferred Reporting Items for Systematic Literature Reviews and Meta-Analysis) guidelines. PRISMA is a minimum set of evidence-based items for reporting in systematic reviews and meta-analyses. PRISMA procedures include identification, screening, eligibility, dan included (McKenzie, J. E. 2021)

Olaf Zawacki-Ritcher explains the systematic literature review procedure in more detail, starting with developing research questions. Then designing a conceptual framework, establishing selection criteria, developing a search strategy, selecting studies using selection criteria, coding studies, assessing the quality of studies, synthesizing results of individual studies to answer research questions (Research Questions), and the final stage is reporting findings or analysis results.

Table 1. *Research Questions*

RQ1	What are the causes of speech delay in early childhood?
RQ2	What are the steps for early detection of speech delay in early childhood?
RQ3	What is the best way to overcome speech delay in early childhood?

Research begins by determining research questions (Research Questions), developing a search strategy, selecting studies based on the criteria that have been determined as follows.

A. Selection of Inclusion and Exclusion Criteria

1. Inclusion Criteria

- a. Journal related to speech delay in early childhood
- b. The journal is published in the period 2019-2024
- c. The research sample in the journal is early childhood aged 1-6 years
- d. The journal can be accessed in full text

2. Exclusion Criteria

- Journals are not related to speech delay in early childhood
- Journal published before 2019
- The research sample was not early childhood, aged 1-6 years
- The journal cannot be accessed in full text (only partial and paid)

B. Article Search Using the PRISMA Protocol

All search results in this research are depicted in the PRISMA diagram. Next, data analysis was carried out by combining all data that met the inclusion criteria and assessing the quality of the study using descriptive techniques to provide an overview according to the problem formulated in the research question. (*Research Question*).

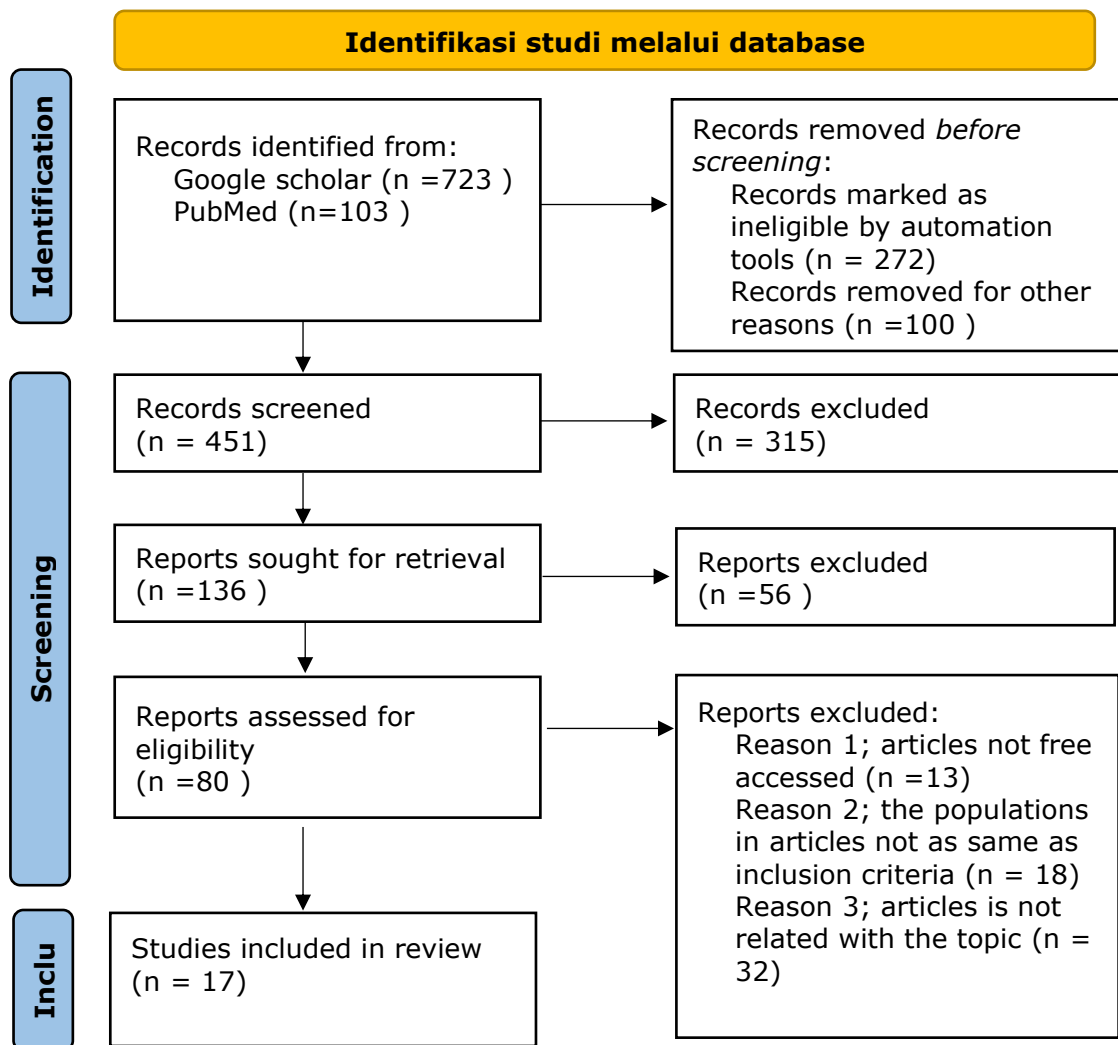


Figure 1. Diagram Alir PRISMA (2020)

3 RESULT AND DISCUSSION

Based on the 17 journals that were the sample for this research, all of them were given alphabetical code names to indicate the variables used in the journal. Code A is for Early Detection and code B is for Treatment, then followed by study sequence codes

sequentially based on number. The stage of coding study names that has been carried out produces 17 study codes with details which can be seen in the attachment.

Table 2. Coding Studies

No	Title	Years	Authors	Study Code
1.	Pendampingan Orangtua Balita Fase Pemerolehan Bahasa Di Posyandu Mawar 6 Kelurahan Noyotaansari Kota Pekalongan Guna Mendukung Kota Layak Anak	2022	Dina Nurmalisa, Afrinar Pramitasari, Ariesma Setyarum, Hanindya Restu Aulia	1A
2.	Peningkatan Peran Orangtua Dalam Deteksi Dini Gangguan Keterlambatan Bicara (<i>Speech Delay</i>) Pada Anak Usia 12-36 Bulan	2023	I Gusti Ayu Satya Laksmi, Niken Ayu Merna Eka Sari, Ni Komang Ayu Restiyanthi, Ni Luh Gede Intan Saraswati, Putu Ayu Parwati	2A
3.	Deteksi Kejadian Speech Delayed Pada Anak Dengan Algoritma Id3	2021	Nita Hestiyana, Dewi Pusparani Sinambela, Nurul Hidayah	3A
4.	Efektivitas Deteksi Dini Gangguan Bahasa Dan Bicara Posyandu Anyelir Dan Posyandu Sekar Asih Kota Bandung	2021	Yosrika	4A
5.	PROMPT intervention for children with severe speech motor delay: a randomized control trial	2020	Aravind K Namasivayam, Anna Huynh, Francesca Granata, Vina Law, Pascal van Lieshout	5A
6.	Deteksi Dini Tumbuh Kembang Di Sekolah Taman Kanak-Kanak Kasang	2022	Mitayani	6A
7.	Guiding Mothers About Early Detection and Addressing Speech Delay and Disorders Among Children in a Rural Setup	2023	Akshaya Narasimman, Sunita Vagha, Akshat K Kashyap	7A
8.	Psikoedukasi Orang Tua Dalam Mengatasi Perkembangan Bahasa Anak (Studi Pada Anak <i>Speech Delay</i> di Desa Rantau Nipis)	2022	Itriyah, Eva Yulita, Mulia Marita Lasutri Tama	8A
9.	Peran Orang Tua Dan Keluarga Dalam Penanganan Anak Dengan	2021	Uyu muawwanah, asep supena	1B

No	Title	Years	Authors	Study Code
	Gangguan Komunikasi (Bicara atau Bahasa)			
10.	Strategi Terapis Wicara Yang Dapat Diterapkan Oleh Orang Tua Penderita Keterlambatan Berbicara (<i>Speech Delay</i>)	2020	Ni made yuniarti, i gusti ayu indah triana juliari	2B
11.	Efektivitas Modifikasi Perilaku Kegiatan Islami Untuk Meningkatkan Keterampilan Komunikasi Anak Dengan Gangguan Terlambat Bicara (<i>Speech Delay</i>)	2022	Nora Adi Anna Harahap	3B
12.	Pengaruh Aplikasi Speech Art Berbasis Android Terhadap Kemampuan Bahasa Pada Anak <i>Speech Delay</i>	2023	Rahmi W Ningsih, Kharida Shaleha, Anti Isnaningsih, Dini Anggia, Niken Farida	4B
13	Strategi Guru Dalam Mengembangkan Kemampuan Berbicara Anak Yang <i>Speech Delayed</i> Di Paud Kasya Ulee Kareng Banda Aceh	2021	Nella Rahim, Yuhatriati, Siti Naila Faiza	5B
14.	Implementasi model SIUUL dalam mengembangkan kemampuan berbicara anak <i>speech delay</i> berbasis media kartu huruf bergambar	2023	Lina marlina, eva susana, ade ahmad ghozali, muna sovia, sri watini	6B
15.	Studi Kasus Speech Delay Pada Anak Usia 4-5 Tahun Di TK Aisyiyah Bustanul Athfal 40 PPS	2024	Diva Loveydiyani Fernanda, Nur Lailin, Ayunda S Ifadah	7B
16	<i>Direct Instruction Improves Word Learning for Children with Developmental Language Disorder</i>	2022	Ron Pomper, Karla K. McGregor, Timothy Arbisi-Kelm, Nichole Eden, and Nancy Ohlmann	8B
17.	Efektivitas Metode Fonik Terhadap Penurunan Tingkat Keterlambatan Bicara Anak Usia 4-5 Tahun Di Tk Islam Terpadu Al Ummah Gresik	2021	Putri, Soffya	9B

After analyzing 8 articles that discuss early detection of speech delay in children and 9 articles that discuss methods for handling speech delay in early childhood, the author summarizes the results of the analysis in the following data table format.

Table 3. Result of Early Detection Article Analysis

Article Title	Author	Respondent Research	Type of Early Detections
Pendampingan Orangtua Balita Fase Pemerolehan Bahasa Di Posyandu Mawar 6 Kelurahan Noyotaansari Kota Pekalongan Guna Mendukung Kota Layak Anak	Dina Nuralisa, Afrinar Pramitasari, Ariesma Setyarum, Hanindya Restu Aulia	50 parents who have toddlers	KPSP in KIA books
Peningkatan Peran Orangtua Dalam Deteksi Dini Gangguan Keterlambatan Bicara (<i>Speech Delay</i>) Pada Anak Usia 12-36 Bulan,	I Gusti Ayu Satya Laksmi, Niken Ayu Merna Eka Sari, Ni Komang Ayu Restiyanthi, Ni Luh Gede Intan Saraswati, Putu Ayu Parwati	Parents who have children aged 12-36 months	Instrument CLAMS
Deteksi Kejadian Speech Delayed Pada Anak Dengan Algoritma Id3	Nita Hestiyana, Dewi Pusparani Sinambela, Nurul Hidayah	100 toddlers who visited the pediatric sub-specialist polyclinic who experienced speech delay	Kuesioner Poliklinik
Efektivitas Deteksi Dini Gangguan Bahasa Dan Bicara Posyandu Anyelir Dan Posyandu Sekar Asih Kota Bandung	Yosrika	Cadres and parents who are directly involved in Early Detection Learning Management for toddlers	KPSP poster outreach
<i>PROMPT Intervention For Children With Severe Speech Motor Delay: A Randomized Control Trial</i>	Aravind K Namasivayam, Anna Huynh, Francesca Granata, Vina Law, Pascal van Lieshout	49 children with indications of speech delay	Providing Stimulus in the form of the PROMPT Technique (mouth muscle and jaw training)
Deteksi Dini Tumbuh Kembang Di Sekolah Taman Kanak-Kanak Kasang	Mitayani dkk	20 children aged 6 years	Screening using the KMEE (Mental Emotional) questionnaire and Expressive and receptive language ability screening in STPPA
<i>Guiding Mothers About Early Detection And Addressing Speech Delay And Disorders Among Children In A Rural Setup</i>	Akshaya Narasimman, Sunita Vagha, Akshat K Kashyap	Mother who lives in the countryside	Group discussion and poster presentation

Article Title	Author	Respondent Research	Type of Early Detections
Psikoedukasi Orang Tua Dalam Mengatasi Perkembangan Bahasa Anak (Studi Pada Anak <i>Speech Delay</i> Di Desa Rantau Nipis)	Itriyah, Eva Yulita, Mulia Marita Lasutri Tama	Parents of toddlers in Rantau Nipis village	Psychoeducation for parents of toddlers

Tabel 4. Results of Article Analysis

Article Title	Authors	Respondent Research	The Factors of Speech Delay	Treatment Type
Peran Orang Tua Dan Keluarga Dalam Penanganan Anak Dengan Gangguan Komunikasi (Bicara atau Bahasa	Uyu muawwanah	Toddlers with speech disorders	Lack of knowledge of parents or families about how to care for, educate, nurture and meet children's needs	Sensory integration therapy
Strategi Terapis Wicara Yang Dapat Diterapkan Oleh Orang Tua Penderita Keterlambatan Berbicara (Speech Delay	Ni made yuniarti, i gusti ayu indah triana juliari	Early childhood children who do speech therapy	Speech delay in this study was caused by the child's external factors, namely environmental conditions that lacked stimulus	Speech therapy
Efektivitas Modifikasi Perilaku Kegiatan Islami Untuk Meningkatkan Keterampilan Komunikasi Anak Dengan Gangguan Terlambat Bicara (Speech Delay	Nora Adi Anna Harahap	Child aged 4 years 2 months	Parents who ignore their children's development and facilitate their children with gadgets without restrictions	Providing token economy, modeling, habituation of Islamic behavior and imitation
Pengaruh Aplikasi Speech Art Berbasis Android Terhadap Kemampuan Bahasa Pada Anak Speech Delay	Rahmi W Ningsih, Kharida Shaleha, Anti Isnaningsih, Dini Anggia, Niken Farida.	12 children with speech delays aged 3-4 years	Lack of stimulation from parents, physiological condition factors in the form of hearing loss, ear function and mouth structure	Use the Speech Art application with adult supervision
Strategi Guru Dalam Mengembangkan Kemampuan Berbicara Anak Yang <i>Speech Delayed</i> Di Paud Kasya Ulee Kareng Banda Aceh	Nella Rahim, Yuhasriati, Siti Naila Faiza	2 boys aged 5 years	Lack of stimulation from parents	ABA therapy (Applied Behavior Analysis) with a loving environmental therapy method

Article Title	Authors	Responden t Research	The Factors of Speech Delay	Treatment Type
Implementasi model SIUUL dalam mengembangkan kemampuan berbicara anak speech delay berbasis media kartu huruf bergambar	Lina marlina, eva susana, ade ahmad ghozali, muna sovia, sri watini	2 children at SPS Taman Nurjati	The existence of physiological factors in children with special needs	SIUUL (Listen-Repeat-Speak) model by Sri Wartini 2022
Studi Kasus Speech Delay Pada Anak Usia 4-5 Tahun Di TK Aisyiyah Bustanul Athfal 40 PPS	Diva Loveydiyani Fernanda, Nur Lailin, Ayunda S Ifadah	Children aged 4-5 years	Giving gadgets from an early age and lack of support and stimulation from parents	Structured stimulation and reduction of gadget use
<i>Direct Instruction Improves Word Learning for Children With Developmental Language Disorder</i>	Ron Pomper, Karla K. McGregor, Timothy Arbisi-Kelm, Nichole Eden, and Nancy Ohlmann	6-year-old child with developme ntal language disorders	There is a nervous breakdown	Handling uses the Direct Instruction method, namely following instructions spontaneously
Efektivitas Metode Fonik Terhadap Penurunan Tingkat Keterlambatan Bicara Anak	Putri, Soffya	Children aged 4-5 years	Congenital disorders such as autism	Phonics method for children who have mild language development disorders.

4 CONCLUSION

Based on the systematic research that has been carried out, the author draws the conclusion that Speech delay can be detected as early as possible even from the time the child is born into the world, the maturity factor can be the first step for parents to monitor the child's growth and development, early detection can be done through the KPSP screening contained in the book KIA 2020, at the Posyandu level and its network can be carried out using SDIDTK screening, at the doctor and health worker level using Denver II and CLAMS screening.

Handling speech delay can be done with various models and treatment methods, this depends on the level of speech delay faced by the child, in general speech delay can be handled using the oral motor therapy method, namely therapy of the muscles around the mouth, modeling therapy, namely using the imitation method and imitation of sounds, learning while playing, namely learning while playing, behavioral therapy focuses on the child's personality so that the child's needs can be better understood during the therapy, language intervention therapy, namely speech therapy with a speech therapist.

The researcher concluded that when this research was conducted, it was found that more researchers were more focused on strategies for handling speech delay in early childhood, whereas in the scope of early detection, which is the main intervention measure in handling speech delay in early childhood, it was still less common. This can be judged from the author's difficulty in finding the latest research results regarding early detection of speech delay.

The author also found that there were similar problems faced by researchers, who revealed that in their research parents still did not have sufficient insight into the child's growth and development process, especially in the language aspect. Likewise, what the author found in other early detection articles shows that posyandu cadres are still focused on physical examinations which include checking weight, height and head circumference so that cadres have not focused routine examinations of children on aspects of cognitive and language development, this is This occurs due to time constraints so that cadres feel they do not have time to carry out early detection on other aspects of children's development.

The other problem is the resident also the parents assume that delays that occur in children are normal, so parents tend to just wait for their child's development to occur by itself without trying to provide adequate stimulation and carry out early detection of delays in early childhood development.

Likewise, what was found in the ability of PAUD teachers to provide stimulus and detect early childhood development, the majority of teachers were found to not have adequate insight into the milestones of early childhood development, so teachers often only rely on information circulating on Google to provide stimulus to children. who have indications of speech delay without finding out the source and credibility of the information obtained so that they do not get information about instruments and assessments about red flags that need to be known in early childhood development.

The author tries to get to the root of the problem that occurred in this research, namely the lack of literacy awareness in various levels, including parents, PAUD teachers and posyandu cadres, so that there is a gap between early detection efforts and handling speech delay in early childhood. By making efforts to build literacy awareness in every level of society, developmental problems in early childhood will become easier to prevent, and easier to handle. However, if society is late in detecting developmental delays, and even tends to wait until the child's condition gets worse, it will be increasingly difficult to deal with developmental problems that occur in early childhood.

This research has shortcomings, one of which is the limited ability of the author to find literature that meets the inclusion criteria so that a lot of literature cannot be discussed, but overall, the literature reviewed represents global problem topics. So, the author has great hopes for future researchers to continue research using the systematic literature review method and also focus on efforts to build public literacy awareness and study

various preventive measures for all early childhood development problems so that the percentage of speech delays in early childhood can be reduced or even decreased.

5 ACKNOWLEDGMENTS

The researcher is very grateful for all the support provided by all parties involved in preparing this thesis research, the author really appreciates every assistance given and encouragement which is the reason the author was able to complete this final assignment on time. May Allah subhanahu wa ta'ala reward every kindness given to the writer with double goodness.

6 REFERENCES

- Atmazaki, Vioreza, N., Nabila, J., & Brillian, M. T. (2023). *Buku Ajar Metode Penelitian*. Pustaka Alur.
- Dini, J. P. A. U. (2022). Intervensi Dini Bahasa dan Bicara Anak Speech Delay. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 6(5), 3992-4002.
- Hadi, S., Tjahjono, H. K., & Palupi, M. (2020). Systematic Review: meta sintesis untuk riset perilaku organisasional. *Yogyakarta: Vivavictory*.
- Marmai, T., Mansoer, Z., & Syaikh, A. (2020). Upaya Meningkatkan Keterampilan Membaca Permulaan melalui Media Kartu Kata. In *Prosiding Seminar Nasional Pendidikan STKIP Kusuma Negara III* (pp. 99-105).
- Mei, C., Reilly, S., Bickerton, M., Mensah, F., Turner, S., Kumaranayagam, D., ... & Morgan, A. T. (2020). Speech in children with cerebral palsy. *Developmental Medicine & Child Neurology*, 62(12), 1374-1382.
- Mohamed Shaffril, H. A., Samsuddin, S. F., & Abu Samah, A. (2021). The ABC of systematic literature review: the basic methodological guidance for beginners. *Quality & Quantity*, 55, 1319-1346.
- Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & McKenzie, J. E. (2021). PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews. *Bmj*, 372.
- Ram dini, H., Nurdin, D., Suryana, A., & Kadarsah, D. (2024). Strengths and Weaknesses in Applying Servant Leadership in Schools in the Age of Independence Learning: A Literature Review. *Jurnal Ilmu Pendidikan (JIP) STKIP Kusuma Negara*, 16(1), 119-131.
- Sujaya, D. J., & Yudiarto, A. (2023). Meta analysis study of interpersonal communication and speech delay in early childhood. *Journal of Family Sciences*, 8(1), 86-108.
- Ulhaq, M. D. Systematic Literature Review: Penggunaan Conceptual Change untuk Mengatasi Miskonsepsi Siswa dalam Pembelajaran Fisika.
- Wahidah, Q. *Penggunaan metode pecs (picture exchange communication system) untuk meningkatkan kemampuan komunikasi anak dengan speech delay di yayasan ceria selaras anugerah pamulang* (Bachelor's thesis, Jakarta: FITK UIN Syarif Hidayatullah Jakarta).
- Yosrika, Y. (2021). Efektivitas Deteksi Dini Gangguan Bahasa Dan Bicara Di Posyandu Anyelir Dan Posyandu Sekar Asih Kota Bandung: Effectiveness of Early Detection of Language and Speech Disorders at the Anyelir and the Sekar Asih Posyandu, Bandung. *Jurnal Teras Kesehatan*, 4(1), 94-100.
- Yuniari, N. M., & Triana Juliari, I. G. A. I. (2020). Strategi Terapis Wicara yang dapat Diterapkan Oleh Orang Tua Penderita Keterlambatan Berbicara (Speech Delay). *Jurnal Ilmiah Pendidikan Dan Pembelajaran*, 4(3), 564-570.
- Zawacki-Richter, O., Kerres, M., Bedenlier, S., Bond, M., & Buntins, K. (2020). *Systematic reviews in educational research: Methodology, perspectives and application* (p. 161). Springer Nature