



Language Development Intervention in Children *Speech Delay*: Systematic Review

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ABSTRACT

This study examines various methods used to improve speech skills in children with speech delay. The methods studied included floor time, discrete trial training (DTT), storytelling, speech therapy, phonics methods, behavior modification, singing, and flash cards. The results of the study show that some of these methods are effective in improving the communication skills of children with speech delay. However, children's responses to these methods can vary, and factors such as the number of study subjects and the intensity of the intervention can also influence the results significantly. Therefore, further research and development is needed to understand deeply and consistently the treatment of speech delay in children

Keywords: *early childhood, speech delay, intervention*

1. Main text

Children in the age range of 0-6 years are considered as golden times or "*golden age*". In this period of child development is considered a very important and valuable time, children have the ability to more easily imitate whatever they see based on their own understanding. Therefore, the age of 0-6 years is considered a crucial period in development According to Heldanita (2018), at this age it is important to provide continuous stimulus to children so that they can stimulate and develop the potential that exists within them from an early age.

Early childhood has the characteristic of always paying attention and discussing everything they see, hear and feel spontaneously. Children at this age tend to naturally ask questions when they see something that catches their attention. Children's curiosity and enthusiasm for what they see, hear and feel will be expressed through words or speaking. The ability to speak in children shows the level of maturity and readiness to learn, because through speaking children can express their desires, interests, feelings and convey their thoughts verbally to the people around them. This is an important way for children to interact and communicate with their environment (Independence, 2021).

However, every child has unique birth conditions, both in terms of physical and mental perfection. Some children are born with limitations both physically and mentally, such as *speech delay*, visually impaired, learning disabled, or deaf. Children with these disorders experience limitations in their development and communication abilities. Children born without abnormalities usually have good communication and development skills. However, for children with disorders, especially children with *speech delay*, their development and communication skills are hampered. This causes communication interactions between children with this disorder and their interlocutors to not go well (Puspita et al, 2019).

According to Hurlock (in dwiningrum, 2021) *speech delay* or *speech delay* in children occurs when the child's speech development is below the level of speech development expected at a certain age, which can be recognized through the correct use of words. In normal development, children gradually learn to use words correctly and understand how to combine words to form more complex sentences as they get older. However, in children with *speech delay*, speech development does not match the level expected at that age. They may have difficulty pronouncing words correctly, organizing words in coherent sentences, or using words appropriately in appropriate contexts.

Meanwhile, language and speaking skills have an important role in human life because they function as a means of communication. By speaking, a person can interact and convey messages to other people so that they can be understood and responded to well. Hurlock (2005) argues that language is a form of communication that uses symbols to convey thoughts and feelings, such as writing, speaking, symbolic language, facial expressions, pantomime, and art.

Findings from research conducted by Wenty (2011) related to factors that influence speech delays (*speech delay*) on the subject of the case studied. The research identified 12 influencing factors related to speech delays, namely multilingualism, good models to imitate, lack of opportunity to practice speaking, lack of motivation to speak, guidance and encouragement, relationships with peers, multiple births, adjustment, classification in sex roles, gender, and family size. Apart from that, the research also found 3 additional factors that play a role in speech delays, namely children's television watching habits, the sibling system, and the knowledge of people around the subject who do not understand the obstacles they are experiencing. It can be concluded that there are many factors that influence a child's speaking ability, both environmental factors and internal factors.

Therefore, it is necessary to carry out appropriate interventions to help improve communication skills in the language development of children with speech delay disorders. This systematic review aims to see what interventions can be done to improve language skills in children with speech disorders (*speech delay*).

2. Method

There are several stages in conducting a systematic review, including planning *review* (identify benefits and develop), do *review* (searching journals, selecting primary journals, assessing journal quality, data extraction and synthesis), and reporting (Kitchenham, 2004). Planning *review* by the author (FA) begins by creating research questions using a systematic review question formulation, namely SPIDER (*Sample, Phenomenon of Interest, Design, Evaluation, Research Type*). The research question in this review is, what interventions can improve language development in children *speech delay*?. Next, the author (FA) determined the search terms and designed the search protocol. The authors derived terms from the research questions and expanded on those terms to create a comprehensive list of search terms. The search words used were, intervention, language development, *speech delay*. These search words are used to search for articles on *database* Google Scholar, Publish or Perish. The next stage is that all journals are checked for duplication by the author (FA) using Rayyan. The author (FA) screens all journals that have passed the duplication check based on the title and abstract. Journals that have passed title and abstract screening are then analyzed based on the full version of the journal. After selecting 237 journals, 10 journals were found that discussed language development interventions in children *speech delay*. The graph of the journal selection flow can be seen in Figure 1. The author determines the limitations of this review, namely: (1) the journal discusses language development interventions for children with disorders. *speech delay*, (2) the subject is a child who experiences it *speech delay*, (3) journals published in English (SCOPUS) and Indonesian (SINTA), and (4) research conducted from 2018 to 2023. Journals that are not included in the criteria are: (1) journals that do not discuss interventions in disorders *speech delay*, (2) written in languages other than English and Indonesian, (3) articles with types *review*, reports, books, *literature review*, and research where the methods are not clearly described.

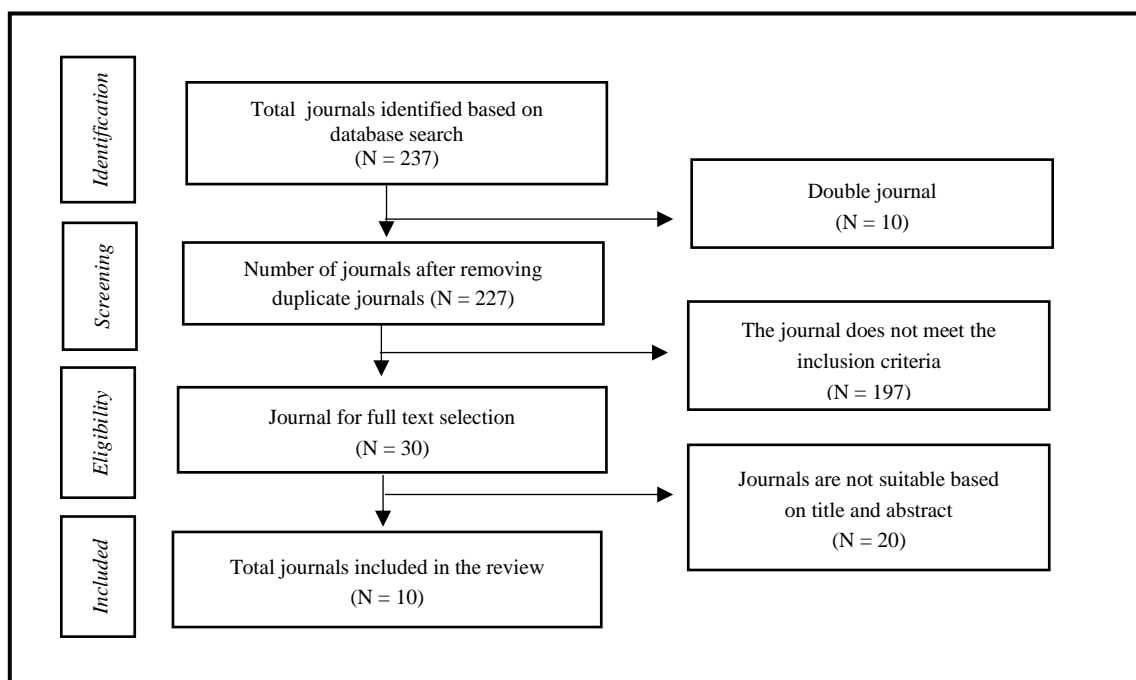


Fig. 1 - PRISMA Chart for Journal Selection Flow

3. Result and Discussion

Communication skills play an important role in every aspect of a child's development, and have long-lasting effects in terms of socialization and learning. Therefore, early intervention is very important so that developmental problems can be identified as quickly as possible and treated immediately. In most situations, early intervention improves speech skills so that children can reach a level of speech development appropriate to their age when they enter the school stage (Dini, 2022).

According to Early Support for Children, Young People, and Families (2011), signs of speech delay in children can be identified by several specific characteristics, namely: Does not respond to sound.

1. Developmental retardation.
2. Has no interest in communicating.

3. Difficulty in understanding the commands given.
4. Saying unusual words or sentences like children in general.
5. Speaks more slowly than children of the same age.
6. His words were difficult for even his own family to understand.
7. Difficulty understanding the words of adults.
8. Difficulty making friends, socializing, and participating in games.
9. Difficulty in learning spelling, languages, even mathematics.

According to the Center for Community Child Health (2006), there are also several characteristics that indicate problems in a child's speech. The first characteristic is seen from the child's eye contact, where children who experience speaking problems tend to have difficulty maintaining eye contact with other people for long periods of time. Second, it can be seen from their movements, where children rarely use symbolic movements such as waving their hands. Apart from that, children also have limitations in using consonants and often produce unclear words or sentences.

Hence the child with disorders *speech delay* This of course requires intervention to improve their language skills. There are several interventions that are often used with children with disorders *speech delay* as stated in the following table;

Table 1. List of Language Development Interventions for Speech Delay Children

No	Writer	Subject	Intervention
1	Maisyarah, Jehan Safitri, Rika Vira Zwager (2019)	3 children who have speech delay disorders	YOU/Floor Time
2	RR. Nabila Ghina Amalia, Jehan Safitri, Rika Vira Zwagery (2020)	2 children who have speech delays	Discrete Trial Training (DTT)
3	Erna Budiarti, Rima Dewi Kartini, Saniyya Putri, Yulia Indrawati, Konny Fransiska Daisiu (2023)	15 PAUD children	Storytelling
4	Ratu Nur Aisyah Winarti, Shafa Fitriyani, Anisa Rizqi Rahmatillah, Lathipah Hasanah (2022)	8 children experienced it <i>speech delay</i>	Speech Therapy
5	Soffya Putri, Nadhirotul Laily, Prianggi Amelasasih (2021)	10 children experienced it <i>speech delay</i>	Phonics
6	Nora Adi Anna Harahap (2022)	1 Boy, aged 4 years 2 months	Behavior modification using token economy techniques, imitation, and modeling
7	Nur Ardianti, Umi Kusyairy, M. Yusuf Tahir (2021)	1 child experienced it <i>speech delay</i>	Singing
8	Atika Permata Sari (2022)	A student aged 5 years 9 months who has expressive language speech delays	Storytelling with puppet stick
9	Epifania M. Ladapase (2022)	1 boy aged 4 years	Flash Card
10	Rif'atus Sa'idatul Muyasiroh, Nurjanah, Muhammad Zaairul Haq (2018)	A child who has a speech delay	Storytelling

Table 1 shows the various interventions used to improve language development in children *speech delay*. There are 2 journals whose intervention is in the form of storytelling (*storytelling*) (Budiarti et al, 2023; Sari, 2022) and there are 8 other research journals that discuss different interventions.

First method *Floor Time*, which is also known as *Developmental Individual Difference Relationship-Based (DIR)*, emphasizes the importance of spontaneity in playing and talking with children. This approach involves following the child, listening carefully, and providing supportive responses to build a warm, trusting relationship. This method involves sharing attention, creating ongoing interactions, and building communication between the adult and the child. The goal is to help children develop social, emotional, and communication skills through child-centered interactions (Greenspan & Wieder, 2006). The results of research conducted by Maysarah et al (2020) are with a significance value of 0.180 and it can be concluded that the *DIR/floor time* unable to significantly improve children's speaking abilities *speech delay*. This could be caused by the fact that there were only 2 subjects. The insignificance in this study does not mean that the *DIR/floor time* does not affect the speaking ability of the affected child *speech delay*. This can be seen from the changes in the results of the pretest and posttest of the 2 subjects, that there was an increase in the posttest scores for both subjects after implementing the *DIR/floor time*.

The two Discrete Trial Training (DTT) methods are methods that originate from the Applied Behavior Analysis (ABA) approach. DTT is one of the main techniques used in the ABA approach, so ABA and DTT are often referred to as one unit. The DTT program is based on the operant conditioning model of behavior, in which certain behaviors are controlled through the use of rewards and punishments as stimuli. This method is used to control behavior and can be applied in various behavior control efforts. Reward and punishment manipulation is used to influence desired responses or reduce undesirable responses (Koerniandaru, 2016). This Discrete Trial Training (DTT) method was first developed by Lovaas (Amalia, 2020).

The results of Amalia's research (2020) are seen based on analysis using tests *Wilcoxon signed-rank*, this research shows that the method *Discrete Trial Training (DTT)* does not significantly improve speech abilities in children with speech delays. This may be due to the limited number of research subjects, only 2 people. However, the research results showed that the average speaking ability score increased after implementing the DTT method. In the pretest, the average score was 12.5, while in the posttest, the average score increased to 32, indicating an increase of 19.5 before and after implementing the DTT method. Although there was an increase, this difference was not statistically significant.

The three methods of telling stories, handling efforts for children aged 4-6 years who experience it *speech delay* This can be done using the storytelling method, this method is considered very effective in providing stimulation in speaking. At first, children are used as active listeners, listen carefully, and then are invited to express what they hear. This method is very popular with children. Storytelling activities can involve the use of props such as hand puppets, small puppets, or puppet stages, but can also be done without props. Both approaches have their respective advantages and disadvantages. Through storytelling activities, children are given the opportunity to express their opinions, freely ask questions, and communicate verbally. Thus, children are accustomed to socializing and interacting with various people, both teachers and their peers (Budiarti et al, 2023).

Budiarti et al (2023) conducted research for 21 days using the storytelling method for children who had speech delays. The results of this storytelling method get positive results in the development of children's abilities in language or communication, because this method provides stimulation for children to practice language abilities and skills. This research is in line with research conducted by Sari (2022) which shows that the method *storytelling use puppet stick* has been proven to be effective in improving expressive language development, especially in terms of the average length of word sequences. This research shows that the method *storytelling with puppet stick* is not only effective in children with typical language development, but also in children who experience delays in expressive language development. Apart from that, there is other research conducted by Haq (2018) using storytelling therapy. This therapy method uses stories or fairy tales as a tool to improve speaking skills and language development in early childhood. The results of research using storytelling therapy methods provide a positive influence in improving children's language skills *speech delay*. Children who take part in storytelling therapy are able to improve communication with their peers and experience changes in language development when communicating with their parents at home.

Fourth method *speech therapy* or speech therapy is a healing method for individuals who experience speech, language and motor disorders. The purpose of *speech therapy* is to train children's receptive and expressive language skills so they can communicate well. This therapy has the function of helping children who experience barriers to communication. The findings in this research are that *speech therapy* have an influence on children who experience it *speech delay* (Winarti et al., 2022).

The five phonics methods, according to Jamaris (2009), the phonics method can also be called the letter pronouncing method. In certain contexts, this method is also known as the spelling method. In essence, this method focuses on the ability to arrange a series of letters into words that have meaning. In the practice of learning to read, this method begins by introducing letters to children separately or one by one, and inviting children to name the sounds of these letters. The results of research conducted by Putri et al (2021) show that there is an effect of providing the phonics method to reduce the level of speech delay in the group with severe speech delays. Meanwhile, the mild speech delay group stated that there was no effect of providing phonic treatment methods to reduce the level of speech delay.

The six behavior modifications are improving behavior using token economic techniques which are designed to increase or decrease behavior, imitation techniques through developing skills through imitation, and modeling techniques by providing examples so that individuals carry out the same behavior. Based on the intervention given to the subject, it can be concluded that providing behavior modification therapy which combines token economy techniques, imitation and modeling is effective in improving the subject's communication abilities. There was a significant change in the subject's ability to communicate. Subjects were able to express their desires with simpler sentences and there was a reduction in errors in vocabulary pronunciation (Harahap, 2022).

The seven singing methods, the singing method is a teaching technique that involves the use of songs and music to facilitate learning and improve language development in children. Singing helps stimulate various brain areas in language processing and memory, which can contribute to improved

language skills. The research results show that the use of singing as a method of language development in children with speech delays has a positive impact and is proven to be effective in mastering vocabulary and language because children acquire new vocabulary (Ardianti et al, 2021).

Eighth method *flash card*, method *flash card* is a learning method that uses cards containing pictures and words as learning media. These cards usually have attractive pictures and striking colors, so that children are more interested and can easily understand the pictures they see. By using *flash card*, children can learn to recognize and memorize words more quickly and effectively. Based on research results, flash card media is effective in improving children's speaking skills *speech delay*. Media *flash card* used to train the child's right brain in remembering pictures and words, so that the child's vocabulary and language skills can be trained and improved (Ladapase, 2022).

4. Conclusion

In this research, various methods have been applied to improve the speaking abilities of children who experience it *speech delay*. These methods include methods *Floor Time*, *Discrete Trial Training* (DTT), telling stories, *speech therapy*, phonics methods, behavior modification, singing, and *flash card*. The research results show that several of these methods are effective in improving the communication skills of children with speech delay. However, it is important to note that each child may respond to methods differently, and significant results may also be influenced by other factors such as the number of study subjects and the intensity of the intervention. Therefore, more research and development of intervention methods is needed to obtain a deeper understanding and more consistent results in the treatment of speech delay in children.

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