



Early intervention to assist children with speech delay: parents must be aware

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ABSTRACT

The Covid-19 pandemic and the rapid increase in children's exposure to digital devices have contributed to a rising prevalence of speech delay in early childhood, primarily due to reduced social interaction and limited language stimulation. Despite growing attention to this issue, existing studies tend to examine causes, indicators, or interventions separately, with limited integration of developmental, environmental, and post-pandemic contexts. This study aims to analyze the phenomenon of speech delay in early childhood by identifying its developmental indicators, contributing risk factors in the post-Covid-19 era, and effective intervention strategies to support early language development. This research employed a qualitative library research method, analyzing 25 scientific sources published between 2010 and 2025, including peer-reviewed journal articles, academic books, and official reports. Data were analyzed using thematic analysis through systematic coding, categorization, and synthesis of key concepts related to speech delay. The findings indicate that speech delay is a multidimensional condition influenced by the interaction of genetic and environmental factors, particularly excessive screen time, limited communicative interaction, and inadequate language stimulation. Early detection of speech delay indicators and timely intervention are essential to prevent long-term communication difficulties. Effective intervention strategies include a combination of professional-based therapies, parent-mediated stimulation, and play-based approaches such as big book reading, storytelling using children's work, and puppet-assisted storytelling. This study contributes theoretically by reinforcing a socio-developmental perspective on speech delay and practically by providing evidence-based insights for parents, educators, and practitioners to support early detection and intervention in early childhood communication development.

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INTRODUCTION

One of the phenomena seen due to the impact of Covid-19 that many people are not aware of is speech delays. Speech delays are now increasing due to a child's lack of interaction with the people around him (Ghaisani & Salam, 2022). Additionally, the current era of technology makes it easy for parents to let their children watch gadgets as long as they are not disturbed to do their activities (Erbay & Tarman, 2022; Patel et al., 2025).

There are so many factors that cause speech delays in early childhood according to Plomin, Robert (2001), namely internal factors including genetics, physical disabilities, neurological malfunctions, prematurity, gender. While external factors include the order of children, physical disability, parental education, economic status, family functioning, and bilingualism. However, the Covid era and gadgets existence have apparently worsened the level of speech delay in early childhood (Freud et al., 2017; Plug et al., 2021; Zavadenko et al., 2015).

It is in line with Mulia, Annisya (2024) that stated some of toddlers in Indonesia experience emergency speech delay disorders. During the Covid-19 pandemic, the rate of speech delays reached 20 percent of the total number of children in Indonesia. This means that 2 out of 10 children have difficulty pronouncing one or two certain vocabulary words at their age. In fact, some of them have difficulty or cannot speak (Aulia et al., 2023; Putri et al., 2024).

Furthermore, dr Herbowo Agung said parents must research the child's problem further, whether his language is not understood or his speech is not there at all or there are social problems such as the child not wanting to look at us when we even call him. Speech and language are two different things. Speech is the ability to form sounds but we cannot understand the meaning. While language is a form of communication expression that contains ideas or meaning in it.

Observing this child's problem is important to get the right diagnosis so that the solution or therapy recommended can be right on target. It is best to handle speech delays in children immediately, otherwise, of the approximately 20% of children who have speech delays, there are 3-5% of children who continue to experience speech delays until they grow up if they are not treated immediately.

The following indicators describe signs of speech delay that can be detected at different stages of a child's development (Allen et al., 1988; McQuiston & Kloczko, 2011; Wankoff, 2011). At the age of 8 months, a child may show early signs of delay if they do not look for the source of sounds coming from the side or rear. By 9 months, concerns may arise when the child does not respond to being called and has not yet started babbling. Between 12 and 18 months, speech delay can be observed if the child is unable to say meaningful words and does not understand simple instructions. At 24 months, a child may be considered delayed if they cannot pronounce intelligible two-word sentences. By the age of 3 years, difficulty in producing sentences of three words or more may indicate ongoing speech delay. Furthermore, at the age of 4 to 5 years, a child who is not yet able to tell stories or express ideas using longer sentences of more than four words may also be experiencing speech delay. With the above information, it is expected that parents can read any speech delay their children show in order to know what next step they have to do and this is called intervention.

Early intervention is crucial for children's speech and communication issues, as it can enhance academic attainment, prevent social and emotional issues, and set them up for future success. Research shows that early intervention can improve overall communication abilities and prevent social and emotional issues (Vermeij et al., 2023; Ward, 1999). Common causes of speech delays in children include cognitive delays, oral motor problems, hearing loss, and autism spectrum disorder. Parents and caregivers should not hesitate to seek help if they notice a speech delay or problem in their child, as taking action now can set up their child for future success (Matthew et al., 2013).

On the other hand, according to Dinasari (2018 cited in Manurung, 2019) stated children speaking has several stages such as (1) Prelinguistic Speech (speaking through sound but without words by the age of 0-11 months), (2) Linguistic Speech (speaking with one word by the age of 12-18 months), (3) Making Words into Phrases (able to make the words into phrases by the age of 2-3 years

old), (4) Using Complete Sentences (able to use complete sentences by the age of 4-6 years old), (5) Using Language Symbolically Reading and Writing (by the age of 6-8 years old).

Despite the growing body of literature discussing speech delay in early childhood, most previous studies have focused primarily on clinical causes, general prevalence rates, or parental awareness in isolation, without sufficiently integrating the unique post-pandemic context and the increasing exposure to digital devices as interacting risk factors. Moreover, limited research has comprehensively examined speech delay indicators across developmental stages while simultaneously emphasizing early intervention strategies that are applicable within family and educational settings, particularly in the Indonesian context. Therefore, this study aims to analyze the phenomenon of speech delay in early childhood by identifying its developmental indicators, contextual risk factors in the post-Covid-19 era, and the importance of timely intervention. The scientific contribution of this research lies in enriching the theoretical understanding of speech delay by synthesizing developmental, environmental, and technological perspectives, while its practical contribution is expected to provide parents, educators, and practitioners with evidence-based insights to support early detection and intervention strategies for children experiencing speech delays.

RESEARCH METHODOLOGY

This study employs a library research design with a qualitative approach, focusing on the systematic analysis of scientific literature related to speech delay in early childhood (Fitria, Tira Nur (2023)). Data were collected from various credible written sources, including peer-reviewed journal articles, academic books, conference proceedings, and official reports relevant to child development and communication disorders. The selection of literature was conducted using specific inclusion criteria, namely: (1) publications discussing speech or language delay in early childhood, (2) studies addressing influencing factors, indicators, or intervention strategies, and (3) sources published within the 2010–2025 period to ensure the relevance and timeliness of the data, particularly in the context of the Covid-19 pandemic and technological developments. A total of 25 scientific sources were reviewed and analyzed in this study.

The data analysis technique applied was thematic analysis, carried out through several systematic stages. First, all selected sources were read thoroughly to gain an overall understanding of the research focus. Second, important concepts and recurring themes related to the causes, developmental indicators, impacts, and intervention strategies for speech delay were identified and coded. Third, these themes were categorized and interpreted to identify patterns, similarities, and differences across studies. Finally, the findings were synthesized to construct a comprehensive conceptual understanding of speech delay in early childhood and to formulate evidence-based recommendations for prevention and intervention. This systematic analytical process ensures the validity, traceability, and transparency of the research methodology.

RESULTS AND DISCUSSIONS

This part discusses the causes of speech delay, how to diagnose the speech delay on children, and what treatment options could be taken to cure the children from their speech delay.

Causes of Speech Delay

A synthesis of previous studies indicates that speech delay in early childhood rarely stems from a single factor, but rather from an interaction between genetic predispositions and environmental influences. While genetic factors such as family history, neurological conditions, and developmental disorders (e.g., autism spectrum disorder) provide a biological foundation for speech difficulties, environmental factors appear to play a more dominant role in determining the severity

and persistence of speech delay. Studies conducted before the Covid-19 pandemic emphasized familial interaction patterns and parental education as key determinants, whereas more recent findings highlight reduced social interaction and excessive screen exposure as significant aggravating factors. This shift suggests that contemporary speech delay should be understood within a broader socio-environmental context, where limited communicative stimulation can exacerbate underlying vulnerabilities. However, a limitation of existing studies is that many examine these factors separately, underscoring the need for an integrative perspective that considers both biological and environmental dimensions simultaneously.

There are many different things that might cause children to have speech difficulties. A typical cause is a delay in the development of the speech-production muscles, which can impact a child's ability to correctly form words and sounds. Cognitive disabilities, hearing loss, or a family history of speech and language difficulties are additional possible explanations. Finding the root cause of a child's speech delay is crucial to developing a successful treatment strategy that meets their individual requirements. Parents can better understand the causes of their child's speech delay and take the appropriate actions to assist their development by collaborating closely with physicians, speech therapists, and other medical specialists. Children's speech delays can also be attributed to environmental factors, such as irregular speech production at home or inadequate exposure to language. Furthermore, some illnesses, such as autism spectrum disease or cleft palate, can affect a child's capacity for effective communication.

Generally there are two factors that cause speech delay on children, they are genetic and environmental factors. In genetic factors, a child's language development can be impacted by some inherited qualities or disorders, genetic factors may potentially contribute to speech delays. Certain genes may be connected to speech and language impairments, according to research, which emphasizes how crucial it is to comprehend a child's genetic composition while attempting to help them communicate.

A child might, for instance, be genetically predisposed to apraxia or stuttering, two types of speech impairments. A child who has difficulties with social communication and has autism spectrum disorder could serve as another example. Parents and therapists can help the child develop their speaking skills by using particular tactics and strategies once they have a better knowledge of this genetic element. Through regular therapy sessions and continued cooperation from all parties, the kid can overcome their speech impediments and improve their ability to communicate effectively.

On the other hand, in environmental factors, therapists and educators can more effectively customize interventions to each child's unique requirements by looking at how environmental factors affect kids with autism spectrum disorder. A child's capacity to participate and learn can be greatly impacted by elements including noise levels, visual distractions, and social interactions in treatment settings. A therapist who works with a child who has autism, for instance, might observe that the youngster finds it difficult to concentrate during therapy sessions because of excessive background noise. The therapist can improve the child's engagement in learning activities and help them develop their communication skills by lowering noise levels and creating a quieter setting. The child's development and general success in therapy can be significantly impacted by this minor change.

Diagnosis and Assessment

The correct diagnosis and assessment of the child's language and communication skills can help determine the most effective strategies for teaching and supporting them. Speech-language pathologists can conduct assessments to evaluate a child's abilities in areas such as vocabulary, grammar, and social communication. These assessments can provide valuable information about the child's strengths and areas for improvement, allowing for individualized intervention plans to be developed. By gaining a better understanding of the child's unique needs and abilities, parents and educators can provide targeted support to help them succeed in their communication development.

This targeted support may include speech therapy, social skills training, and specialized education plans. It is important for parents and educators to work together to create a cohesive approach that addresses the child's specific needs. By collaborating and sharing information, they can ensure that the child receives the necessary support both at home and in the classroom. Additionally, ongoing monitoring and reassessment of the child's communication skills can help track progress and make adjustments as needed. Ultimately, with the right support and interventions in place, children can make significant strides in their communication development and overall social interactions.

It is also important to regularly assess a child's hearing abilities to ensure that they are able to fully participate in communication and learning activities. A hearing test can help identify any potential hearing issues that may be impacting the child's ability to understand and respond to spoken language. By addressing any hearing concerns early on, parents and professionals can help ensure that the child has access to the appropriate interventions and accommodations to support their communication development. Additionally, regular hearing screenings can help track the child's progress and make adjustments to their treatment plan as needed. By taking a proactive approach to monitoring the child's hearing health, parents and professionals can help set the child up for success in their communication and social development. For example, if a child is diagnosed with hearing loss at a young age, they may be fitted with hearing aids or cochlear implants to help improve their ability to hear and understand spoken language. With early intervention and support from speech therapists, the child can learn how to effectively communicate and interact with others in various settings. Regular checkups with audiologists can also ensure that the child's hearing devices are functioning properly and make any necessary adjustments to optimize their communication skills.

Overall, to help the assessment, parents must know the stages of language development for children aged 1-5 Years. However, aspects of language development in children aged 1-5 years are quite complex and the phases are different for each child. Therefore, parents must recognize the stages of early childhood language development so they can monitor their development well.

Several stages of early childhood language development that parents should know to assess their children are as follows:

1. Children aged 1-2 years

Between the ages of 19 and 24 months, children's vocabulary collections have grown dramatically, reaching 50 words or more. A child is capable of producing and comprehending single or simple words. Even if he/she simply uses few words or sentences, he can still communicate clearly. In addition, kids are able to identify the colors of things and people they know or frequently see on a daily basis, as well as bodily parts like the nose, hands, eyes, and ears. Additionally, a child can comprehend the meaning of basic command sentences like clapping and picking up a toy at the language development stage of toddlers ages 1-2.

According to some experts, children's language development will peak between the ages of 19 and 20 months. This is due to the fact that a child can pick up multiple new phrases every day. As a result, at this age, make sure our child is ready to learn simple phrases. Aside from that, a child is now able to communicate through body language, even uttering the final sounds of words, although they still struggle with accurate pronunciation. Children between the ages of one and two are also able to mimic what others are saying. Mama, Papa, and the rest of the family should be careful in what they say.

2. Children aged 2-3 years

The main language development of children aged 2-3 years is the ability to understand simple words of three or more, such as "play", "go", "fall". In fact, he/she can already say simple sentences, such as "Papa is home", "I'm happy".

The stages of a child's language development at the age of 2 years can also be seen from their ability to understand question words, "who," "what," and "where." Even so, your little one cannot answer the questions "why" and "how".

A child also started using the word possess at the age of 2 years, and began to understand the meaning of "mine" and "yours" in his/her third year of age.

At this age, a child is able to remember the names of their parents, family, and even the names of their pets.

3. Children aged 3-4 years

At the age of 3 to 4 years, a child can already communicate and socialize. This is characterized by children's language skills improving and their understanding of vocabulary becoming wider.

A child can already recognize 250 words or more, speak in simple sentences containing 3-4 words, and even remember the names of his/her friends at school.

When parent socializes with friends around her/him, a child will start to ask his / her parent many questions. This is because his/ her curiosity about something is increasing. Therefore, parents must be patient in answering every question that arises so that a child's curiosity does not diminish over time.

4. Children aged 4-5 years

Entering the age of 4 years to 5 years, the stage of children's language development is getting better, seen from the pronunciation and pronunciation which is very clear. Children can already distinguish many colors and shapes of objects.

A small number of children aged 4-5 years can already give an opinion about an incident, ask questions, and even make suggestions.

Child also began to enjoy telling stories and was able to answer questions about what he/she was telling. The sentences he/she makes are more complete, have the right subject, predicate, and information.

However, early childhood language development can vary from one person to another. So, the child's language skills described above only serve as a guide, but are not something that every child must have at this age.

Speech and language evaluation

Evaluating the speech and language of the children with speech delay is a crucial step in identifying the specific areas where a child may need support. A comprehensive evaluation can help determine the underlying factors contributing to a child's communication challenges, such as speech sound disorders, language delays, or social communication difficulties. By conducting a thorough assessment, speech-language pathologists can develop tailored intervention plans that target the child's individual needs and goals. Through regular therapy sessions and targeted activities, children can improve their communication skills and build confidence in their ability to interact with others. In addition to therapy, collaboration with other professionals, such as teachers, psychologists, and occupational therapists, can provide a holistic approach to supporting the child's overall development. By working together as a team, parents, educators, and therapists can create a supportive environment that fosters the child's communication growth and success.

This collaborative approach allows for a comprehensive understanding of the child's strengths and challenges, leading to more effective intervention strategies. By tailoring therapy sessions to address specific areas of need, such as speech articulation or social skills, children can make significant progress in their communication abilities. Furthermore, involving other professionals in the child's treatment plan ensures that all aspects of their development are being addressed in a coordinated manner. This holistic approach not only benefits the child in the short term but also sets them up for long-term success in their communication and social interactions. Overall, by working together as a team, parents, educators, and therapists can provide the best possible support for the child's individual needs and goals.

Treatment Options

Treatment for speech delays can include speech therapy, occupational therapy, behavioral therapy, and home exercises.

- Speech therapy

Parents can engage in parent-implemented home therapy programs for speech and language, which involve training parents on how to support their child's development and provide better language-learning opportunities for children. These programs can include teaching parents child-oriented, interaction-promoting, and language-modeling techniques (Girolametto et al., 2003; Longtin & Gerber, 2008). However, there is limited research on how different service delivery options may affect parents and service providers as well as children with speech and/or language difficulties, making it challenging to guide clinicians adequately in this area (Binns et al., 2022; Hobson et al., 2022).

Speech therapy therapists can provide services in palliative care settings, but they face barriers such as insufficient time to implement new ideas, lack of access to research, and inadequate facilities for implementation. Additional research and specialist training are needed in this area of practice (Aldridge et al., 2016; Donkor et al., 2018).

- Occupational therapy

This is another important aspect of therapy for children with speech and language difficulties. Occupational therapists work with children to improve their fine motor skills, sensory processing, and overall independence in daily activities. Like speech therapists, they face challenges in finding the most effective service delivery options for their clients. More research is needed to determine the most beneficial methods of providing occupational therapy to children with speech and language difficulties. Additionally, specialized training for occupational therapists in this area is crucial to ensure the best outcomes for their young clients.

Occupational therapy is a field that focuses on helping people participate in meaningful activities or occupations to improve their health and well-being. It involves working with individuals of all ages who may have physical, mental, developmental, or emotional challenges. Occupational therapists help clients develop, recover, or maintain daily living and work skills. They also address environmental factors that may affect participation in daily activities. Occupational therapy is guided by various models of practice, such as client-centered, community-based rehabilitation, and independent living models. Theory and evidence-based practice are essential components of occupational therapy. For example, an occupational therapist may work with a child with autism to help improve their social skills and sensory processing abilities through structured activities and interventions. The therapist may also collaborate with teachers and parents to create a supportive environment that promotes the child's independence and success in school and daily activities.

- Behavioral therapy

Behavioral therapy for speech delay involves consistent therapy sessions using play methods to improve speech, social, emotional, motor, and cognitive development in children. External factors like lack of stimulus, parenting, neighborhood, and eating patterns can contribute to speech delays. Parents can also continue therapy at home by providing exercises, consistent rules, varied eating habits, and reduced screen time and using picture media for storytelling. Speech and language delay in children can lead to difficulties in reading, writing, attention, and socialization. Referral to a speech-language pathologist and audiologist is recommended when speech delay is suspected. Speech-language therapy has been shown to be helpful, especially for children with expressive language disorder [1, 2]. For example, a child who is not exposed to a lot of conversation at home due to busy working parents may experience speech delays. Additionally, a child who is constantly surrounded by loud noises in their neighborhood may struggle to hear and mimic speech sounds accurately, leading to delays in language development.

-Home Remedies and Exercises

Some parents may be interested in trying home remedies and exercises to help their child with speech delays. While these methods are not a substitute for professional therapy, they can be used in conjunction with speech-language therapy to support a child's progress. One common exercise is reading aloud to the child regularly, as this can help expose them to a variety of vocabulary and sentence structures. Another helpful exercise is practicing simple tongue and lip exercises to improve muscle strength and coordination for speech production. It is important to consult with a speech-language pathologist before starting any home remedies or exercises to ensure they are appropriate for the child's specific needs.

Parents can train children with speech delay by practicing speech tasks at home, increasing their knowledge of their child's needs, and improving social interaction and connection with their child. This can lead to more enjoyable practice and potentially increase the frequency of home practice. Parent training may help parents feel more comfortable and confident in supporting their child with speech delay (Sugden et al., 2019; Tosh et al., 2017).

- Reading aloud to the child

This is another effective strategy for improving speech and language development. By reading to the child regularly, parents can expose them to a variety of vocabulary and language structures, as well as model proper pronunciation and intonation. Additionally, reading aloud can help children develop a love for books and storytelling, which can further enhance their communication skills. Parents can also incorporate interactive activities, such as asking the child questions about the story or encouraging them to retell it in their own words, to further engage them in the learning process. Overall, reading aloud can be a fun and beneficial way for parents to support their child's speech development.

- Encouraging communication through play

This is another effective way for parents to support their child's speech development. Play is a natural and enjoyable way for children to practice using language in a meaningful context. Parents can engage in activities such as pretend play, where they can encourage their child to use words to describe their actions and communicate with others. By providing opportunities for their child to engage in conversations and express themselves during play, parents can help strengthen their child's language skills. Additionally, playing games that involve following instructions or taking turns can also help improve their child's ability to listen and communicate effectively. For example, parents can encourage their child to describe the steps they are taking while building a block tower or narrate a story while playing with dolls. Listening or singing a song also could be another great way to train the children's speech. This not only helps enhance their child's vocabulary and communication skills but also fosters creativity and imagination.

Based on the reviewed literature, intervention strategies for speech delay can be categorized into three main approaches: professional-based interventions (such as speech and occupational therapy), parent-mediated interventions, and play-based or media-assisted interventions. Professional-based interventions demonstrate strong effectiveness in addressing clinical speech and language impairments, particularly when delivered intensively and early; however, their limitations include accessibility, cost, and dependence on specialist availability. Parent-mediated interventions, including home-based speech stimulation and reading activities, offer high ecological validity and sustainability, yet their effectiveness largely depends on parental consistency and knowledge. Meanwhile, play-based approaches using storytelling, puppets, and big books have been shown to enhance children's motivation and expressive language skills, especially in preschool settings, although their outcomes may vary depending on facilitation quality. This comparison indicates that no single intervention is universally sufficient, and the most effective outcomes are achieved through a combination of structured therapy and naturalistic language stimulation within daily environments.

Apart from playing educational games and listening to songs, there are several ways parents can stimulate children's language skills, namely:

1. Stimulation of Children Aged 1-2 Years

Avoiding using baby language when talking to children can be a way to stimulate the language skills of children aged 1-2 years. So, if a child uses the wrong baby language, parents don't feel the need to correct him/her. Just respond using the right words.

Apart from that, at this age he/she may still rely on his/her body gestures to communicate. When a child has difficulty saying what he/she wants, he/she will point to it. For example, if he/she is very fussy while pointing at the refrigerator, parent can say to the child "You want to eat fruit? Or do you want to drink juice?" while opening the refrigerator.

Let him/her take what he/she wants, then tell the child what he/she is taking, "This is an apple, here, mama, peel it first."

2. Stimulation of Children Aged 2-3 Years

If a child is 2-3 years old and parents want to train his/her language development from an early age, the step parents can take is to invite him/her to read books together. Reading as many stories as possible to child every day has been proven to encourage language development.

This is supported by a study published in the Journal of Literacy Research. The research found that children can have a larger vocabulary when picture books are read to them than when they are just heard.

In another study published in the Journal of Developmental and Behavioral Pediatrics, reading one book every day can expose children to 1.4 million more words than children who were never read to stories as children.

parents can ask a child to choose which book he/she wants to read. Then, invite the child to chat for a moment about the pictures in the book. For example, "Look, Sis! The horse ran very fast. Then, where is the Kancil hiding, huh?" This fun interaction can improve a child's social and language skills and help him/her understand various things in the future.

3. Stimulation of Children Aged 3-4 Years

The development of a 3 year old child in terms of communication means that the child can answer questions starting with who, what and where. So, parents and their children dialogue alternately. So, to improve early childhood language development, encourage children to talk by giving them choices as an initial stage. Make sure the choices parents give are good and useful. For example, "You want to swim or ride a bike?" Provoke your child to give reasons for the choices he/she makes.

4. Stimulation of Children Aged 4-5 Years

To help the stages of language development at an early age run well, the American Academy of Pediatrics recommends that children over the age of 2 years not watch television screens and gadgets for more than 1 hour per day because communication carried out with gadgets is only one way, children only listen without interacting with the screen. In fact, children's language development needs to be trained interactively.

These are the stages of children's language development at an early age and the ways you can stimulate them. The first and best provision to make a child a winner is the right stimulation. Do this with love and patience to continue to stimulate a child's ability to communicate fluently (Ikhsania, 2020).

- Using visual aids and gestures

This treatment can also be beneficial in enhancing a child's understanding and communication skills. By pairing spoken words with actions or pictures, parents can help their child make connections between words and their meanings. This can be particularly helpful for children who are visual learners or who may have difficulty processing auditory information. Additionally, using gestures such as pointing or hand motions can further support a child's comprehension and expression of language. Overall, incorporating a variety of strategies and activities into playtime can greatly benefit a child's language development and communication abilities. For example, a parent can show their child a picture of a ball while saying the word "ball" and then physically demonstrate

bouncing or throwing a ball. This multi-sensory approach can reinforce the concept of what a ball is and how it is used in play. Additionally, using hand gestures like clapping when saying "good job" or pointing to objects can enhance the child's understanding and ability to communicate effectively.

Language skill in the children requires training. Parents are hoped to apply various methods to boost the children's ability of speaking in order that they can get reach their potentials in other aspects. The followings are some methods the parents can apply to train their children's speech for improvement.

1. Bigbook Method

A big book is a story book with special characteristics that is enlarged in both text and pictures to enable joint reading between children and parents or teachers. Another character of this book is that it is full of colorful, interesting pictures, has words that can be repeated, has a plot that is easy to guess, and has a rhythmic text pattern that can be sung.

Furthermore (Çer, 2016), explains the advantages of big books:

1. Big books give children the opportunity to be involved in real situations in a way that is not scary. by reading the big book together in front of the class, children will gain real reading experience without feeling afraid of making mistakes.
2. The big book allows all children to see the same writing when the teacher reads the writing. Its large size allows children to see the writing in the big book they are reading.
3. The use of a big book allows children to work together and give meaning to the writing in it.
4. Big books provide opportunities for children who are slow at reading to recognize writing with the help of teachers and other friends. Apart from that, big books make teachers and children share joy and share activities together.
5. Using a big book will develop children's basic abilities in all aspects of language, namely listening, speaking, reading and writing.
6. Learning with a big book provides social experiences for children, namely in terms of various experiences when children comment on pictures and read big books.
7. Even though the big book is reading material, the teacher can intersperse it with relevant conversations about the content of the story with the children so that the reading topic will develop according to the children's experience and imagination.

2. Story Method Using Children's Works Media

The storytelling method is one method that is often used to improve children's speaking abilities. (Tarakçıoğlu & Tunçarslan, 2014) stated that children aged 3-4 years already like telling stories. If children are involved in storytelling activities, active learning will be created where children are the source of learning.

Storytelling can be done not only with books but also with the child's work so it can be done at any time, not only at school, but also at home. For example, a child builds a work with Lego, an adult can invite the child to tell a story using his Lego work. Similar research has been carried out by Faridawati using classroom action research methods which show an increase in speaking motivation in children.

3. Story Method Using Puppet

According to (As, 2016) storytelling method is an attempt to develop potential abilities children speak through hearing and then speak it back to them. The aim is to train children's conversation skills to convey ideas in oral form.

The activity of speaking by telling stories is an interesting activity because the delivery is accompanied by expressions and intonation that suit the storyline and even the voice can be adapted to the characters in the story. The method is very suitable for stimulating children's speaking abilities

by stimulating their imagination. To help children's imagination, hand puppets can be used when telling stories so that children can analyze the sound of each puppet being played.

As explained by Mujahidah, Nurul (2021), telling stories using puppets is a storytelling technique that uses puppets to convey the content of the story. The choice of telling stories using puppets will depend on the age and experience of the child, usually the dolls consist of father, mother, son, daughter, grandmother, grandfather and other family members can be added, each puppet made shows a character holders of certain roles.

This method has been used by Tambunan, Irayanti (2019), in his writing she found that the results shown by children who learned to tell stories using puppet media were better than just a book. With puppets that can be played in the hand and moved with the fingers, it makes children more interested and easier to imagine. Apart from that, puppet characters are not available as humans characters but also animals which can teach children sounds according to their characters like in the real world.

Theoretical and Practical Implications

The findings of this study contribute theoretically by reinforcing a socio-developmental perspective on speech delay, which emphasizes the dynamic interaction between biological predispositions and environmental stimulation in early childhood. This perspective supports existing developmental language theories that view communication skills as socially constructed rather than solely biologically determined. Practically, the study highlights the importance of early detection and family-centered intervention strategies, particularly in post-pandemic contexts where children's social exposure may be limited. For parents and educators, these findings underscore the need to prioritize interactive communication activities over passive screen exposure. For practitioners, the study provides evidence-based guidance for selecting intervention strategies that are adaptable to home and educational settings. Overall, these implications support the development of more holistic and context-sensitive approaches to preventing and managing speech delay in early childhood.

CONCLUSION

This study has successfully achieved its research objectives by analyzing the phenomenon of speech delay in early childhood through a comprehensive review of relevant literature, particularly in the context of post-Covid-19 conditions and increased exposure to digital technology. The findings indicate that speech delay in children is a multidimensional issue influenced by the interaction of genetic factors (such as neurological conditions and hereditary predispositions) and environmental factors, including limited social interaction, excessive screen time, and insufficient language stimulation at home. The study also confirms that early identification of speech delay indicators across developmental stages is essential for accurate diagnosis and effective intervention. Furthermore, the results highlight that early intervention plays a critical role in preventing the persistence of speech delay into later childhood. Among the intervention strategies reviewed, a combination of professional-based therapies (speech and occupational therapy), parent-mediated home stimulation, and play-based language activities – such as big book reading, storytelling using children's work, and puppet-assisted storytelling – emerged as the most effective approaches when implemented consistently and contextually. Parental involvement was identified as a key factor in enhancing the success of these interventions, as parents serve as the primary agents of language stimulation in children's daily environments. Despite its contributions, this study has several limitations. As a library research study, it relies solely on secondary data from published sources and does not include empirical field data or direct observation of children with speech delay. Consequently, the findings may not fully capture individual variations in intervention outcomes or contextual differences across settings. Therefore, future research is recommended to employ

empirical approaches, such as experimental studies, longitudinal designs, or mixed-method research, to examine the effectiveness of specific intervention models in real-life family or educational contexts. Further studies may also explore the long-term impact of digital media exposure on children's speech development and evaluate culturally adaptive intervention strategies. Overall, this study provides both theoretical and practical contributions by strengthening the understanding of speech delay as a developmental and environmental issue, while offering evidence-based insights for parents, educators, and practitioners to support early detection and intervention. With timely, consistent, and collaborative efforts, children with speech delays can be supported to develop effective communication skills and reach their full developmental potential.

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