Exploring influential factors and strategies for addressing speech delay of a child with autism spectrum disorder (ASD) in English (L2) language acquisition

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Abstract

Children with autism spectrum disorder (ASD) tend to exhibit a unique trajectory in the acquisition of language with some documented research. However, research investigating children with ASD in English (L2) language acquisition is limited, particularly in Indonesian ASD children. This research explores the factors that allowed this unanticipated foreign language acquisition, thereby causing delays in native speech, and investigates strategies that could help overcome the child’s linguistic challenges. This case study research involved a six-year-old Indonesian ASD child experiencing early self-learning of English and speech delay in her native language. The data were garnered through observations, interviews, and field notes before being thematically analyzed. The results show that the internal factor of speech delay is prematurity, and the external influential factors are the high intensity of English language exposure through media, English daily interactions with family members, and the use of different first languages in the social environment. Successful strategies employed to acquire the child’s native language include the habituation of speaking Indonesian, the repetition method, and the implementation of a language teaching model by teachers at school. This study underscores the importance of the social environment to promote language acquisition and the possible interventions to cope with speech delay for ASD children.
Keywords: autism spectrum disorder (ASD); English (L2) language acquisition; language development; second language acquisition (SLA); speech delay

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Introduction

A number of factors influence children’s language acquisition, encompassing both biological factors, including prematurity, birth weight, and gender, and social factors, such as maternal education (Fasolo et al., 2010). Biological factors are children’s inherent abilities from birth, affecting their language development (Korpilahti et al., 2015). Social elements arising from interactions with the environment contribute to new linguistic variations in children (Darmawati, 2022). Therefore, should a child’s language development exhibit challenges, it becomes imperative for parents or educators to identify and address the underlying causes (MS et al., 2017), emphasizing the need for proactive and responsive intervention.

Studies from Sun et al. (2018) and Sun and Ng (2021) revealed that the quantity of language input at home, such as interaction with parents, significantly contributes to developing children’s English receptive vocabulary. I hypothesized that the habit during and post-pandemic was the influential factor when all children could not go outside, and this family used English to communicate with each other. Children with autism, on the other hand, appear to develop unique processes of linguistic learning. In the case of Nina, an Indonesian child, English was introduced by the parents as the first language at an early age at home; previously, the parents did not realize that their child had experienced autism spectrum disorder (further mentioned ASD). There seemed to be a lack of interaction in speaking the native language, Banjarese, and Indonesian. Consequently, the child experienced delays in native speech as well as a lack of socializing with the surrounding environment. As this 6-year-old child knew more English words than Indonesian, it was difficult for her to communicate and interact with her peers.
The study by Zhukova et al. (2023) stated that children’s exposure to media and gadgets has significantly increased in recent years, bringing the importance of researching to investigate its effects on children’s development, which, in this case, is language acquisition. The research also highlighted cases where unexpected foreign acquisition happens, causing delays in the speech of the native language of ASD children, which is still under research. Zhukova et al. (2023) argued that with the increasing exposure of technology to preschool children, it is considered that there would be more cases of speech delay and foreign language acquisition in children.

There have been numerous related types of research on the language learning patterns of these atypical learners, but quite a few focused on the problem of native language acquisition due to unpredicted foreign language acquisition. A study was about the unexpected bilingualism of a Russian child with ASD (Zhukova et al., 2023). This case study explored how Alex (pseudonym), an 11-year-old Russian ASD boy, acquired an unexpected foreign language, English, as his first language. There was a similarity between the participants in the previous and present research: both had perceived much English exposure from the media. This descriptive type of research included observation, interview, and documentation of the participants’ clinical findings. While the study explored Alex’s case in foreign language acquisition, going into detail about the development of cognitive and language, core symptoms of autism, behavior, and adaptive functioning (Zhukova et al., 2023), the present study’s participant answered what influential factors contribute to unexpected foreign language acquisition and what strategies needed for ASD children to acquire their native language.

In addition, a study was conducted by Hasanah and Hidayah (2023) investigating parents’ efforts in supporting a child with speech delay. By observation and interview techniques, the study thematically elaborates on factors affecting speech delay and parental efforts to stimulate better communication (Hasanah & Hidayah, 2023). What makes the present study different from the previous study is that the child, Farel (pseudonym), was a normal and typical learner in the previous study, but in the present study, the participant was diagnosed with ASD. Additionally, the study covered external factors to speech delay, while the discussion of the present research also included internal factors. Hence, it is safe to state that the result of this research would contribute to comparing the treatment given to speech-delayed normal children to speech-delayed ASD typical children.

Another study about language acquisition in children with speech delay was conducted by Akbar and Ismail (2021). The subject of the research, Farel
(pseudonym), was confirmed as a typical child and not having any mental disorder, meaning that the subject is purely experiencing speech delay. The qualitative study highlights the child’s speech delay condition from the perspectives of phonology, morphology, synthetic, semantic, and pragmatic (Akbar & Ismail, 2021). The research also discussed the factors causing the subject to experience speech delay, namely biological, social, and environmental factors. Similar to the second previous study, what distinguishes the present study and the previous study subject’s condition was a normal and typical child. In contrast, the participant of the present study was an atypical ASD child. The discussion is limited to the child’s speech delay and does not point out any foreign language acquisition. Besides, the result of Farel’s previous study focused on the class of words produced, speech delay influential factors, and obstacles faced by the subject also make it different from the goals of this research: exploring the factor of unexpected native language acquisition and describing treatments given to the research subject.

All in all, most of the results of the relevant studies discussed influential factors of speech delay by a normal child. The research subject of ASD children has only been brought into the highlight by the first previous study without exploring the suggested treatments in detail. On the other hand, strategies of suggested treatments and influential factors have been discussed consecutively by the second and third previous studies limited to the subject of normal children. Hence, the knowledge gap from the previous studies becomes the main idea for this study. It attempts to find out:

1. What are the influential factors of unanticipated English (L2) language acquisition that caused native speech delay for ASD child?
2. What are the strategies to overcome the speech delay experienced by ASD child?

Theoretical review

**How language acquisition relates to psycholinguistic and language development**

The psycholinguistic approach to language learning tends to agree that students need to be exposed (Cardenas, 2008). There are at least three major theories in language acquisition: behaviorism, nativism, and social/cognitive. Behaviorism theories were influenced in the 1950s when language was considered something gained from general behavior, such as reinforcement and imitation (Colman, 1994). An American psychologist, John B. Watson, mentioned a few of the key principles of behaviorism in his book: environment shapes behavior, and
learning is a process of conditioning (Watson, 1998). In language acquisition, Watson focuses on emotions experienced by a child and the link between the stimulus and reactions in the child’s surroundings. Another expert, Skinner, supported the theory that linguistic capability is gained from operant conditioning and imitation, followed by the expansion through response generalization (Skinner, 1957; Wardhaugh, 1971). Skinner added that giving compliments is an important factor that reinforces children's language development in better utterances.

On the other hand, the theories of nativism or innateness were supported by research on biological evidence of typical language development and atypical language development resulting from congenital factors (Wardhaugh, 1971). Chomsky (1986) argued that children must have innate abilities to acquire and proceed with language. Nativism theory believes language acquisition is biologically predetermined from birth (Broad, 2020). The human brain possesses a neural circuit containing linguistic information called the language acquisition device (LAD) (Rohike, 2023). A child’s natural inclination in language acquisition begins upon exposure to speech, and the child’s brain will interpret the input according to the principles it already understands. Additionally, Chomsky’s groundbreaking theories that LAD possessed certain linguistic knowledge have been the main topic in language acquisition debates (Indah, 2017). Thus, these mechanisms help generate something that aligns with the typical human language (Russell, 2002).

Swiss psychologist Jean Piaget proposed cognitive theories in language acquisition, which situate language acquisition within the broader context of a child’s mental and cognitive development (Rohike, 2023). Another concept from Jean Piaget is about object permanence. A child tends to be unaware of abstract objects, thinking that if something is lost in sight, it stopsexisting (Piaget, 2001). Piagetian theory, as explained by Rabindran and Madanagopal (2020), is when children are 1.5 years old, they start grasping that objects persist independently of their point of view. This theory focuses on a link between this comprehension and the urgent rise in children’s ability to produce words at this level, highlighting an interrelation between object permanence and object label acquisition. However, the aforementioned theory has its challenges. Babakr et al. (2019) argued that Piaget did not consider children’s cognition growth through social interaction.

About the language development according to Hurlock (2007), early childhood language development occurs methodically and advances in tandem with growing older. Internal and external factors influence children’s language development. Internal factors include the physiology or the infant’s condition at
birth (Lestari et al., 2021). The external factors are maternal education, family relations, socioeconomic and learning facilities. This means that the environment has an impact on children’s language development as well. In addition, Paradis et al. (2020) agree that linguistic development is influenced not only by language environment elements but also by child-internal factors such as age and cognitive abilities.

From several opinions, such as Skinner, Chomsky, Piaget, and Bruner, it can be concluded that language acquisition is in contrast to intentional language learning; a child’s language acquisition and mastery processes are carried out naturally as they take in information from their surroundings (Asrori, 2020).

**Stages of language development**

According to Gage and Berliner (1984), language development can be described as a one-word stage where language appears in the form of single-word utterances, usually starting after the first year of life. Around the age of 8-12 months, children have started uttering phonetic segments like “bu” which will be developed to be “bubu” to call mother or “pa” which will be “papa” to call father (Safitri, 2020). In other words, babies reach the one-word stage when they only use one real word (or made-up word) to talk about odd things and sometimes to replace a whole sentence (Al-Harbi, 2019).

In the two-word stage, at the age of one year, a child will be able to say two or three words that have meaning. In this stage, children connect two nouns or a noun and a verb, combining two words, such as ‘baby chair’, ‘mommy eat’ etc. (Fitria & Musthafa, 2019; Gabrić, 2021). In their sensorimotor stage from birth to 2 years old, children also explore the environment through reflexes, combining schemes and sensations, developing how their awareness could affect the environment, exploring the environment, and imitating and recognizing symbols and representing objects (Rabindran & Madanagopal, 2020).

Chukovsky (2021) explains that starting at the age of two, every child in a short time becomes a linguistic genius (language genius). This shows that children’s language development occurs very quickly at the age of two and over. Gleason and Ratner (2023) show that when children go beyond the two-word pronunciation stage, they can show that they have mastered some morphological rules. Normally, typically developing children have produced all the speech sounds of their first language before they are ten years old (Rudd & Kelley, 2011). In adolescence, vocabulary increases with abstract words, and individuals begin to be able to appreciate adult literary works (Santrock & Bhimasena, 2014).
Language development theory

Some of these theories of language development include the theory of nativism. According to Chomsky (1986), children are born equipped with a language acquisition device (LAD). A biological gift tool has been programmed to detail the possible grammar items. Chomsky explained that LAD is considered a physiological part of the brain specialized for processing language and has no connection with other cognitions (Indrayani, 2016). Wen et al. (2015) state that LAD consists of the ability to distinguish speech sounds from other sounds.

In behavioristic theory, children’s linguistic ability is obtained through stimulation from their environment (Nath, 2010). According to Skinner (1957), grammatical or language rules are verbal behaviors allowing someone to answer or say something. However, if the child can speak later, it is not becauseof “rule-governed” because the child does not express the rules of language. Behaviorists contend that stimulation (stimulus) from a particular environment improves children’s linguistic skills, which, in the earliest stage, is their mother and others around them or the so-called role models (Ajdini, 2021). They see language development as progress from random verbal expressions to the actual ability to communicate through the principle of S <-> R affinity (stimulus-response) and imitation processes (Asrori, 2020).

Cognitivism theory delivered by Piaget (2001) states that language is not a separate natural feature but one of several abilities that come from cognitive maturity. In cognitivism, the language acquisition process goes through four cognitive development stages: sensorimotor, pre-operational, concrete operation, and formal operation (Ningrum, 2017). In the same vein, this theory claims that children actively process knowledge, which might be used to increase their intelligence (Muhajarrah, 2020). We can see the connection between children's language and cognitive development based on Piaget's explanation of the formative years of intellectual development (Ningrum, 2017). In other words, cognitive ability is one element that determines a child’s linguistic development. Therefore, this cognitive aspect has an impact on language use where the more intense the aspect appears, the higher the use of language will be (Ningrum, 2017).

Method

Research design

This research adopted a case study method (Yin, 2018) and categorized it as
qualitative. A case study is a problem that presents an in-depth comprehension of a case or bounded system, which involves comprehension of an event, activity, process, or person (Cohen et al., 2018). The case study was used in the present study since this research focused on discussing a specific phenomenon of a child experiencing early self-interactive English learning that unanticipatedly became her first language acquisition and affected her native language acquisition. The selected design helped this research present insights and in-depth observation of the foreign language phenomenon to obtain adequate comprehension. The case study is arranged to answer the “what”, “how” and “why” of certain phenomena (Yin, 2018). Therefore, this case study answers what factors cause unpredicted foreign language acquisition and what strategies are employed for the social environment to cope with that linguistic problem through deep interviews with parents and teachers. Since this research observed one specific individual, the type of case study used would be a single case study (Creswell & Poth, 2018).

The participants

This single case study determines Nina (pseudonym), a 6-year-old Indonesian child, as the research subject and the main participant for her special condition as an ASD child acquiring English as her first language rather than Indonesian. By the time this research was conducted in 2023, Nina was a student studying in a preschool in Banjarmasin, South Kalimantan, Indonesia. Nina is the youngest of three siblings in the family.

In terms of communication, the child was quite slow in speaking the mother tongue but showed better skills in speaking English with more expressive gestures. For instance, she pointed her finger at the glass when saying drink to signify that she wanted water. The English she produced are one word, two words, and simple sentences such as the names of colors and things in the room.

After realizing that their youngest daughter is much more fluent in English than Indonesian, Nina's parents started paying attention to the child’s linguistic development in acquiring the native language. As predicted, Nina had difficulties socially interacting with her peers at school who are native to Banjarese (the local language of South Kalimantan) and Indonesian. After this child was referred to a psychiatrist for further checking, she was diagnosed to have receptive speech delay as she possessed little vocabulary and was having difficulty giving linguistic responses. The summary of the participants is shown in Table 1.
Table 1
The participants’ profiles

<table>
<thead>
<tr>
<th>Name</th>
<th>Nina (pseudonym)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
</tr>
<tr>
<td>Age</td>
<td>Six years old</td>
</tr>
<tr>
<td>Country</td>
<td>Indonesia</td>
</tr>
<tr>
<td>Level of education</td>
<td>Preschool</td>
</tr>
<tr>
<td>First language</td>
<td>English</td>
</tr>
<tr>
<td>Mother tongue</td>
<td>Indonesian</td>
</tr>
<tr>
<td>Special condition</td>
<td>Receptive speech delay, ASD</td>
</tr>
<tr>
<td>Speech ability</td>
<td>Possesses little vocabulary and difficulties in linguistic responses; slow in speaking the mother tongue, yet better in speaking English.</td>
</tr>
<tr>
<td>Social ability</td>
<td>Having difficulties interacting with her peers at school socially</td>
</tr>
<tr>
<td>Her mother</td>
<td>Nani (pseudonym); housewife</td>
</tr>
<tr>
<td>Her teachers</td>
<td>Rahmi (pseudonym); female</td>
</tr>
<tr>
<td></td>
<td>Desy (pseudonym); female</td>
</tr>
</tbody>
</table>

The other participants involved in the study are Nina’s mother, Nani (pseudonym), who is a housewife, and two female teachers who taught Nina’s class with model language teaching, Rahmi (pseudonym) and Desy (pseudonym). As a mother who had firsthand knowledge of her child, Nani is the main informant for the data provision of Nina’s speech delay. Meanwhile, the two female teachers who provided information about the school and class management in treating ASD child are the respondents in the interview. These teachers were also included as the subjects of Nina’s classroom observation.

To ensure that the participant recruitment was conducted morally responsibly, the parents and the school authorities of the research subject were fully informed of the study’s objective. Parents and teachers were also informed of the research, including its procedure, and interviewed voluntarily. After obtaining all the approvals and consent, the data collection process was started with confidentiality to protect the subject’s identity.

Data collection

Data collection techniques used in this study were interviews with Nina, her parents, and her teachers, and through observation and field notes, all of which were conducted after Nina had had her treatment. A semi-structured interview is defined as an exploratory interview that enables researchers to dive deeper for discovery (Magaldi & Berler, 2020). A semi-structured interview was selected with the parents and the teachers as the interviewees to investigate their view of
how Nina’s attitudes toward her communication, including intrinsic and extrinsic factors, of the child’s delays. The interview was also conducted to explore the interviewees' attempts to cope with the child’s linguistic problems through the implementation of advice from the experts. The interview started naturally, like a normal conversation. The interview was conducted with the parents and teachers all at once, and it took around an hour and a half. I asked for permission from the interviewees that the interview would be recorded. Besides recording their voice, notes were taken to highlight significant points. Then, the recording was transcribed to make coding and interpreting the information obtained easier.

The interview questions are as follows: (1) What factors possibly cause Indonesian speech delay to Nina? (2) What is the experts' advice for training an ASD kid with a speech delay so that she can speak Indonesian well? (3) How does the preschool give the treatment to encourage the research subject to interact more with her peers? (4) How is Nina’s linguistic development before and after the treatment? and (5) How can a child with a speech delay interact with her social circles? I also developed the questions according to the themes of factors of speech delay and strategies to overcome it to obtain adequate information.

Qualitative observation is employed in a natural setting without being limited by the categorization of measurement (Creswell & Poth, 2018). Before starting the observation, I obtained consent from the parents and school authorities and ensured that the research subject’s privacy would be protected. The observation schedule was also managed for it would be carried out during the language teaching model in Nina’s classroom. The observation guidelines were arranged to focus on: (1) How is the language teaching model carried out in the class? (2) What kind of communication behavior did the teachers apply in Nina’s classroom? (3) How are interactions going among Nina and her peers? (4) How are interactions going among Nina and her teachers? and (5) How was the classroom environment set up to encourage the research subject to interact with her social circles?

Field notes were carried out during observation to determine the strategies for implementing Nina's speech delay treatment in her classroom, which her teachers ran. Field notes are essential components in qualitative research to enrich data analysis (Creswell & Poth, 2018). Finally, documentation was used for further exploration. It is a wide range of written, physical, and visual materials (Creswell & Poth, 2018). In this case, a collection of students’ report cards is chosen to investigate the child’s background in intelligence and her progress in having social interaction at school related to her speech development.
Data analysis

Similar to most social science research, the data collected in this study were analyzed qualitatively with thematic analysis (Braun & Clarke, 2012). Thematic analysis is described as a method for identifying, organizing, and presenting insight through patterns gained from data (Braun & Clarke, 2012). For practicality, the one-hour-and-a-half interview recording data were transcribed and analyzed with qualitative coding technique by labeling each theme. For example, the data indicating school interventions will be labeled as 'SC. INV’ written in a column beside the transcript. Coding in qualitative inquiry mostly involves short phrases signifying important attributes or essence (Saldaña, 2009). Observation, documentation, and field notes occurred at Nina’s school when the participants did some activities naturally. In the observation process, I took note-taking and photos of how the children had language models teaching in her classroom as well as Nina’s responses. The notes were related to how the teachers implemented the language model teaching in stimulating Nina's native language production. Then, all the data were analyzed inductively to a broader context according to determined themes: factors causing speech delay and strategies for coping with linguistic problems.

The data were analyzed through the procedures: First, I managed and organized the data; second, the data obtained was coded to make it easier to analyze; third, data were qualitatively described and thematically developed; fourth, data was interpreted with relevant theories and previous research; fifth, data were represented (Creswell & Poth, 2018). In the data management process, the data files are collected in one folder. Then, the data is carefully scanned to take notes with words and short phrases regarding the research topic. These notes would be the codes to find Nina’s speech delay strategies and factors. After that, the data were described and grouped into a broader context in the categories of factors and strategies. After categorization, the data were finally analyzed inductively using the relevant theories. Inductive analysis properly accommodates the need for descriptive and interpretative power in the research (Burney & Saleem, 2008; Liu, 2016). After the data were obtained from specific observations, they were analyzed thematically with broader theories. Previous studies were also considered to be compared to recent studies. Finally, the data were represented through narration.

Trustworthiness

For the trustworthiness of this study, in the process of collecting and analyzing the data, the findings and interpretations were ensured accurate through
triangulation. Triangulation is a term used to define a process to increase the credibility and validity of research (Noble & Heale, 2019). It described the use of multiple approaches to obtain important information in this study; I used interviews, observations, field notes, and documentation. To ensure the trustworthiness, I did some checking. If it has lack of information, I rechecked to another approach.

Findings

Factors of speech delay

In this part, the analysis results show the factors related to speech delay, which are divided into internal and external factors.

Internal factors

**Premature birth:** The information in the interview obtained from Nina’s parents was that the research subject was born prematurely. Particularly, the mother gave birth in the eight month of the pregnancy, which led to the child experiencing ASD, causing speech delays.

This child was born prematurely with a weight of 2.1 kg. She spent nearly two weeks in an incubator and required a blood transfusion that might have affected her development. Until the age of 2, there isn’t much speaking or communication. (Nani, Nina’s mother)

It means that a child born prematurely has an internal factor that causes ASD. The phenomenon of an ASD child with speech delay was also experienced by Alex, the Russian kid in the first aforementioned relevant study (Zhukova et al., 2023). However, Alex’s mother did not have any medical complications during both pregnancy and delivery. The connection between prematurity, ASD, and language development will be discussed further in the discussion section.

External factors

**Language communication:** On the other hand, the external factor includes the language of the communication used by the family members at home and media exposure. English had been the first language in Nina’s family. They mostly used English in their daily interaction as the parents have been working in an English-speaking working environment. The family’s residence is also relatively close to
the parent’s workplace. Therefore, almost no language was shifting between both places, causing all the family members to get used to speaking English at home. The result of the interview below was obtained from Nina’s mother.

"I speak (English) for work. (Nani, Nina’s mother)

In the past, I worked in the container export-import service. However, I was mostly passive, while her father was more active as he had to communicate with foreign ship crews. (Nani, Nina’s mother)

When the child visited the office, she also often saw her father meeting with foreigners. (Nani, Nina’s mother)

From the information above, it can be concluded that the language used by Nina and her family is fully English. Not only between Nina and her parents but also between her brothers.

*English audiovisual media:* Similar to the first two previous studies, where the subjects were children exposed to English-dubbed audiovisual media, Nina unanticipatedly had the same experiences. The parents revealed that baby Nina was already used to listening to English songs frequently. Her mother said.

She also watched videos like Coco Melon on YouTube and played on the TV before frequently watching them on her cellphone. (Nani, Nina’s mother)

Perhaps there is an influence as well because we often play Western songs. (Nani, Nina’s mother)

From the information above, it can be concluded that her speech is delayed since baby Nina watched and listened to English songs and videos frequently.

The exposure was enhanced during the lockdown of COVID-19. As everyone had to stay at home, her mother was left with gadgets becoming her go-to to play with. It was a point that she was exposed more than before to English videos and songs.

I watched her old videos to find out when she started speaking English, and it turns out it was after the onset of COVID-19. (Nani, Nina’s mother)

This minimum socialization and automatic self-learning of English through media caused Nina to be able to speak a few words in English and simple, short sentences. Her ability to speak Indonesian was even lower. Regarding the social environment, Nina could still get along with her friends with limited interaction since her teachers and friends could not speak English. At the same
time, Nina could not understand Indonesian or Banjarese. Her teachers said:

Her Indonesian language is still stiff, but she can talk a bit longer. Her speaking ability is one year behind children of his age. (Desy, Nina’s teacher)

Although she doesn’t understand what her friend is saying, she still remains friends. She may be a bit less confident if it's with someone older or who speaks better. (Rahmi, Nina’s teacher)

From the information above, if someone's speaking ability is under the standards, it leads her to understand less.

The same thing also happened to Alex that the paper mentioned to his Russian-speaking peers; Alex’s limitation in the Russian language created a communication barrier (Zhukova et al., 2023).

**Strategies to cope with speech delay**

**Stimulation**

After consulting with pediatricians and psychologists, Nina’s parents were advised for Nina to have several stimulation therapies as an intervention program, assisted by experts, doctors, and therapists. The first intervention is the language use change that greatly influences a child's linguistic growth and development.

The doctor said it was enough to use only one language, Indonesian. Don’t be influenced by other languages, not even regional ones, because they will use Indonesian in school. (Nani, Nina’s mother)

After graduating from kindergarten, Nina was already fluent in Indonesian. [We] teach her while asking questions in English and interpreting them into Indonesian. (Nani, Nina’s mother)

The parents explained that to overcome the difficulty of speaking Indonesian; the doctor advised all family members not to use English whenever and wherever they were with the kid. Besides, it was also recommended that the family members be more talkative to redirect her attention from screen time. The family’s main priority is providing the child with Indonesian language exposure to help Nina’s native language acquisition.

At home, we also often (speak to) stimulate his/her emotions to make them come out. (Nani, Nina’s mother)
In having interaction with the child, it is suggested to stimulate her language produced by word repetition. The interlocutor said a few words and then let the child repeat and continue the next word. Nina’s mother said, “As her psychologist and the doctor said: *aku makan... (I eat<) aku... (I <)”*. The child said: “*aku... haus*” (*I am ... thirsty*) “*aku... lapar*” (*I am < hungry*).

Inviting the child to communicate with her peers is another treatment for the child to complete. The teachers are encouraged to stimulate the child to communicate using the Indonesian language. The deeper the children’s social relationships and bonding with their peers, the more they want to be accepted as a peer group member, and the more powerful their motivation to learn to speak. As students act according to the teacher’s directions, it is important for Nina’s teacher to ensure that she is engaged well in class activities using the Indonesian language.

The strategy used for children to speak more is communication, and we must also build the willingness for them to communicate with their friends, and their friends must also be willing to communicate with them. (Desy, Nina’s teacher)

In this case, Nina’s teachers planned a group focusing on language teaching models. It is not only aimed at the research subject’s native language acquisition to run well but also to increase the enthusiasm of other learners to be more actively speaking in class. Surrounded by active native speakers, Nina was expected to confidently speak Indonesian confidently to her peers. The class was designed to be comfortable and cheerful through games and role-play activities to convey linguistic information. I saw that role play became one of the pivotal tools that helped encourage participation and reduce inhibitions in the class. All students got their turn in the role they played. All students enjoyed expressing themselves, and nobody was left behind.

From the observation, I compared the research subject’s development before and after the intervention program. Before getting the treatment, Nina used to be very slow and tended to be inactive in speaking Indonesian. Her lexical sources were considered less for a child her age as she would only say a few words and simple sentences. English, moreover, would always be her main language, even when communicating outside the house.

After the intervention, Nina’s native language acquisition showed some progress. As an Indonesian-speaking social environment surrounded her, she started to get used to receiving more Indonesian vocabulary. It is in line with her ability to utter Indonesian vocabulary, which has improved. She can express how she feels and tell her daily activities. To conclude, this research is proof that speech delay in ASD children can still be intervened through several programs.
both within the family and in the children’s social environment.

Discussion

Factors to speech delay

Pregnancy and delivery are critical points to ensure the growth and development of the human body. In linguistic development, prematurity has been linked to the cause of autism spectrum disorder (ASD) (Crump et al., 2021). Similarly, it has been stated that the delays are influenced by internal factors consisting of genetics, physical disabilities, neurological malfunctions, prematurity, and gender (Yulinda, 2019). It is also supported by Hariningtyas et al. (2022), who argued that there is a significant correlation between prematurity and developmental language disorder.

The theory of nativism in language development mentions that humans are born with a language acquisition device (LAD) or language acquisition system (LAS), which includes physiological parts of the brain to process language. A phenomenon where a child is exposed to impoverished sentences yet can still produce grammatically correct sentences was a starting point of Chomsky’s (1986) argumentation of nativist theory. Therefore, children at Nina’s age would normally have 2,600 lexical sources of expressive vocabulary and 20,000-24,000 for receptive vocabulary (Verhoef et al., 2021). Additionally, 6-year-old children could make simple compound sentences with conjunctions (Ferhadija et al., 2018). With the condition of ASD, however, Nina is predicted to have a different structure of grey matter thickness and gyrification in the part of the language-related area of the brain, as stated by Arutjunian et al. (2023) in structural brain abnormalities and their association with language impairment in school-aged children with ASD. To sum up, one internal factor to Nina’s speech delay is prematurity, which leads to ASD and finally causes delays in her speech.

Three previous studies have elaborated on external factors due to children’s delayed speech related to exposure to media. The most similar case is Alex’s (Zhukova et al., 2023), where the research subject unexpectedly acquired English better than his native Russian. Even though Nina and Alex could speak English, their English language skills were also categorized as deficit due to their ASD condition. In terms of media exposure, Nina, Alex, and Farel, the research subjects of the third relevant study (Akbar & Ismail, 2021), are exposed to English-language audiovisual media. In the theory of behavioristic language development (Skinner, 1957), stimulation plays a significant role in language abilities, where the stimulus from the environment improves children’s linguistic
skills. The downside, however, of the stimulus dominantly coming from gadget screen time is that the child would have less opportunity to be active in producing language (Putra et al., 2022). Children only watch the shows for hours, receiving language without actually practicing it. Consequently, the children are not used to being interactive and tend to be passive, contributing to speech delays. Thus, the high intensity of gadget screen time becomes the first influential factor for children with speech delay (Putra et al., 2022).

The other linguistic stimulation for children undeniably comes from their social environment. During the lockdown of COVID-19, where everyone had to stay at home, Nina was limited to interacting only with her parents and siblings, who also used English to communicate at home. A similar thing happened to Alex when he was homeschooled for third grade. However, it was not on the discussion whether or not Alex’s family members and the parents also spoke in English at home. Later, when both were finally back to regular school, their first language, which differed from their peers, limited them from having social interaction. This finding aligns with the theory of Gage and Berliner (1984) that parents and siblings have more influence on a child’s linguistic progress as language develops naturally at home. Safitri (2020) also argued that children obtain linguistic skills from their parents. In the case of Alex and Nina, the difference in the first language they speak made it challenging for them to gain more linguistic input from their social environment. Therefore, English language acquisition at home and the inability to socialize with peers became the other influential factors of the speech delay of the research subject.

**Strategies to cope with speech delay**

The second relevant study from Hasanah and Hidayah (2023) discussed parents’ efforts to support children with ASD. To compare, the discussion of this research not only includes parents’ efforts but also covers what teachers can do to help the linguistic development of ASD children. Vygotsky argued that children's cognitive development and language are closely related to the culture and the communities in which children live (Indrayani, 2016). The strategies parents can do, as directed by pediatrics and psychologists, is to involve the child in more conversations exercising the Indonesian language. In order to produce the target language, parents should design a supporting environment to develop children’s linguistic ability since children build their knowledge from what they are surrounded by. As children’s development in early language is closely related to children's activities, parents' strategy includes their effort to engage Nina in the conversation about her daily schedule and experiences. For instance, asking about her experiences through her senses. This is in line with the result of a study
From Hasanah and Hidayah (2023), which suggests parents ask 5W+1H questions rather than asking yes/no questions to children. Additionally, this second relevant study also recommends parents not respond to their children if the child’s delivery is only by giving gestures instead of word utterances. This is intended to stimulate the child to get used to expressing their mind linguistically (Hasanah & Hidayah, 2023).

Speaking about delivery, children with ASD need a longer time to process linguistic output. A research report stated that students with ASD might need more time and repetition to learn new concepts and incorporate them into existing repertoire (Alberta Special Education Branch, 1995). Therefore, parents of the research subject are advised to exercise the repetition method patiently. Similarly, the research from Hasanah and Hidayah (2023) also suggested this repetitive communication style in uttering the words children want to convey.

The other strategy to be developed is providing a supportive environment outside the house, which, in Nina’s case, is her school. According to Onnis et al. (2018), the language structure arises because of continuous interaction between the child’s cognitive function level and his linguistic environment. Therefore, the teachers are encouraged to teach orally and emphasize verbal practices (Akbar & Ismail, 2021). One approach I noticed in observing the language teaching model for Nina’s class is role play. The teachers also arranged class activities to invite the children to move their bodies with verbal expressions. The enthusiasm built was intended to encourage Nina to feel a sense of belonging.

Slowly, Nina’s confidence in speaking Indonesian started growing. She started interacting with her peers using the Indonesian language, which automatically made it easier for her to socialize in her social environment. As a result, mingling in Indonesian speaking improves her speaking ability in indifferent word classes, pronunciation, and grammatical structures. Now, Nina’s vocabulary skills show real progress, and she can express herself daily.

Conclusion

The purpose of this case study is to investigate influential factors of speech delay affecting a six-year-old ASD (autism spectrum disorder) preschool kid, Nina, during her unanticipated process of acquiring a foreign language and the interventions given to cope with the linguistic problem. The internal factor is premature birth, while the external factors are foreign language exposure through media, daily foreign language use among family members, and different first languages in the child’s social environment. The strategies for addressing
the linguistic issues suggest parents and family members involve the children in Indonesian conversation at home using the oral repetition method and avoiding the gesture/expansive approach, and teachers at school design language model teaching through class activities.

As technology develops rapidly and is getting closer to our everyday routines, it is safe to say that in the future, more parents might choose gadgets for their children to play with. Therefore, the implication of this research is to highlight the significance of the role of parents in being careful in choosing the environment in which children will grow up. Another significance of the result of the research is the interventions in Nina’s language acquisition could be alternative strategies to treat ASD child with speech delay. Furthermore, through this study, I expected the policymakers to support inclusion and optimum treatment for ASD children in school and the community.

This research has limitations in exploring the case study of one specific child from the side of psycholinguistics. This study has not presented a comparison of the number of words before and after treatment. The research also used a small sample size and did not specify what class of word the child found hard to express. It is expected that other researchers in the future will investigate cases of speech delay and language acquisition for children with ASD with more detailed reports through the perspectives of physiological structures, language-related brain areas, and their relation to joint attention with mixed methods for a more thorough study.

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