


**LANGUAGE DEVELOPMENT OF AUTISTIC CHILDREN ON SYNTACTIC ACQUISITION  
IN INDONESIA THROUGH STORY STIMULUS**

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ARTICLE INFO	ABSTRACT
<p><b>Article history:</b></p> <p>Received 09 June 2023</p> <p>Accepted 06 September 2023</p>	<p><b>Purpose:</b> This study shows that children with Autism Spectrum Disorder experience difficulties in communicating.</p>
<p><b>Keywords:</b></p> <p>Language Acquisition; Autism; Syntax; MLU (Mean Length Of Utterance).</p>	<p><b>Theoretical framework:</b> This difficulty is in the form of limited syntactic complexity which has an impact on the low ability of autistic children to produce language, so that it will also have an impact on social life and the sustainability of autistic children's learning. This study investigates the language development of autistic children related to the provision of storytelling stimuli which are calculated using Mean Length of Utteranc.</p>
	<p><b>Design/Methodology/Approach:</b> Study uses a descriptive qualitative research form with a case study approach.</p> <p><b>Findings:</b> These findings indicate that based on observations of the syntactic production abilities of autistic children through Mean Length of Utterance, it can be seen that there are differences in children's language development, especially in the field of syntax before and after being given a fairy tale stimulus. Syntactic production of autistic children in 12 calculations showed a fluctuating graph, in contrast to the developmental conditions after being given a fairy tale stimulus, the subject experienced an increase which tended to be stable.</p> <p><b>Research, Practical &amp; Social implications:</b> Based on the fairy tale stimulus given, this type of fable is very appropriate and in great demand by children with mild category autism spectrum disorder (ASD).</p> <p><b>Originality/Value:</b> The authors declare no potential conflicts of interest with respect to the research, authorship, and publication of this article.</p> <p>Doi: <a href="https://doi.org/10.26668/businessreview/2023.v8i9.3276">https://doi.org/10.26668/businessreview/2023.v8i9.3276</a></p>

**DESENVOLVIMENTO DA LINGUAGEM DE CRIANÇAS AUTISTAS EM AQUISIÇÃO SINTÁTICA  
NA INDONÉSIA ATRAVÉS DE ESTÍMULO HISTÓRICO**

**RESUMO**

**Propósito:** Este estudo mostra que crianças com Transtorno do Espectro do Autismo têm dificuldades de comunicação.

**Estrutura teórica:** Esta dificuldade é na forma de complexidade sintática limitada que tem um impacto na baixa capacidade das crianças autistas para produzir linguagem, de modo que também terá um impacto na vida social e na sustentabilidade da aprendizagem das crianças autistas. Este estudo investiga o desenvolvimento da linguagem

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de crianças autistas relacionadas com a provisão de estímulos de narrativa que são calculados usando o Comprimento Médio da Frequência.

**Projeto/ Metodologia/ Abordagem:** O estudo usa um formulário descritivo de pesquisa qualitativa com uma abordagem de estudo de caso.

**Descobertas:** Estas descobertas indicam que, com base em observações das habilidades de produção sintática de crianças autistas através do Tempo Médio de Expressão, pode-se ver que há diferenças no desenvolvimento da linguagem das crianças, especialmente no campo da sintaxe antes e depois de receber um estímulo de conto de fadas. A produção sintática de crianças autistas em 12 cálculos mostrou um gráfico flutuante, em contraste com as condições de desenvolvimento depois de receber um estímulo de conto de fadas, o sujeito experimentou um aumento que tende a ser estável.

**Pesquisa, Implicações práticas e Sociais:** Com base no estímulo do conto de fadas dado, este tipo de fábula é muito apropriado e em grande demanda por crianças com transtorno do espectro do autismo de categoria leve (TEA).

**Originalidade/Valor:** Os autores declaram não haver conflitos de interesse em relação à pesquisa, autoria e publicação deste artigo.

**Palavras-chave:** Aquisição de Línguas, Autismo, Sintaxe, MLU (Comprimento Médio da Expressão).

## DESARROLLO DEL LENGUAJE DE NIÑOS AUTISTAS SOBRE LA ADQUISICIÓN SINTÁCTICA EN INDONESIA A TRAVÉS DEL ESTÍMULO HISTÓRICO

### RESUMEN

**Finalidad:** Este estudio muestra que los niños con Trastorno del Espectro Autista experimentan dificultades en la comunicación.

**Marco teórico:** Esta dificultad está en la forma de complejidad sintáctica limitada que tiene un impacto en la baja capacidad de los niños autistas para producir lenguaje, por lo que también tendrá un impacto en la vida social y la sostenibilidad del aprendizaje de los niños autistas. Este estudio investiga el desarrollo del lenguaje en niños autistas relacionado con la provisión de estímulos narrativos que se calculan usando la longitud media del uterano.

**Diseño/ Metodología/ Enfoque:** El estudio utiliza una forma de investigación cualitativa descriptiva con enfoque de estudio de caso.

**Hallazgos:** Estos hallazgos indican que con base en observaciones de las habilidades sintácticas de producción de los niños autistas a través de la Longitud Media de la Expresión, se puede ver que existen diferencias en el desarrollo del lenguaje de los niños, especialmente en el campo de la sintaxis antes y después de recibir un estímulo de cuento de hadas. La producción sintáctica de niños autistas en 12 cálculos mostró una gráfica fluctuante, en contraste con las condiciones de desarrollo después de recibir un estímulo de cuento de hadas, el sujeto experimentó un aumento que tendió a ser estable.

**Investigación, Implicaciones prácticas y Sociales:** Basado en el estímulo de los cuentos de hadas, este tipo de fábula es muy apropiada y de gran demanda para niños con trastorno del espectro autista (TEA) de categoría leve.

**Originalidad/Valor:** Los autores no declaran posibles conflictos de interés con respecto a la investigación, autoría y publicación de este artículo.

**Palabras clave:** Adquisición de Idiomas, Autismo, Sintaxis, MLU (Longitud Media del Enunciado).

### INTRODUCTION

Children who have autism spectrum disorders (ASD) have delays in language development, especially in vocabulary acquisition. Children with autism spectrum disorder and intellectual disabilities reach 31% based on an autism diagnosis in the United States (Maenner et al., 2020). Another thing shows that children with autism spectrum disorders experience weaknesses in the cognitive domain (Yeganeh & Kamari, 2020). Children with autism spectrum disorder have minimal verbal ability to use communication skills with others, but to support the

delivery of information they do, autistic children choose to use gestures, eye gaze, body language and facial expressions to express it (Ambridge et al., 2015). This limitation will lead to weak spoken language production abilities of children with autism spectrum disorders so that it is necessary to improve linguistic comprehension skills. The basic thing that determines the level of linguistic comprehension skills is in understanding phonology, morphology, syntax, and semantics (Arunachalam & Luyster, 2016). This research focuses on the language acquisition of children with autism spectrum disorder at the syntactic level. The syntactic form produced can be an indicator of the good or bad oral language skills of autistic children (Didirkova et al., 2019). The more the average child's word length, the more complex the syntactic production will be, so this indicates that there is a complex spoken language production, the higher the child's ability to communicate. The syntactic complexity produced by children with autism spectrum disorders can be seen through the average length of words calculated using the MLU (*Mean Length of Utterance*) calculation method. This calculation is a method that was developed by Brown in 1973, MLU is the average number of morphemes produced in one utterance, through this calculation information will be obtained about the child's language development. MLU is also an indicator of children with language delays or language disorders (Baio et al., 2018). To overcome delays in language skills of children with autism spectrum disorder (ASD) it is important to understand the supporting factors that are useful for improving language skills. Autism researchers make efforts that focus on understanding the causes of deficits and finding the best way to overcome these limitations (Arunachalam & Luyster, 2016). It is intended that children with autism spectrum disorders (ASD) who experience lifelong language disorders can be reduced (Janik Blaskova & Gibson, 2021). Based on the existing theory, it can be synthesized that children with autism spectrum disorder have limitations in communicating due to a deficit in producing syntactic complexity. The ability of autistic children in acquiring this syntax can be determined by calculating the average length of words using Mean Length of Utterance (Wu, 2020).

Language acquisition is a series of processes that occur in a child's brain when he acquires his mother tongue (Boucher & Lalonde, 2015). There are two processes that occur when a child is acquiring his first language, namely *the competency process* and *the performance process* (Brady, Fleming, Bredin-Oja, Fielding-Gebhardt, & Warren, 2020). Competence is a process of mastering grammar that takes place unconsciously. The competence process is a requirement for the performance process to occur which consists of two processes, namely the understanding process and the publishing process. The process of understanding

involves the ability to perceive the sentences heard. Meanwhile, publishing involves the ability to produce sentences in their own language (Clark, 2019). So linguistic ability consists of the ability to understand and the ability to produce new sentences (Ambridge et al., 2015). Language acquisition that studies language in terms of ontogeny is based on each effort made, while language acquisition that studies language in terms of pyogeny is based on natural stages in child development (Song et al., 2022). Other researchers also argue that language acquisition is a successful process of children receiving and processing their mother tongue (LeGrand et al., 2021). Acquisition of children's language has the characteristics of continuity, has a series of units and moves from simple one-word utterances to more complex word combinations. One branch of linguistics that deals with the internal structure of sentences includes phrases, clauses, and sentence (Gabig, 2021).

Language acquisition theory has two distinct components, namely competency factors and performance factors (Butler et al., 2023). Competency factors base language acquisition on linguistic competence related to how children build grammatical rules and experience changes from a certain time. The performance factor concentrates on understanding and producing spoken language. In the process of understanding, children determine meaning in language input and are influenced by cognitive abilities. Language production that occurs, the child's spoken language does not reflect linguistic intelligence (Fusaroli et al., 2019). The theory of language acquisition begins with competency factors with a focus on acquisition of levels, one of which is acquisition of syntactic levels (Crowley et al., 2015). Chomsky said that the acquisition of syntax is bound to structure, so that if these grammatical rules are ignored, it will form *ungrammatical* or non-conformance with the established grammar (Sultana, 2019).

The acquisition of this syntax will calculate the average word length using MLU (*Mean Length of Utterance*). MLU has become the standard index used by researchers (Govindarajan & Paradis, 2022). Other research focuses on the relationship between child age and MLU (*Mean Length of Utterance*) (Harbison et al., 2017), the use of MLU (*Mean Length of Utterance*) in the acquisition of syntax uttered by children, and the acquisition of syntactic levels in children's conversations *down syndrome*. Brown developed MLU (*Mean Length of Utterance*) on linguistic theory and saw language as the ability to incorporate syntactic elements separate from usability functions. The theoretical basis underlying MLU (*Mean Length of Utterance*) to determine syntactic development is obtained through the morpheme count divided by the number of utterances, the result shows how a child's language competence is (Fusaroli al., 2023). The number of MLU morphemes is closely related to the number of syllables, because

syllables show modulation so that the quality is balanced. Based on these opinions, it can be synthesized that language acquisition with competency factors focuses on the acquisition of syntax related to language production abilities. Syntactic acquisition is bound to structure, if language production is not in accordance with grammatical rules it will form inappropriate language production. Syntactic acquisition is calculated by dividing the number of morphemes by the number of utterances produced by the child. Through the results of these calculations, it can be seen whether the level of children's syntactic production abilities is high or low (Romeo et al., 2022).

Autism is a disorder that affects children's development and is complex. Children with autism have a variety of problems that interfere with and hinder the sufferer's development in socializing in society (Mankovich et al., 2022). kindly *neurological* (system breathing), autistic interpreted as disturbance development brain, especially on part social, Language, And fantasy. Kenner (1943) argues that autism is a disorder with 3 general criteria, namely the presence of disturbances which include interpersonal relationships, disturbances in language development, and the habit of repeating or doing the same behavior repeatedly (Kissine et al., 2019). Autism is also defined as a broad disorder of *neurobiological development*. The causes of autism vary, most likely it can be caused by genetic traits, then the influence of environmental factors that are multifactor, among others; exposed to infection (*rubella, cytomegalovirus*) when the child is still a fetus in the womb, contamination of the baby's or mother's body during pregnancy and breastfeeding with chemicals such as food coloring, food preservatives, food flavorings, and other *food additives*, as well as environmental pollution such as contamination of lead, lead or mercury from consumption of fish contaminated with mercury as a vaccine preservative (Kidd et al., 2018).

Symptoms of autism appear before the age of 3 years. Autistic child can occur from birth is called with autistic classic And after born Where child until age 1-2 year show development Which normal. But on period furthermore show development Which down or backwards. Matter This called autistic regression. Seeing the symptoms that appear Kenner (1943) explained that the disorders that appear in the symptoms of autism have dominance over language disorders, this is shown in delayed mastery, *ecolalia, mutism*, sentence reversal, the existence of *repetitive* and *stereotyped play activities*, and can affect the weak interaction skills of autistic children with others (Mohammadzaheri et al., 2022). Autism raises signs and symptoms during early growth with *infantile autism* (Maenner et al., 2020). In addition, symptoms of autism are symptoms in the category of developmental disorder, *perpassive*

*developmental disorder* or commonly called *perpassive developmental disorder*. This disorder indicates developmental deviations or delays. skills, perception of value in reality, attention and motor movement. Meanwhile, other opinions state that *pervasive developmental disorder* is a category that has been designed by the American Psychiatric Association which is used as a standard for grouping children with deviations or obstacles in social, language and cognitive development (Smith et al., 2023).

The characteristics of autism behavior in children include language or communication limitations, being unresponsive, having repetitive habits (repetition of doing something), inappropriate sensory responses, and gaps in behavioral development including delays and skills appearing out of normal sequence (Ökcün-Akçamuş et al., 2019). Through existing theory, children with spectrum disorder (ASD) are caused by genetic factors and environmental factors that are multifactorial. Disorders that appear in autism symptoms have dominance over language disorders.

Fairy tales are stories that are lifted from fictional thoughts and true stories. This story becomes a life journey plot with a moral message that contains meaning and how to interact with other creature. Fairy tales are also interpreted as fictional narrative stories whose authors are unknown and have entertaining characteristics (Novack et al., 2017). Fairy tales are simple fantasy stories that don't really happen and function to convey moral teachings to educate children and are also entertaining, so fairy tales are a form of literary work where stories don't really happen or are only fictional. while other opinions state that fairy tales are stories that really happened in ancient times. Fairy tales are considered as fictional stories that develop in society and are able to influence people's mindsets (Pauls & Archibald, 2021). Fairy tales (*folktale*) is a collective culture which in anthropology is known as folklore. Folklore is a general term for the verbal, spiritual, and material aspects of a culture that are transmitted orally, by observation, or by imitation. People who live in the same culture will have the same occupation, language, ethnicity, and geographic location, which make up traditional materials. It is this traditional material that will be preserved and passed on to the next generation based on the memories, goals and talents of the person who conveys it (Werfel et al., 2021).

Storytelling is a work of art that needs to be developed as a positive means in order to support broad interests. Based on the history that has developed in society, the culture of telling fairy tales has existed since before the appearance of relics in the form of written documents and historical books. In order to record the events that occurred, the community chose to tell them orally to generation after generation (Rafiq et al., 2019). The activity of telling fairy tales

as an art in narration skills is shown by someone to the audience directly by telling or narrating, using props, pictures, and also music.

Seeing the form of fairy tales that are rich in value and fun for children, fairy tales have a positive influence on the development of children's intelligence. Children with autism spectrum disorders have deficits in self-confidence, courage, and tend to be passive in conveying ideas to others, so children need to be given approaches, motivation, and stimulus from other people. Children's language skills which consist of listening skills and speaking skills are important aspects that must be honed. To hone these competencies, children often feel attracted to picture books used to tell stories (Schilhab, 2015). Optimization of child development can be done by providing a stimulus that is appropriate to their age. Storytelling stimulation can influence lexical-semantic and structural language intelligence related to children's ability to produce stories. Props are often presented so that children's activities in listening to fairy tales are centered and make children accept utterances with new words and are able to retell the fairy tales they get. This is considered very effective as a stimulus in developing children's intelligence, especially in the field of language. Summarizing the existing theory, giving fairy tales or narrating activities given to children can be used as a stimulus in optimizing the development of children's intelligence. Especially language intelligence which includes lexical-semantic and structural. Research on semantics has been conducted by Nugraha (2017) to describes the deviation of children's speech in the field of semantics, namely the mismatch between one word spoken and its reference 4-years-old-children. Haryadi's (in Christopoulou et al., 2021) research is also to reveal how the thematic role structure in the utterances of 13-year-old autistic children. The previous research that examines the acquisition of passive sentences. Fitriyani (2016) examines and discusses the use of passive sentences in children with the use of Sundanese mother language by paying attention to passive sentence patterns in Sundanese and analysing passive verb arguments related to semantic roles to determine their dominance in terms of meaning and linking them to gender.

The current study examines children's language development in the acquisition of the syntactic level seen before being given a story stimulus and after being given a story stimulus. This study can be used to take independent steps in knowing the abilities of autistic children in their ability to produce language. This study seeks to answer the following questions:

1. How is the language development of autistic children in the acquisition of syntax in Indonesia before giving fairy tales stimulus?

2. How is the language development of autistic children in the acquisition of syntax in Indonesia after being given a fairy tale stimulus?

Based on data in the field and through analysis using predetermined methods, it was found that the form of speech of children with autism spectrum disorder (ASD) before getting a fairy tale stimulus is monotonous and dominant over one-word speech, after getting a fairy tale stimulus for children with autism spectrum disorder (ASD) is able to show good changes. Likewise, the average word length of children with autism spectrum disorder showed a steady and significant increase after being given a fairy tale stimulus. Stable and significant increase specifications will be discussed in the research results and discussion.

## **THEORETICAL FRAMEWORK**

### **Language**

Language cannot be equaled with speech alone. An essential component of language is Prefrontal Synthesis (PFS), which is defined as the process of juxtaposing mental visuospatial objects at will. Consider the two sentences: “The lion carries the monkey” and “The monkey carries the lion.” The two sentences use identical words and the same grammatical structure. Appreciating the delight of the first sentence and the absurdity of the second sentence depends on the visualization of the scene, that is accomplished by the lateral prefrontal cortex (LPFC) synthesizing the mental object of the monkey and the mental object of the lion into a novel picture (hence the name Prefrontal Synthesis or PFS) (Murthado, Arung, Boeriswati, & Rahman, 2021). Association of language with Wernicke’s and Broca’s areas is well-known. Less common is the realization that understanding of the full language depends on the lateral prefrontal cortex (LPFC). Wernicke’s area primarily links words with objects, the Broca’s area interprets the grammar and assigns words in a sentence to a grammatical group such as noun, verb, or preposition, but only the LPFC can synthesize the objects from memory into a novel mental image according to provided description 7,8. This latter visuospatial function may be called imagination, but we prefer a more specific term, Prefrontal Synthesis (PFS) in order to distinguish this function from other components of imagination, such as simple memory recall, dreaming, spontaneous insight, mental rotation, and integration of modifiers, that evolved at different times.



## Acquisition

Typically developing children acquire PFS between the ages of 3 and 4 years 1. Atypically developing children often struggle with PFS acquisition. In developmental psychology this problem is traditionally described as stimulus overselectivity, tunnel vision, or lack of multi-cue responsivity 45–47. Affected children have difficulty accomplishing seemingly trivial tasks, such as an instruction to “pick up a blue straw that is under the table,” which requires them to combine three different features i.e., the object itself (straw), its color (blue), and its location (under the table). These children may “over-select” the word “straw” and ignore both its location and the fact that it should also be blue, therefore picking up any available straw; alternatively, they can “over-select” on the color, therefore picking up any blue object. (The name of this phenomenon is erroneous (Indah & Rohmah, 2020). It is not that a child “over-selects” any single feature, rather it is the failure of mental integration (Suryanita et al., 2020). In other words, it is not attention or focus problem, but paralysis of voluntary imagination).

## RESEARCH METHODS

The effectiveness model used in this study experimental. There are ten steps in Operational Field Testing (Sugiyono, 2018) The model in a study is a reference, because the Borg & Gall model has a gradual framework so that each element is related to one another (Kurniati et al., 2021). This research will be conducted at the FSS of SUP Swimming Pool located on the main campus of SUP *Air Tawar* from November 2021 to February 2022. Researchers set the sample in this study using Purposive Sampling with a sample of 12 students.

## Approach and Type of Research

This research is a qualitative descriptive research that focuses on a case study approach. Case study is a research method in the social sciences or an empirical research method and examines phenomena in real-life contexts, the boundaries between phenomena and contexts are not clearly visible, therefore multiple sources of evidence are used (Yin, 2018). As an approach used in a case study research, it can add value to unique knowledge related to individual, group, social, and political phenomena. Case studies also allow researchers to retain the holistic and meaningful characteristics of real life events, social change and international relations (Yin, 2018).

## Participant

The data in this study are the utterances of autistic children based on the syntactical level. The data source for this research is a subject who is categorized as an autistic child aged 7 years. The type of autistic child needed is a mild type of Autism Spectrum Disorder (ASD), which in this type of autism indicates a weakness in language skills in autistic children. Furthermore Sources of data obtained through documents, namely speech recordings of autistic children using audio microphones . According to Robert K. Yin (2018) sources and participants in a study are able to provide information and explanations about the topic under study. In addition, the subject can also provide input regarding sources and evidence that can be used as additional data for research. The subject is also the main key in a case study research, therefore the selection of subjects must be done appropriately. The subjects selected in this study were three autistic children (Fadilah Utami et al., 2022).

## Procedures and Actions

The fairy tales were given 12 times with different titles. Fairy tales are told by using props such as dolls, paper puppets, picture paper, and also using picture story books. Researchers and class teachers collaborate to tell a story with prepared props or fairy tale media. The researcher took turns with the class teacher telling the story for the research subject. In this storytelling activity, autistic children interact with researchers by way of researchers triggering the subject using questions related to fairy tales. The researcher also gave the subject the opportunity to retell the story that had been heard (Andarwulan & Ibrahim, 2021). Researchers recorded the interaction using an audio microphone. After the subject recording results were obtained, the researcher transcribed the data and processed the data using the *Mean Length of Utterance technique*.

## RESULTS

### The Language Development of Autistic Children on the Acquisition of Syntax in Indonesia Before Giving Fairy Tales Stimulus

The development of language in the three subjects before giving the fairy tale stimulus on counting 12 times shows syntactic production through the MLU (*Mean Length of Utterance calculation formula*), namely the total number of words divided by the number of utterances. the calculation results show unstable and very low results. Looking back at the table of stages

of children's language acquisition based on MLU divided into ten stages by Brown (in Hijril, 2021) the ten stages are:

Table 1. Stages of language acquisition according to Brown's theory

<b>MLU stage</b>	<b>Age</b>	<b>Average word count</b>
Stage I	12-22 months	1 - 1.5
Stage II	22-27 months	1.5 - 2.0
Stage III	27-28 months	2.0 - 2.25
Stage IV	28-30 months	2.25 - 2.5
Stage V	31-32 months	2.5 - 2.75
Stage VI	33-34 months	2.75 - 30.0
Stage VII	35-38 months	3.0 - 3.5
Stage VIII	39-40 months	3.5 -3.75
Stage IX	41-46 months	3.75 - 4.5
Stage X	> 47 months	4.5>

Source: processed the data from SPSS

Through the *stages* of language acquisition in Brown's theory, the researcher processed the *data* on the results of calculating the subject's language acquisition based on these guidelines. So the results of the analysis are obtained as follows:

Table 2. The results of calculating all subjects before giving the story stimulus

<b>Counting</b>	<b>Subject 1</b>	<b>Subject 2</b>	<b>Subject 3</b>
Counting 1	1.40	1.95	1.72
Counting 2	1.50	1.79	1.64
Counting 3	1.30	1.94	1.69
Counting 4	1.58	1.82	1.66
Counting 5	1.72	1.79	1.56
Counting 6	1.44	1.78	1.70
Counting 7	1.54	1.86	1.54
Counting 8	1.42	1.80	1.64
Counting 9	1.47	1.72	1.63
Counting 10	1.55	1.77	1.60
Counting 11	1.47	1.86	1.68
Counting 12	1.40	1.88	1.60

Source: processed the data from SPSS

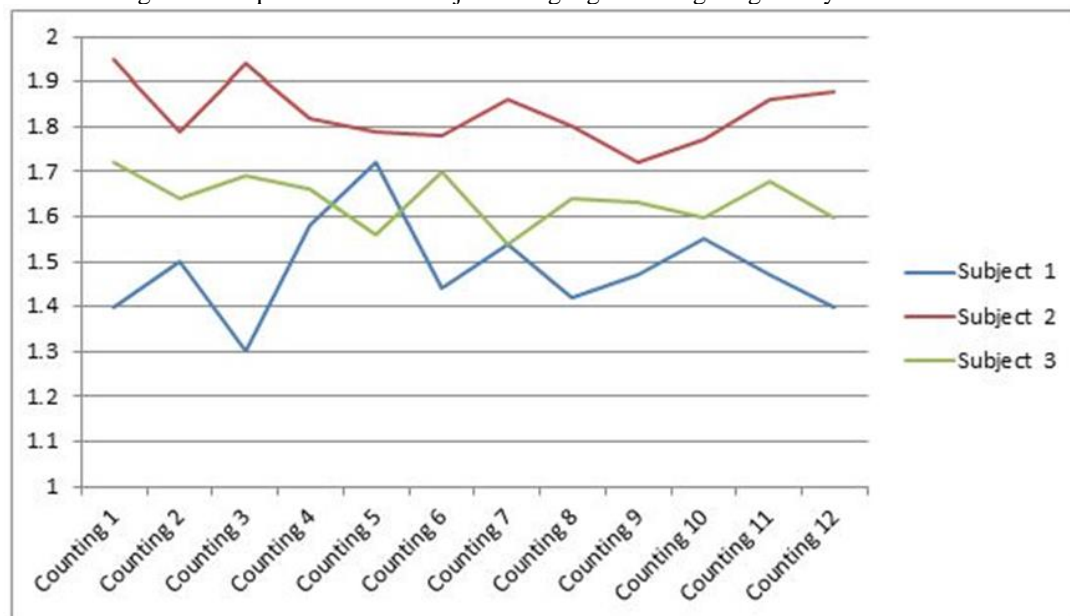
Based on Table 2, it can be seen that the results of calculating language acquisition in subject 1 fluctuated in almost every calculation. This shows that the language skills of subject 1 are not yet stable. in counting 1 towards counting 2 subject 1 was able to experience an increase of 0.10 words per utterance, but in counting 3 it decreased by 0.20 words per utterance. In the 4th count, subject 1 experienced an increase of 0.28 words per utterance. It increased again by 0.14 words per utterance in the 5th count. However, subject 1 decreased again by 0.28 words per utterance in the 6th count and experienced an increase in the 7th count of 0.10 words per utterance. Another decrease occurred in count 8 of 0.12 and an increase in count 9 of 0.5 words per utterance. Counting 10 shows an increase of 0.8 words and continues to decrease

from counting 11 and counting 10 of 0.8 words per utterance and 0.7 words per utterance. This fluctuation with a non-fixed range indicates that subject 1's language ability is still low and far from the appropriate category at the language acquisition stage of Brown's theory. Based on the results of subject 1's language acquisition from the range of 1.30 to 1.72 words per utterance, it shows that subject 1's language acquisition is still on par with children aged 1 or 2 years.

The results of the calculation of subject 2 also experienced fluctuations. In the results of counting 1 of 1.95 words per utterance, in counting 2 it decreased by 0.16 words per utterance and was followed by an increase of 0.15 words per utterance in counting 3. In counting 4 it decreased by 0.12 words per utterance, and continued to decrease successively until counting 6 with a difference of 0.04 words per utterance and 0.01 words per utterance. in counting 7 it increased by 0.07 words per utterance, decreased again in counts 8 and 9 of 0.06 words per utterance and 0.08 words per utterance then experienced a successive increase up to count 12 of 0.05 words per utterance, 0.09 words per utterance, and 0.02 words per utterance. Based on the results of subject 2's language acquisition from the range of 1.72 to 1.95 words per utterance, it shows that subject 2's language acquisition is still on par with children aged 2 years.

In the calculation results obtained by subject 3 in calculation 1 obtained an average word length of 1.72 words per utterance, decreased in count 2 of 0.08 words per utterance and experienced an increase in count 3 of 0.05 words per utterance. the decrease occurred in count 4 of 0.03 words per utterance and 0.10 words per utterance in count 5. The increase occurred in count 6 of 0.04 words per utterance and a decrease in count 7 of 0.16 words per utterance. in counting 8 there was an increase of 0.10 words per utterance and decreased respectively in counting 9 and counting 10 of 0.01 words per utterance and 0.03 words per utterance. in counting 11 it increased by 0.08 words per utterance and in counting 12 it decreased by 0.08 words per utterance. Based on the results of subject 3's language acquisition from the range of 1.54 to 1.72 words per utterance, it shows that subject 3's language acquisition is still on par with children aged 2 years. Fluctuations in the results of calculating the three subjects can also be seen in the following line chart:

Figure 1. Acquisition of the subject's language before giving a fairy tale stimulus



Source: Fluctuations in the results of calculating

Based on the diagram above, it can be seen that the results of calculating language acquisition in subject 1, subject 2, and subject 3 show unstable development. The ability to produce language in subject 2 has a higher calculation result than subject 1 and subject 3. This fluctuation indicates that the three subjects have very low ability to produce language because it is equivalent to children aged 1 or 2 years. This condition causes the three subjects to experience limitations in interacting with other people.

### **The Language Development of Autistic Children on the Acquisition of Syntax in Indonesia after Giving Fairy Tales Stimulus**

Language development after being given a story stimulus to the three subjects 12 times, and based on the results of calculating the *Mean Length of Utterance* from Brown's theory shows that the language development of the three subjects is different from the language development of the three subjects before being given the story stimulus (Murthado et al., 2021). This difference is that the development of language after being given a story stimulus has increased stably, although some of the 12 calculations show a decrease in the results of calculating syntactic production. The researcher explores the acquisition of these results as well as looking at the factors that are related to the increase or decrease in the syntactic production results on the subject. The following is the result of calculating syntactic production after the subject is given a fairy tale stimulus:

Table 3. The results of calculating all subjects after giving a fairy tale stimulus

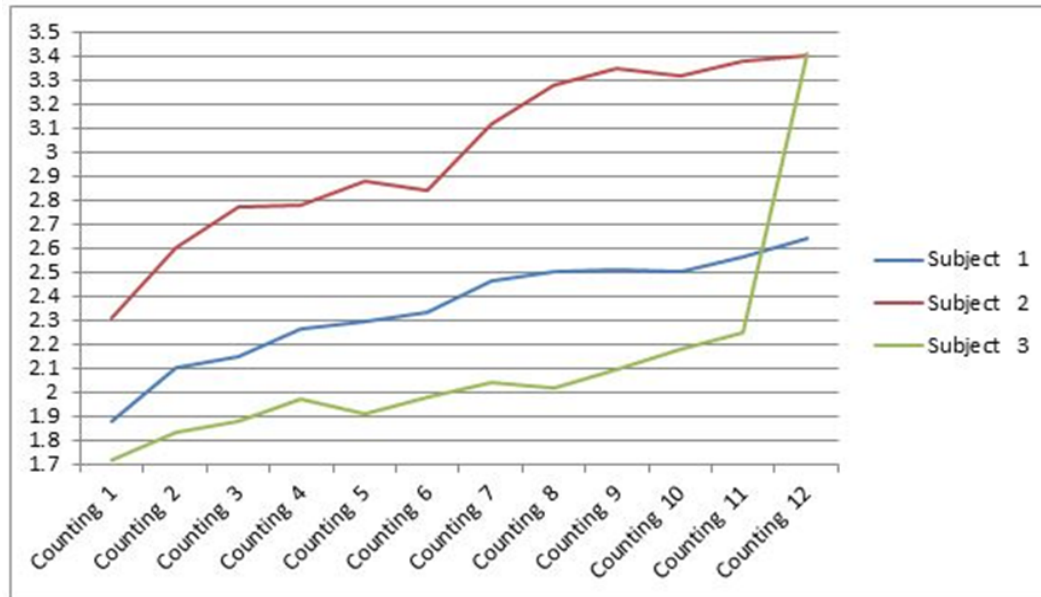
Counting	Subject 1	Subject 2	Subject 3
Counting 1	1.88	2.31	1.72
Counting 2	2.1	2.6	1.83
Counting 3	2.15	2.77	1.88
Counting 4	2.26	2.78	1.97
Counting 5	2.29	2.88	1.91
Counting 6	2.33	2.84	1.98
Counting 7	2.46	3.12	2.04
Counting 8	2.5	3.28	2.02
Counting 9	2.51	3.35	2.09
Counting 10	2.5	3.32	2.18
Counting 11	2.56	3.38	2.25
Counting 12	2.64	3.4	3.41

Source: processed the data from SPSS

Based on the results of these calculations, subject 1 experienced a significant increase. In subject 1, counting 1 to 9 has increased, but in counting 10, subject 1 has decreased by 0.01 words per utterance. Nevertheless. In the 11th and 12th counts, subject 1 again experienced an increase in syntax production. Similarly, subject 2 also experienced an increase in counts 1 to 12, and decreased in count 10 by 0.03 words per utterance, however, in counts 11 and count 12, subject 2 also experienced an increase again. In subject 3, the syntactic production calculated from count 1 to count 4 has increased, but in count 5, subject 3 has decreased by 0.06 words per utterance. In counting 6 and counting 7 subject 3 again experienced an increase, but in counting 8 subject 3 it decreased again by 0.02 words per utterance. Counting 9 to counting 12 subject 3 has increased again (Keumala & Idami, 2021). The most visible and comparable thing between language development before and after the provision of this fairy tale stimulus is that the results of each calculation which previously were not at all stable tended to increase even though there was a slight decrease (Kurniati et al., 2021). To find out for sure the cause of the decrease in the results of calculating syntactic production on the subject, the researcher examines in depth the factors that might occur.

As a comparison with the condition of the subject's language development before being given a fairy tale stimulus which seemed so fluctuating, the following line diagram can be seen relating to the subject's language development after being given a fairy tale stimulus:

Figure 2. Acquisition of the subject's language before giving a fairy tale stimulus



Source: Fluctuations in the results of calculating

Based on the existing diagrams, it can be seen that the graph of the subject's language development after being given a fairy tale stimulus has increased. The three lines that show each subject continue to move up in line with the results of calculating the syntactic production of the three subjects (Hapsari, 2020). The changes that occur between language development before being given a stimulus to the language development phase after being given a stimulus are also in line with the provision of treatment which is felt to be able to provide assistance and solutions for subjects as people with autism in the low level category to socialize and interact.

## DISCUSSION

### The language development of autistic children on the acquisition of syntax in Indonesia before giving fairy tales stimulus

Based on the results of calculating the average number of words, it is known that the three subjects have a low average number of words. Subject 1 aged 7 years or 84 months should have reached stage X with an average acquisition of more than 4.5 words per utterance. However, based on existing data, subject 1 can only produce an average number of words of 1.72 words per utterance, which is in stage II equivalent to children aged 22-27 months. Subject 2, aged 7 years 2 months or 86 months, should have reached stage X with an average acquisition of more than 4.5 words per utterance. However, based on existing data, subject 2 can only produce an average number of words of 1.95 words per utterance, which is in stage II equivalent to children aged 22-27 months. Furthermore, subject 3 aged 6 years 11 months or 83 months

should have reached stage X with an average acquisition of more than 4.5 words per utterance. However, based on existing data, subject 3 can only produce an average number of words of 1.72 words per utterance which is in stage II which is equivalent to children aged 22-27 months.

Children with ASD (*Autism Spectrum Disorder*) disorders experience language development disorders which refer to the limitations of autistic children in producing speech and carrying out social activities such as communicating with others. In accordance with research conducted by Blaskova & Gibson in 2021 which found that children with language disorders have difficulties in establishing relationships and communicating with peers, so that autistic children find it difficult to interact in order to build insight based on the child's age with other children. The results of this study can be interpreted that the factors that influence the failure to establish communication with peers are limited speech production, limitations in understanding the meaning of utterances, and children's inability to identify words conveyed by other people. In line with the data obtained through this study, the three subjects showed weaknesses in producing speech which resulted in these subjects having limitations in producing speech (Suryanita et al., 2020).

The limited ability to communicate with autistic children usually motivates autistic children to make gestures as communication gestures that support the speech delivered, so to be able to understand the meaning of the speech conveyed which is often expressed in the form of imperfect sentences the speech partner must also be able to understand the gesture conveyed by the child autism, this is in accordance with findings in a study conducted by Valle, Chenausky, & Flusberg in 2021 which stated that understanding communication in children with ASD (*Autism Spectrum Disorder*) disorders must be followed by understanding gestures or gestures of the child's gestures and vice versa , so that children with ASD (*Autism Spectrum Disorder*) disorders are able to understand the expressions meant by the speech partners, the speech partners must use signs (Sudarwati & Ningrum, 2022). The use of this sign is done as a means to help autistic children communicate and minimize communication errors between speakers, however , various efforts must be made to improve language skills, especially at the syntactic level for autistic children so that they can convey communication intentions in good basic sentence patterns.

The effort made to find out the development of language in language acquisition at the syntactic level through the provision of a stimulus in the form of fairy tales is to calculate the MLU (*Mean Length of Utterance*), so that if the fairy tale stimulus has been given it will be known periodically the progress of language acquisition through this stimulus, especially by



see the results of calculating the MLU (*Mean Length of Utterance*) after the subject gets the story stimulus (Fadilah Utami et al., 2022).

The main purpose of using the *Mean Length of Utterance* is to identify children who need evaluation of children's language development and abilities, to diagnose or identify language disorders experienced by children, to determine the stage or observe the level of language development and to measure changes in language production both before or after being given treatment (Feng, 2019). Based on the findings from this study, it can develop existing theories. This study found that calculating the average number of words using the *Mean Length of Utterance* can also be done to determine a child's ability to produce syntactic complexity as a form of linguistic intelligence in spoken language.

The findings in this study are in line with the findings of previous studies which found that children with autism spectrum disorders (ASD) have delays in language development, especially in vocabulary acquisition. Children with autism spectrum disorder (ASD) and intellectual disabilities reach 31% based on an autism diagnosis in the United States (Maenner et al., 2020). Another thing shows that children with autism spectrum disorders (ASD) experience weaknesses in the cognitive domain. Children with autism spectrum disorder (ASD) have minimal verbal ability to use communication skills with others, but to support the delivery of information they do, autistic children choose to use gestures, eye gaze, body language and facial expressions to express it. (La Valle et al., 2021). This limitation will lead to weak spoken language production abilities of children with autism spectrum disorder (ASD) so that it is necessary to improve decoding skills and linguistic comprehension skills (Astuti & Hidayat, 2018). The basic thing that determines the level of linguistic understanding skills other than lexical understanding is in the production of phonology, morphology, syntax, and semantics (Durrleman et al., 2022).

### **The Language Development of Autistic Children on the Acquisition of Syntax in Indonesia after Giving Fairy Tales Stimulus**

Providing a fairy tale stimulus to children with autism with limited communication skills aims to improve language skills. In accordance with research conducted by Fitriyani, Sumantri & Supena in 2019 found that children's language development is greatly influenced by the stimulus given, because providing stimulus can improve children's development optimally. Both in terms of language and in terms of cognitive intelligence, sensory, motor, and psychomotor. In line with research conducted by Hati & Pratiwi in 2019 which found that

providing stimulus in the form of certain habits instilled by parents has a good impact on children's motor and cognitive development, besides that providing stimulus can also improve children's mental development properly. Research on providing stimuli to improve children's language skills was also carried out by Pauls & Archibald in 2021 which found that narrative-based language interventions instill verbal skills in different ways according to children's needs.

Based on the results of existing research, the development of the three subjects' acquisition of syntax experienced a significant increase. The researcher deepened the factors that influenced the decrease in syntactic production which occurred once for 12 calculations in subject 1 and subject 2, and decreased twice in subject 3. The things that were clearly visible in the subject's response when the researcher and the teacher read stories that were lacking liked. On the 10th count, subject 1 was given a fairy tale stimulus of the fable type with the title *The Arrogant Squirrel*. In this story the researcher tells based on pictures in the book, in contrast to other fairy tales which have been given using teaching aids, the subjects in this session showed boredom and lack of interest (Durrleman et al., 2022). The researcher tries to explore further, it can be seen from the physical form of the book that does not attract the reader's attention in the presentation of colors that tend to be dark and less flashy, the presentation of images that are less varied, and the text that occupies more area of paper sheets than story pictures. Visual media stimulation given to children is very influential on children's interest in the story given, so that the subject is not so motivated to produce utterances when asked to interact about the fairy tale that is being heard. Another thing also happened to subject 2 which showed a decrease in the 10th count by giving a fairy tale stimulus entitled *The Tiger Was Deceived*. In this story, the researcher tells the story using props in the form of a tiger-shaped doll and several other supporting tools. The researcher explored again, the thing that made the subject less enthusiastic about the fairy tale that was being given was because the subject was experiencing mood swings, there were several obstacles that arose at home and carried them to school. This condition is closely related to disturbances that cannot be avoided and affects the psychological condition of the subject as a person with autism because overall there is nothing bad about the condition of telling fairy tales. Subject 3 also experienced a decrease in count 5 by giving tales about prophet stories from story books. The researcher gave a story entitled *The Story of the Prophet David AS and a Caterpillar*, in terms of the story book that was given visually it was much better than the story book that had been given to subject 1. However, this story used names that were difficult for the subject to remember, because it uses people's names and place names with Arabic designations. Things like this are less acceptable

to the subject because they feel foreign. The subject's limitations in memorizing these names became an obstacle for the subject in answering questions and difficulty remembering the names of characters and places in the story when retelling. Furthermore, subject 3 also experienced a decrease in the 8th count with folklore tales from the Sundanese, namely one of the tribes in Indonesia entitled *Sangkuriang and Mount Tangkuban Perahu*. In giving this fairy tale, the researcher presents a story book with an interesting visual, because it is a book with dominant pictures, bright colors, and little text. However, the subject found it difficult to accept the fairy tale because the storyline was considered difficult for a 7-year-old child with autism to accept. The story of Sangkuriang is a folklore that tells of a mother named *Dayang Sumbi* who asked her son *Sangkuriang* to stem a large river and build a large ship in the middle of it, but this did not materialize and angered the mother. Subject 3 didn't like this kind of plot. Subject 3's tendency to be interested in fairy tales with the fable type because it tells animal characters are easier for children to like (Durrleman et al., 2022).

Acquisition of children's language focuses on the complex relationship between the variations of language received and the resulting language production (Madueño Toribio, 2015), so that in the realm of language in children, especially spoken language, children do not necessarily reflect their linguistic abilities (Boucher & Lalonde, 2015), thus autistic children do not necessarily have low linguistic intelligence, but children have different categories and meanings of words in identifying syntactic properties in the production of these children's language. However, children with ASD (*Autism Spectrum Disorder*) disorders must be given a lot of input in the early stages of development, because it can have a major influence on the high return of language production throughout their lives (Keumala & Idami, 2021). So the researcher provides input in the form of a fairy tale stimulus to encourage autistic children to increase language production in linguistic settings in everyday life.

The findings in this study are in line with the existing discovery theory, namely optimizing child development can be done by providing a stimulus that is appropriate to their age. Storytelling stimulation can influence lexical-semantic and structural language intelligence related to children's ability to produce stories. This discovery about language development at the syntactic level of autistic children also strengthens the theory that has developed through research that has been done. One of them is the finding which states that children's oral language skills will develop from time to time as long as they get the appropriate stimulation.

## CONCLUSION

The findings from this study add to the growing body of evidence that the speech forms produced by children with autism spectrum disorder (ASD) are very limited. Before being given the fairy tale stimulus, the results of calculating syntactic production fluctuated 12 times, subject 1 had a syntactic production rate of 1.72 words per utterance, subject 2 had a syntactic production rate of 1.95 words per utterance, subject 3 had a syntactic production rate of 1.72 words per utterance. The language development of the three subjects after being given a fairy tale stimulus increased and tended to be stable at 12 counting times, subject 1 had a syntactic production rate of 2.64 words per utterance, subject 2 had a syntactic production rate of 3.40 words per utterance, and subject 3 had a syntactic production rate of 3.41 word for utterance. based on the fairy tale stimulus given, this type of fable is very appropriate and in great demand by children with mild category autism spectrum disorder (ASD).

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