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The Length of Utterances and Sentence Completeness in Preschool-Aged Children

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ABSTRACT

Mean Length Utterance (MLU) provides essential information about language development and indicates language delay or disorders. As a child's vocabulary increases, their language proficiency improves, resulting in a higher MLU score. It affects the completeness of their syntactic structures, allowing an assessment of their language development, particularly in the grammatical aspects of syntax and morphology. This research aims to determine the relationship between MLU and the overall completeness of syntactic structures, not just in terms of word patterns and units. It is a quantitative study using a cross-sectional method with a correlational approach. The sample consisted of 67 children in Surakarta, selected using random sampling techniques. The Pearson Product Moment correlation test results showed $\rho \leq 0.001$ which is <0.05, indicating that the alternative hypothesis (Ha) is accepted and the null hypothesis (H0) is rejected. There is a significant relationship between Mean Length Utterance (MLU) and the completeness of syntactic structures. The strength of this correlation is demonstrated by a correlation coefficient (r) = 0.732**, which indicates a strong and positive correlation.

Introduction

Language development is crucial for children as language enables them to understand words and sentences (Astuti & Istiarini, 2020). Language development is one of the fundamental skills children must acquire, consisting of several stages corresponding to their age and developmental characteristics (Munasih & Nurjaman, 2018).

Children's language performance reflects their language acquisition, including phonology, syntax, semantics, and pragmatics. Age, environment, and biological conditions influence this acquisition (Nasution, 2019). Children's language mastery is characterized by a progression from single-word utterances to complex word combinations. Language acquisition theory demonstrates how children's language evolves from an initial zero state to a stable state. Syntactic acquisition in children begins with smaller components before progressing to larger ones. They learn words, phrases, and then simple sentences with more complex word combinations, referred to as syntax (Lestari et al., 2023).

Language development at this stage is vital as it indicates a child's overall cognitive development, impacting their academic success. However, language development can involve several issues, including phonology, morphology, semantics, syntax, and pragmatics. It is estimated that 8-12% of preschool children experience language disorders (Safitri et al., 2021). Preschoolers are children between 2 and 6 years old (Dau, 2019).

The calculation of Mean Length Utterance (MLU), a theoretical measure of language ability, can assess children's language development. The method involves collecting spontaneous speech data or spontaneous conversations from children aged one to five years. This data is analyzed to determine the number of morphemes children know or have mastered. It obtains an index of children's language development (Nazriani, 2021). The formula for MLU can be used to determine the number of meaningful items in a child's spoken sentences (Nasution, 2022). MLU is calculated by comparing the number of morphemes to the child's utterances (Pratomo, 2022).

MLU provides essential information about language development and is a key indicator of language delays or disorders. It is also considered a valid and reliable index for general language development (Shipley & McAfee, 2021). As MLU increases, the complexity of a child's utterances also grows with age (Sholeha *et al.*, 2022).

Empirically, syntactic structures become increasingly complex as a child's MLU improves (Potratz *et al.*, 2022). In other words, children can use complete sentence elements, such as subjects, predicates, objects, and adverbs, to construct complex sentence structures. Mean Length of Utterance (MLU in words) is deemed significant and beneficial in evaluating children's language development. The formula for calculating MLU is the total number of words divided by the total number of utterances. Since the average utterance length affects the morphemes produced, MLU is a primary measure of children's general

language development. Consequently, the average utterance length directly influences a child's MLU (Rahmaningtyas & Pratomo, 2023).

Issues related to syntax are becoming more prominent, prompting extensive research on the subject. Zulfa & Setiawan (2021) Studied the Language Acquisition Analysis with MLU Calculation and Syntactic Aspect Studies of a 2.8-year-old Child. However, their study did not examine other age groups or address the completeness of sentence structures, also referred to as syntactic complexity, in other age groups. It highlights the need for further research on this topic. Additionally, previous studies have not specifically explored the completeness of sentence structures. Therefore, further research is needed to investigate the relationship between MLU and overall syntactic structure completeness beyond word patterns and units. Based on this explanation, the authors aim to study the relationship between MLU and sentence structure completeness in preschool children in Surakarta.

Methods

This research is fundamentally quantitative research utilizing a correlational approach. Data collection was conducted cross-sectionally for the independent variable (MLU) and the dependent variable (Sentence Structure Completeness). The cross-sectional approach in this study involves describing the relationship between two variables: the independent variable, Mean Length of Utterance (MLU), and the dependent variable, sentence structure completeness. The population of this study consists of children aged 2–6 years in Surakarta. The sample

was selected using a simple random sampling technique in 67 children.

The data analysis process involved collecting spontaneous language samples from children to measure both their MLU and the completeness of their syntactic structures. Spontaneous language samples were gathered by initiating conversations with children using questions designed to elicit responses. Free play activities also provided opportunities to collect spontaneous language samples, using children's play media and engaging in verbal interactions during play. Additionally, storytelling or describing pictures elicited natural child utterances as responses (Pratomo, 2024).

The research was conducted in Surakarta, targeting schools or community environments likely to include the study's population. The sample size consisted of 67 children. MLU is one of the measurements derived from language sampling (Shipley & McAfee, 2021). MLU is calculated by dividing the total number of words by the total number of utterances (Rahmaningtyas & Pratomo, 2023). A strong correlation exists between the Mean Length of Utterance (MLU) in morphemes and syntax, making it a reliable measure for assessing segment expansion and a sensitive indicator of the complexity of children's language (Rafiqa *et al*., 2019).

This research hypothesizes (Ha) that MLU influences the completeness of sentence structure in preschool children (aged 2–6 years) in Surakarta, and the null hypothesis (H0) posits that MLU has no influence on the completeness of sentence structure in this

population.

Results and Discussions

In the study conducted on children aged 2-6 years in Surakarta, involving a sample of 67 children, data on the frequency distribution of respondent characteristics based on age, utterances, MLU, and syntactic structure completeness are presented in the following frequency distribution table:

Table 1
Frequency Distribution of Respondents

Variable	N	*Mean*	*Std Dev.*	*Min*	*Max*	*95%CI*	
						lower	*upper*
Usia	67	52.16	12.60	29	71	49.09	55.24
Ujaran	67	83.04	37.93	29	204	73.79	92.30
MLU	67	3.1	1.27	1.2	6.10	2.79	3.41
Kelengkapan	67	10.51	8.34	0	32	8.47	12.54

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Based on the frequency distribution in Table 1, 67 children in Surakarta have an average individual age of 52.16, with a standard deviation of 12.60, a minimum of 29, and a maximum of 71. The lower and upper bounds of the age are 49.09 and 55.24, respectively, indicating that the odds ratio for age is between 49.09 and 55.24.

The utterances of 67 children in Surakarta have an average number of 83.04, with a standard deviation of 37.93, a minimum of 29, and a maximum of 204. The lower and upper bounds for utterances are 73.79 and 92.30, respectively, indicating that the odds ratio for utterances is between 73.79 and 92.30.

The Mean Length of Utterance (MLU) for 67 children in Surakarta has an average individual MLU of 3.1, with a standard deviation of 1.27, a minimum of 1.2, and a maximum of 6.10. The lower and upper bounds of MLU are 2.79 and 3.41, respectively, indicating that the odds ratio for MLU is between 2.79 and 3.41.

The syntactic structure completeness for 67 children in Surakarta has an average individual score of 10.51, with a standard deviation of 8.34, a minimum of 0, and a maximum of 32. The lower and upper bounds for syntactic structure completeness are 8.47 and 12.54, respectively, indicating that the odds ratio for syntactic structure completeness is between 8.47 and 12.54.

Table 2
Analysis of the Relationship Between MLU and Syntactic Structure Completeness

Variable	Syntactic Structure Completeness
MLU	(r) = 0.732** (ρ) = 0.000 n = 67

Based on Table 2, the results of the bivariate analysis show the score of $\rho \leq 0.001$, which is < 0.05 meaning that the alternative hypothesis (Ha) is accepted and the null hypothesis (H0) is rejected. It leads to the

conclusion that there is a relationship between the mean length of utterance (MLU) and the completeness of syntactic structure. The strength of this correlation is shown by the correlation coefficient (r) = 0.732**, indicating a strong positive correlation.

MLU is closely related to age, and MLU increases with age. As a child's MLU increases, the sentence constructions they produce also become more complex over time (Sholeha *et al.*, 2022). Among the 67 child samples, the lowest number of utterances was 29, with an MLU score of 1.2, while the highest number of utterances was 204, with an MLU score of 6.1. Empirically, syntactic forms become more complex as a child's MLU increases (Potratz *et al.*, 2022). Thus, the higher the type of clause used, the higher the mean length of utterance (MLU) and the morphemes used. An increase in vocabulary as a child ages is one sign of good language development (Rahmaningtyas & Pratomo, 2023).

The average length of utterance (MLU in words) is important and helpful in understanding a child's language development. The formula for calculating MLU is the number of words divided by the number of utterances. Since the average length of utterance affects the morphemes spoken, MLU is a key component in measuring overall language development in children. Thus, a child's MLU is directly influenced by the average length of utterance (Rahmaningtyas & Pratomo, 2023). MLU provides important information about language development and is one indicator of language delay or disorder. MLU is also considered a valid and reliable index for general language development (Shipley &

McAfee, 2021).

As a child's language skills improve, their speaking abilities will also increase, and they will use more complex syntactic structures when speaking, making it easier for them to communicate with others. An increase in utterance length can also indicate the child's language development, including their syntactic skills. A child's mastery of language is positively correlated with their MLU. The complexity of a child's syntax is directly related to the MLU continuum; the more complex the syntax, the higher the MLU continuum, whereas the less complex the syntax, the shorter the MLU continuum (Rafiqa et al., 2019). Although age and vocabulary significantly contribute to the MLU score, vocabulary contributes more, indicating that a more extensive vocabulary provides a better foundation for grammatical development. Since grammar consists of morphology and syntax, grammatical ability can show the development of morphological skills, as evidenced by the number of morphemes used. A child's syntactic ability develops over time, approaching the complexity of adult ability (Rahmaningtyas & Pratomo, 2023). There is a strong correlation between MLU results and the child's expressive vocabulary: the more diverse the child's vocabulary, the more complex their sentence structure. Speech consists of various words, and children's functional vocabulary affects the length and complexity of the utterances made by each child (Ezeizabarrena & Fernandez, 2018).

Conclusion

Based on the results of the study and discussion, it can be concluded that the Mean Length of Utterance (MLU) of 67 children in Surakarta, with an average individual MLU of 3.1, a standard deviation of 1.27, a minimum score of 1.2, and a maximum score of 6.10, has a lower age boundary of 2.79 and an upper age boundary of 3.41, indicating that the odds ratio for age falls between 2.79 and 3.41. The ability to complete syntactic structures of the 67 children in Surakarta, with an average individual syntactic structure completion score of 10.51, a standard deviation of 8.34, a minimum score of 0, and a maximum score of 32, has a lower age boundary of 8.47 and an upper age boundary of 12.54, indicating that the odds ratio for age falls between 8.47 and 12.54. The Pearson Product Moment correlation result shows that the score of $\rho \leq 0.001$ ($\rho < 0.05$), meaning the alternative hypothesis (Ha) is accepted, and the null hypothesis (H0) is rejected. It indicates a relationship between Mean Length of Utterance (MLU) and Syntactic Structure in Surakarta children aged 2-6 years. The correlation coefficient / r is 0.732**, indicating a strong positive correlation. It means that the higher the MLU score of a child, the more complete the child's syntactic structure becomes.

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