

# The Effectiveness of the Expansions Method in Improving Mean Length of Utterance (MLU) in Children with Communication Disorders

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## Abstrak

Salah satu permasalahan yang dialami oleh anak dengan gangguan komunikasi adalah gangguan bahasa. Indikator penting dalam perkembangan bahasa anak salah satunya adalah *Mean length of utterance* (MLU) yang mengukur rata-rata ujaran anak. Ada berbagai metode yang dapat dilakukan untuk meningkatkan panjang ujaran, diantaranya adalah metode *expansions*. Penelitian ini bertujuan untuk melihat efektivitas metode *expansions* dalam meningkatkan MLU pada anak dengan gangguan komunikasi di SLBN Surakarta. Penelitian ini merupakan penelitian kuantitatif dengan desain penelitian eksperimental menggunakan *one group pre-test post-test*, sebanyak 8 siswa ( $n=8$ ) dengan 8 kali perlakuan dan analisis data menggunakan uji normalitas *Shapiro-Wilk* dan uji statistik *Paired T-Test*. Diperoleh nilai  $p$  (sig.) sebesar 0,013 ( $p < 0,05$ ), yang menunjukkan bahwa terdapat perbedaan yang signifikan antara skor MLU sebelum dan sesudah pemberian perlakuan metode *expansions*. Dengan demikian, hasil penelitian ini mengindikasikan bahwa penerapan metode *expansions* berpotensi memberikan pengaruh positif terhadap peningkatan MLU pada anak dengan gangguan komunikasi di SLBN Surakarta.

**Kata Kunci:** *Gangguan Komunikasi, Mean Length of Utterance, Metode Expansions*

## Abstract

One of the problems experienced by children with communication disorders is language disorders. An important indicator in a child's language development is Mean length of utterance (MLU), which measures the average length of a child's utterances. There are various techniques or methods that can be used to increase the length of utterances, including the expansions method. This study aims to examine the effectiveness of the expansions method in improving MLU in children with communication disorders at SLBN Surakarta. This is a quantitative study with an experimental research design using a one-group pre-test post-test, involving 8 students ( $n=8$ ) with 8 treatments and data analysis using the Shapiro-Wilk normality test and the Paired T-Test statistical test. A  $p$ -value (sig.) of 0.013 ( $p < 0.05$ ) was obtained, indicating a significant difference between MLU scores before and after the application of the expansions method. Thus, the results of this study indicate that the application of the expansions method has the potential to positively influence MLU improvement in children with communication disorders at SLBN Surakarta.

**Keyword:** *Communication Disorders, Expansions Method, Mean Length of Utterance*

## Article info

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## INTRODUCTION

Communication disorders, which include conditions such as speech delay, difficulty understanding language, and articulation problems, can impact a child's ability to interact with their environment. The inability to interpret context or environment appropriately can also cause problems

in communication and pragmatic language use (Uyu Mua'wwanah, 2021). Congenital or acquired communication disorders in childhood can cause poor emotional, social, and academic abilities in children. Research has reported that children who attend school are at higher risk of developing communication disorders that will affect their academic and other skills (Ravi et al., 2021).

One important parameter in determining a child's language development is Mean length of utterance (MLU), is the average number of morphemes produced by a person in a single utterance (Erfriani Sekar Talenta Simangunsong et al., 2025). Calculating the average length of utterances is very important because it helps ensure that a child's language development is appropriate for their age. We can prevent speech delays and ensure that children speak at a level appropriate for their age by monitoring MLU (E. Y. Siagian et al., 2025). For example, an 8-year-old student only produces 2-3 words such as "want to eat," whereas the normal MLU for their age is 5-6 morphemes/utterances.

In the development of children's language skills, there are various techniques that need to be done, including the expansions technique. The language expansions technique has been widely studied as a method to increase Mean length of utterance (MLU) in children with language disorders. Language expansions are strategies used in language therapy to encourage children to produce longer and more complex sentences. This involves therapists in an effort to expand children's utterances, adding additional words or phrases to make sentences more complete. Several studies have shown the effectiveness of language expansions techniques in increasing MLU in children with language disorders. One example, a meta-analysis of language therapy for cases developmental language disorder (DLD), found that language therapy alone resulted in a significant increase in MLU, with a standardized mean difference (SMD) of 2.16 and a 95% confidence interval (CI) of 0.39-3.93 (Fan et al., 2022). This indicates that language expansions, as part of a broader speech therapy program, can be effective in increasing speech length in children with DLD.

In practice, the expansions method has been proven effective in various contexts. Research by Smith et al., (2023) shows that responsive parental behavior in the form of expansions contributes to improved language skills in preschool children with autism at a five-month follow-up. These findings confirm that expanding children's utterances by adding developmentally appropriate linguistic elements can support language skill growth, including aspects of utterance length and complexity. However, the study focused on preschool-aged children in the context of parent and child interactions, leaving gaps in research on older age groups and formal educational settings. In particular, the application of the expansions method to adolescents aged 13-16 years in special education settings such as SLBN Surakarta with eight sessions has not been widely explored. Therefore, it is necessary to examine the effectiveness of the expansions method in increasing MLU in children at SLBN Surakarta aged 13-16 years with eight intervention sessions. Furthermore, it is hoped that the results of this study can contribute to the development of more effective speech therapy methods tailored to the needs of children with communication disorders.

Based on data obtained from the Kementerian Pendidikan Kebudayaan Riset dan Teknologi (KEMENDIKBUDRISTEK), the population of students with special needs (ABK) in Indonesia reached 245.350 people in April 2025 (Kadim & Hendriani, 2025), most of whom had developmental disorders, including communication disorders. UNICEF predicts that around 240 million children of the total world's child population are ABK (Mahadewi & Mustikawati, 2023). Based on data from Dinas Pendidikan Kota Surakarta, the number of students with disabilities in the city of Surakarta was 684 people in 2026 (SIDAYANIK, 2026). This high prevalence indicates the importance of serious attention and appropriate intervention to support the language and communication development of these children.

With this background, this study will discuss in depth the effectiveness of the expansions method in improving the MLU of children with communication disorders at the Surakarta Special School, as well as the implications of these findings for future speech therapy practices.

## METHOD

This study used an experimental research design, namely One Group Pretest-Posttest. One Group Pretest-Posttest is a study that only uses one group for research, meaning that there is no control group, where the group is measured (pretest) before treatment and then measured again

(posttest) so that the results of the treatment can be determined more accurately because they can be compared with the situation before the treatment was given (Hardani et al., 2020).

The population in this study was all students at SLBN Surakarta. The sample in this study consisted of students at SLBN Surakarta aged 13-16 years who had communication disorders and met the specified criteria. The sample in this study consisted of 8 students using purposive sampling technique which is a technique for determining samples based on specific considerations (Aiman et al., 2022), with 1 respondent aged 13 years, 1 respondent aged 14 years, 4 respondents aged 15 years, and 2 respondents aged 16 years. The sample inclusion criteria in this study were as follows: Children with communication disorders aged 13-16 years; Children with communication disorders who had problems with phrases or sentences; Children with communication disorders who understood commands; Children with communication disorders who have an IQ of at least 70 or borderline, and the following exclusion criteria: Parents or guardians who did not agree to sign the informed consent form; Children with high-risk disorders; Children who cannot communicate using expressive language at the word level; Children who cannot perform any activities without feeling comfortable.

This study used two instruments, namely language sampling and expansions method module. Language sampling was conducted by collecting 50 utterances by recording children's speech using open-ended questions. Once the recording was complete, the data was compiled by transcribing the 50 utterances and counting the number of bound and free morphemes in each utterance. The following formula was then used to calculate the MLU (Fitri & Setiawan, 2024):

$$MLU = \frac{\text{Number of morphemes}}{\text{Number of utterances}}$$

Next, an analysis was conducted to review the level of the child's syntactic progress, as well as the types of words and sentence structures they had mastered (A. S. B. Siagian et al., 2025). The expansions method module is a structured tool designed to guide the systematic implementation and application of the expansions therapy method in a research context. The aim is to ensure consistency in the application of the method, facilitate replication, and serve as a reference for researchers or therapists during the intervention process and the expansions method is carried out by extending the child's utterance without changing its core meaning. For example, if a child says "cow," the response would be "cows eat grass" (Pratomo, 2022). The data was collected from October to November 2025 by administering two tests (before and after treatment) with a treatment frequency of eight sessions (Lindsey, 2021) with a therapy frequency of twice a week and each session lasting 30-45 minutes. Data analysis used in this study is univariate using descriptive statistics with frequency distribution test results, bivariate using Paired T-Test with significance level of 0.05 (5%) and Shapiro-Wilk normality test with a significance level greater than (0.05) (Ma'rifah et al., 2020).

This research has been Ethical Clearance with number KEPK/UMP/180/VIII/2025.

## RESULT AND DISCUSSION

### An overview of the expansions method at SLBN Surakarta

Based on the results in table 1, it was found that there was an improvement or effect from the application of the expansions method. This can be seen from the MLU calculation results used to measure the expansions method at SLBN Surakarta, the expansions method itself is a technique to encourage children who are already able to speak at the word level to develop their language skills to the sentence level. This method was applied in 8 meetings with 10 stimuli given. The 10 stimuli given had different materials after 2 sessions. This was done so that the respondents would not memorize but could generalize the implementation of the method. The treatment was applied face-to-face in the classroom of each respondent, one by one to each child.

According to Lindsey, (2021) the expansions method intervention was carried out gradually through natural communication activities in the classroom, where each respondent's utterance was responded to by the researcher by expanding the sentence structure without changing the core meaning of the respondent's utterance.

## An overview of Mean Length of Utterance (MLU) in children with communication disorders at SLBN Surakarta

**Table 1. Mean length of utterance (MLU) value before and after treatment**

| Frequency | Pre-test | Post-test |
|-----------|----------|-----------|
| 1         | 2,44     | 2,46      |
| 1         | 3,28     | 3,4       |
| 1         | 3,62     | 4         |
| 1         | 3,96     | 4,06      |
| 1         | 6        | 6,92      |
| 1         | 7        | 8         |
| 1         | 8        | 8,4       |
| 1         | 8        | 9         |
| Mean      | 5,28     | 5,78      |

Source: Results by Researches, 2025

Based on the analysis of the data conducted, several important points can be identified that before being given treatment by applying the expansions method to see whether there was an increase in the Mean length of utterance (MLU) calculation results or not, respondents underwent a pretest to assess their initial abilities or length of utterance. The result of the Mean length of utterance (MLU) measurement results before applying the expansions method from 8 respondents had a lowest score of 2.44 and a highest score of 8. After the treatment was given, a post-test was conducted to see the final ability or length of utterance of the respondents after being given treatment by applying the expansions method for 8 sessions. Judging from the Mean Length of Utterance (MLU) measurement results before applying the expansions method from 8 respondents, the results show that the lowest score of 2.46 and a highest score of 9.

These results are in line with Pratomo, (2022) opinion regarding the purpose of applying the expansions method, which is to improve children's ability to produce and understand language and utterance length, including increasing the Mean length of utterance (MLU) from the word level to simple phrases and even more complex sentence production.

### The effectiveness of the expansions method in improving Mean Length of Utterance (MLU) in children with communication disorders at SLBN Surakarta

Research with ratio-scale data must conduct normality tests to determine whether the pretest and posttest data from each group are normally distributed or not (Trismawati et al., 2025). In this research, the normality test was conducted using Shapiro-Wilk because this study had 8 child respondents, meaning that the sample size was less than 50 respondents.

**Table 3. Test Results Shapiro-Wilk**

|   | Shapiro-Wilk |    |      | Description               |
|---|--------------|----|------|---------------------------|
|   | Statistic    | df | Sig. |                           |
| Pretest<br>Mean Length Utterance (MLU)  | .889         | 8  | .228 | Normally distributed data |
| Posttest<br>Mean Length Utterance (MLU) | .885         | 8  | .212 | Normally distributed data |

Source: Results by Researches, 2025

**Table 4. Test Results Paired T-Test**

| Variable  | Mean | Standard Deviation | 95% Confidence Interval of the Difference |         | t     | df | P value |
|---|------|--------------------|---|---------|-------|----|---------|
|   |      |                    | Lower                                     | Upper   |       |    |         |
| Mean length of utterance (MLU) before treatment | 5.28 | 0,42006            | -,84368                                   | -,14132 | 3,316 | 7  | 0,013   |
| Mean length of utterance (MLU) after treatment  | 5.78 |                    |   |         |       |    |         |

Source: Results by Researches, 2025

The average pretest and posttest results show that there was an increase in Mean length of utterance (MLU) scores in children with communication disorders at SLBN Surakarta from 5.28 to 5.78, with a difference of 0.50. If the  $p$  value is  $<0.05$ , the data shows that there is a correlation between the two variables, whereas if the  $p$  value is  $>0.05$ , the data indicates that there is no correlation between the two variables. Referring to the results of the data analysis above, the Paired T -Test shows a  $p$  (sig) value of 0.013, which means that  $p < 0.05$ . The results of the analysis show that the increase in MLU from before to after the intervention had a large effect size (Cohen's  $d = 1.19$ ). The 95% confidence interval for the mean difference ( $-0.843$  to  $-0.1413$ ) did not cross zero, indicating that the increase was statistically consistent and had strong practical significance. Substantively, these findings indicate that the expansions method intervention has a practically significant impact on increasing participants' utterance length. Therefore, this study shows that the expansions method is effective in increasing the Mean length of utterance (MLU) in children with communication disorders at SLBN Surakarta.

According to Smith et al., (2023) language development is influenced by many factors, not just one intervention technique. In Smith et al., (2023) research, the interventions used were expansions and imitations. Based on the results obtained, both methods did contribute to improving language skills, but their effects worked gradually and complemented the children's initial abilities and the quality of language input from their interlocutors, namely their parents. Therefore, the effects of both methods show that they have a real and meaningful practical impact, even though the changes that occur are not drastic in the short term. So that intervention using the expansions method can be an effective strategy to improve MLU, communication skills, and language skills in preschool children with language delays.

According to Geffen, (2018) interventions using the expansions method can improve the speaking skills of children diagnosed with language delay. Children who received interventions using the expansions method showed an increase in their ability to use longer and more complex sentences, and the results of the study also revealed that interventions using the expansions method can improve the communication skills of children diagnosed with language delay.

Although the duration of the intervention in this study was relatively short, the results of the analysis showed positive developments in MLU scores. These findings need to be understood in light of developmental factors, as the research subjects were adolescents with different types and levels of communication disorders. The subjects were also more cognitively mature, had better attention and comprehension capacities, and were accustomed to more structured and formal learning in the classroom compared to preschoolers (Zega & Suprihati, 2021). This condition can accelerate understanding of speech expansions patterns, but at the same time makes the changes that occur more adaptive to academic demands than spontaneous changes in naturalistic communication.

On the other hand, the limited duration of the intervention was not sufficient to answer questions about the sustainability of the effects in the long term, so that the observed improvement is more appropriately viewed as an indication of an initial response to the treatment. The long-term sustainability of the effects of the relatively short intervention in this study cannot be definitively ascertained. The results show an increase in MLU scores after the intervention, indicating an initial

positive response to the expansions method. However, because the measurements were taken over a limited period of time without follow-up, these findings reflect short-term or immediate effects rather than sustained impacts.

In contrast, in the study Smith et al., (2023) the effects of expansions and especially imitations were analyzed in a longitudinal framework with a follow-up of approximately five months. The results show that parental responsive behavior predicts children's language development in the subsequent period, which indicates a contribution to more stable language growth in the medium term. This suggests that the sustainability of effects is more likely to occur when strategies are applied consistently in daily interactions and over a longer period of time.

Meanwhile, in the study Geffen, (2018), expansion-based interventions also emphasize the importance of intensity, consistency, and involvement of the communication environment in maintaining children's language progress. These findings indicate that longer duration and sustained practice are key factors in maintaining the stability of language skill improvement.

Nevertheless, the findings of this study should be interpreted with caution given several key limitations. First, the small sample size limits the generalizability of the results. Second, the use of purposive sampling techniques has the potential to introduce selection bias. Third, the absence of a control group makes the attribution of MLU changes entirely to the intervention less causally robust. Fourth, the lack of follow-up assessments hinders the evaluation of the stability and sustainability of the impact in the long term.

Considering these factors, the results of this study are best understood as preliminary evidence regarding the potential effectiveness of the expansion method, which still requires further testing through stronger and longitudinal research designs.

## CONCLUSION

Based on the results of Mean Length of Utterance (MLU) measurements before and after treatment, the average length of children's utterances increased from 5.28 to 5.78 after the application of the expansions method. Statistical analysis showed a significant difference between the pre and post-test conditions. These findings indicate that the application of the expansion method has a positive effect on increasing MLU in children with communication disorders at SLBN Surakarta. Thus, the expansions method can be considered as an intervention approach that has the potential to support the development of children's utterance length, although the interpretation of the results still needs to take into account the context and limitations of the study. The results of this study are expected to serve as a reference for future researchers by specifying the cases or disorders experienced by respondents or targeting ages younger than those in this study, conducting longer intervention sessions, or using larger samples to accurately and precisely determine the development of Mean Length of Utterance (MLU) abilities.

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