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The effect of drill method on improving vocabulary mastery in children with intellectual disability

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Abstract

Background: Children with Intellectual Disability experience limitations in cognitive and language abilities, including vocabulary mastery. The drill method, which emphasizes structured repetition, is considered effective for improving memory retention and vocabulary acquisition.

Purpose: This study aims to determine the effect of the drill method on improving vocabulary mastery in children with Intellectual Disability in Klaten Regency.

Method: The study used a quantitative approach with one group pretest-posttest design. The sample consisted of 15 children with Intellectual Disability aged 7-12 years selected through purposive sampling. The instrument used was the Expressive One-Word Picture Vocabulary Test (EOWPVT). The drill method intervention was conducted in 10 sessions, each lasting 45 minutes, using flashcard media.

Results: The Wilcoxon Matched Pairs Test showed an Asymp. Sig. (2-tailed) value of 0,001 ($p < 0.05$), indicating a significant improvement in vocabulary mastery after the intervention. The mean pretest score of 60,60 increased to 72.33 in the posttest.

Conclusion: The drill method has significant effect on improving vocabulary mastery in children with Intellectual Disability in Klaten Regency.

Keywords: Drill Method; Intellectual Disability; Klaten Regency; Vocabulary Mastery.

INTRODUCTION

Language is a fundamental tool in human communication, functioning as a symbolic system that enables the exchange of ideas, knowledge, and the strengthening of social bonds (Darwin, Anwar, & Munir, 2021). Language is a complex, structured, dynamic system that functions as a tool for thinking and communication in various forms of expression (Sudarman, 2018). It is important to distinguish between language and speech; where speech is the skill of producing sounds, language encompasses the entire system for conveying and understanding information through words, phrases, clauses, and sentences (Badan Pengembangan dan Pembinaan Dasar, 2025). Vocabulary mastery is a crucial component in language development, whereby individuals with limited vocabulary will experience difficulties in communicating

effectively (Nurjannah, 2019). Language skills consist of receptive (comprehension) and expressive (communication) aspects, both of which can be impaired in individuals with intellectual disabilities (Sudarman, 2018).

Intellectual Disability is a developmental disorder characterized by significant impairments in intellectual functioning and adaptive behavior that emerge during the developmental period (Marrus & Hall, 2017). The American Association on Intellectual Disability defines Intellectual Disability as a developmental disorder with deficits in intellectual functioning and adaptive abilities that include conceptual, social, and practical skills (Paul, Norbury, & Gosse, 2018). The global prevalence of Intellectual Disability is estimated to be 1% of the population, with variations based on age and

geographical factors (American Psychiatric Association, 2021). Data in Indonesia shows that the population with disabilities reaches 8.5% of the total population, which includes individuals with intellectual disability (Kementerian Koordinator Bidang Pembangunan Manusia dan Kebudayaan, 2023).

Children with intellectual disabilities are highly vulnerable to language and speech disorders, manifested in significant vocabulary limitations (Memisevic & Hadzic, 2013). Previous studies show that children with intellectual disabilities generally have difficulty describing topics or sequences of events and use limited everyday language with simple sentence structures due to their limited vocabulary (Prihatin, Tirtawati, & Dewi, 2022). This condition also affects verbal and written communication. Good vocabulary mastery is a key foundation in children's language development, so children with language impairments need intervention to support their communication skills (Nation, 2006).

Based on these issues, early intervention is essential to support the communication development of children with intellectual disabilities (Kurniawati, 2015). One intervention method in speech therapy is the drill method. The drill method emphasizes structured repetition and intensive practice to strengthen specific skills. The drill method is an approach that strongly emphasizes repetition of activities to achieve new targets in the form of new behaviors (Rosalina & Pratomo, 2022). The drill method emphasizes systematic repetition to form strong associations and develop skills in order to achieve a permanent level of proficiency (Fahrurrozi, Sari, & Shalma, 2022). The drill method involves providing controlled stimuli, prompts (assistance), and systematic reinforcement to form the desired response (Paul et al., 2018).

RESEARCH METHOD

This study was designed using a quantitative approach and a one-group pretest-posttest design. This design was chosen to identify the impact of the drill method intervention by comparing the vocabulary mastery levels of the sample group before (O1) and after (O2) the treatment (X) was given.

The population in this study consisted of 114 children at SLB CC1 Shanti Yoga, Klaten Regency. From this population, 15 children were selected as samples using purposive sampling, which allowed the researcher to select subjects based on specific characteristics that were in line with the research objectives. The selection of

this sample size refers to the opinion (Nursalam, 2020) which states that for simple experimental research with strict controls, a sample size of between 10 and 20 subjects is considered adequate.

Sample selection criteria (inclusion criteria) were strictly defined to ensure the homogeneity and suitability of subjects for the research objectives. Based on the established inclusion criteria, the research subjects were children with intellectual disabilities who were willing to participate through informed consent from their parents/guardians, had a confirmed diagnosis of intellectual disability through IQ testing, were between the ages of 7 and 12, and resided in the Klaten Regency. In addition, exclusion criteria are also applied to maintain data integrity, whereby subjects who have not undergone IQ testing, withdraw in the middle of the research process, or do not complete the entire series of therapies specified will be excluded from this study.

This research was conducted in Klaten Regency over a period of seven months (March to September 2025), covering the stages of preliminary study, proposal preparation, data collection, data processing, and final report preparation. There were two main variables in this study, namely the independent variable, which was the drill method intervention, and the dependent variable, which was vocabulary mastery. The drill method was defined as the repeated provision of stimuli using a guide module to form permanent skills, while vocabulary mastery was defined as the ability of children to name objects, activities, or concepts in a picture.

The research instruments used consisted of two parts. First, a drill method module developed by the researcher based on guidelines from the book *Language Disorders from Infancy Through Adolescence* (Paul et al., 2018). Second, the Expressive One-Word Picture Vocabulary Test (EOWPVT) instrument by Gardner (1979), which is a standardized norm-referenced test tool for evaluating children's expressive abilities. The Expressive One-Word Picture Vocabulary Test (Gardner, 1979) has been tested for validity (coefficient 0.941-0.925) and reliability (Cronbach's Alpha 0.741) and is therefore deemed suitable for use.

The data collection procedure began with an ethical permission request, followed by sample selection based on criteria, then the implementation of a pretest using the EOWPVT instrument. Next, the drill method intervention was applied and ended with the implementation of a posttest using the same instrument. The collected data were analyzed statistically using two approaches.

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Univariate analysis was used to describe the characteristics of the data (mean, standard deviation, frequency distribution) from the pretest and posttest results. Next, bivariate analysis was performed using the Wilcoxon Matched Pairs Test to test the significance of the difference or increase in vocabulary mastery scores before and after the intervention, considering that the data produced was on an ordinal scale and came from a paired sample.

All stages of this study were conducted in accordance with research ethics principles, including respect for autonomy (with informed consent), promotion of justice (fairness in the distribution of benefits and risks), ensuring beneficence (ensuring the benefits of research), and ensuring non-maleficence (avoiding harmful effects by guaranteeing the anonymity and confidentiality of subject data).

RESEARCH RESULTS

Table 1. Frequency Distribution of Respondents (N=15)

Variables	Frequency
Age (Mean±SD) (Range) (Year)	(9.29±1.490) (7-12)
7-8	5/33.3
9-10	7/46.7
11-12	3/20.0
Gender (n/%)	
Man	5/33.3
Woman	10/66.7

Table 1. shows that the average age and standard deviation are (9.29±1.490) with an age range of 7-12, and the majority of respondents are female, with a total of 10 (66.7%).

Table 3. Comparison of Pretest and Posttest Scores

Results	Minimum	Maximum	Mean	Std. Deviation
<i>Pretest</i>	47	59	60.60	8.069
<i>Posttest</i>	71	82	72.33	8.278

Table 2 shows the results of the pretest and posttest measurements. The pretest results show that all respondents were in the Low category with an average score of 60.60. After the intervention with the drill method for 10 sessions, there was a significant increase, namely the average posttest score became 72.33 with 93.3% of respondents moving to the Below Average category.

Table 3. Results of Wilcoxon Matched Pairs Test

	Mean Rank	Sum of Rank
Posttest-Pretest		
Negative Ranks	0.00	0.00
Positive Ranks	8.00	120.00
Ties		

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The Wilcoxon Matched Pairs test shows that all respondents experienced an increase in scores (positive ranks). None of the subjects experienced a decrease in scores (negative ranks) or remained at the same score (ties).

Table 4. Significance Results of the Drill Method Effect

	Post Test-Pre Test
Z	-3.428
Asymp. Sig. (2-tailed)	<.001

Table 4. shows a significance value (2-tailed) of 0.001. Because this significance value is smaller than the alpha level of 0.05 ($p < 0.05$), H_0 is rejected, and H_a is accepted.

DISCUSSION

The findings of this study provide strong empirical evidence that the drill method is effective in improving vocabulary mastery in children with Intellectual Disability. The average increase of 11.73 points is not only statistically significant but also practically meaningful in the context of special education, as it shows a categorical leap from Low to Below Average in most subjects.

The success of this intervention can be explained through several theoretical perspectives. First, theoretically, this finding supports the Skill Acquisition Theory. The structured and repetitive drill method facilitates the transformation of declarative knowledge (knowing a word) into procedural knowledge (being able to use the word automatically). Consistent repetition in each drill session serves as a mechanism for achieving automatization, which is very important for children with Intellectual Disability who often experience barriers in short-term memory and information processing (DeKeyser, 2007).

Second, these findings are consistent with previous studies reporting a significant increase in students' vocabulary mastery through the drill technique (Terasne & Hafiz, 2022). Similarly, other studies have specifically found the effectiveness of the same method in children with Down syndrome (Ramadhani, Putra, & Sudarman, 2025). The consistency of these findings reinforces the generalization that the drill method is an adaptive and inclusive approach for children with various developmental barriers.

Third, the role of the learning media used, namely flashcards, cannot be ignored. This visual medium is very suitable for visual learning styles, which are often more dominant in children with intellectual disabilities. Previous research revealed in their systematic review confirmed that visual memory plays a key role in vocabulary development. The combination of auditory repetition

(through verbal instruction) and visual stimulation (through images on flashcards) creates a dual multisensory learning pathway that strengthens long-term memory encoding (Pickering, Peters, & Crewther, 2023).

In addition, this study is supported by other findings that report similar success using the drill method combined with visual media such as scrapbooks and physical approaches. This shows that the effectiveness of the drill method can be said to be robust in various environments and media (Rohani & Ahmad, 2018); (Henny et al., 2024).

CONCLUSION

The success of this intervention can be attributed to several key factors. First, the regular and intensive repetition structure in the drill method succeeded in strengthening long-term memory consolidation and promoting the achievement of automatization in vocabulary recall, aligning with the principles of Skill Acquisition Theory. Second, the use of concrete and attractive visual media (flashcards) effectively utilizes the visual learning modality that is often more dominant in children with Intellectual Disability, thereby strengthening information encoding. Third, the consistent and structured learning environment created by this method helps in focusing attention and reducing learning anxiety in children. Thus, the drill method is proven to be an inclusive, adaptive, and effective learning approach for the population of children with cognitive barriers. These findings are consistent with various previous studies, indicating that the effectiveness of this method is robust or solid, both when applied in different settings and by using variations of learning media.

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