A Meta-Analysis of Word Walls' Effectiveness in Improving English Vocabulary Among Junior High School Students.

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Abstract

Language plays a crucial role in interpersonal communication, especially in social situations. To communicate effectively, learners need to expand their vocabulary, as vocabulary is the foundation for the four language skills of listening, speaking, reading, and writing. Teaching English as a foreign language can be challenging, especially when it comes to teaching vocabulary, and thus, the teacher needs to find ways to make the learning process more engaging. This study is a meta-analysis that utilizes a literature review to examine the effectiveness of using the Word Wall in enhancing students' English vocabulary. The sample consists of English foreign language learners who used the Word Wall, predominantly from Junior High School levels. The researcher utilized effect size calculation, based on various journal articles and research studies, to determine the effectiveness of the Word Wall strategy. The results of this study, derived from the discussion and conclusion, suggest that the use of the Word Wall has a significant effect in improving English vocabulary, particularly among Junior High School students. Effect sizes, calculated from multiple studies across different regions such as Bandar Lampung, Purworejo, Jakarta, Bandung, Tarakan, and Jakarta, indicate substantial improvements in vocabulary outcomes. Specifically, the Word Wall strategy demonstrated effect sizes of 1.183 and 1.18 at Junior High School and High School levels respectively, with an overall effect size of 3.0 across various regions in Indonesia.

Keywords: *Vocabulary, Word Wall learning, Meta-Analysis.*

INTRODUCTION

Meta-analysis is a powerful tool for synthesizing and analyzing the results of multiple studies to provide a comprehensive understanding of a particular research area (Cohen, 1988). In recent years, the effectiveness of English vocabulary instruction has become a focus of attention for researchers and educators alike. One of the strategies commonly used to enhance vocabulary acquisition is the implementation of a word wall. A word wall is a visual display of words that are relevant to a particular topic or subject area, and it is often used in the classroom as a reference tool to support vocabulary development.

The purpose of this meta-analysis study is to synthesize the results of previous studies on the effectiveness of word walls in junior high schools, with a specific focus on their impact on the acquisition of English vocabulary. To achieve this goal,

a systematic search of the relevant literature will be conducted, drawing from databases such as the Education Resources Information Center (ERIC) (ERIC, n.d.), ProQuest Education Journals (ProQuest Education Journals, n.d.), and the Cochrane Library (The Cochrane Library, n.d.). The inclusion criteria for the studies will be based on the research design (e.g., randomized controlled trials, quasi-experimental studies), the population (e.g., junior high school students), and the outcome measures (e.g., English vocabulary acquisition).

The results of this meta-analysis will provide a comprehensive understanding of the impact of word walls on English vocabulary acquisition in junior high schools, and it will inform the development of evidence-based practices for vocabulary instruction.

In conclusion, the meta-analysis study of English vocabulary through the effectiveness of word walls in junior high schools aims to provide a comprehensive understanding of the impact of this instructional strategy on vocabulary acquisition. The results of this study will inform the development of evidence-based practices for vocabulary instruction and support the improvement of English language education in junior high schools.

METHODS

The study aims to determine the effectiveness of using Word Wall as a vocabulary learning tool in improving English proficiency among students. It focuses on evaluating the impact of Word Wall on English proficiency based on various factors such as schools, grades, regions, and categories. The research design adopted in this study is a meta-analysis, which involves synthesizing and analyzing data from multiple sources to draw a comprehensive conclusion.

The data source for this study is limited to 6 journals in Indonesia, and the articles were selected based on their relevance to the study's objectives and research methods. The procedure of the study involves conducting a thorough literature review to identify the research problem and formulate the study objectives. The researcher then searched for relevant articles through online websites of related journals, and carefully analyzed and interpreted the selected articles to determine the effectiveness of Word Wall as a vocabulary learning tool.

The analysis of the articles was done in a systematic manner, starting with a review of the title and abstract to ensure that the article was relevant to the study. The researcher then carefully examined each article to identify the strengths and weaknesses of the Word Wall strategy as a vocabulary learning tool. Finally, a report was compiled based on the results of the meta-analysis, which provides insights into the effectiveness of Word Wall in improving English proficiency among students.

The results of the study will be useful for teachers, researchers, and other individuals involved in English education. For teachers, the study provides valuable insights into effective teaching techniques and the use of Word Wall as a vocabulary learning tool. The study also highlights the importance of creativity and innovation in teaching English vocabulary, which can make the process of teaching and learning enjoyable and more effective. For researchers, the study provides a deeper understanding of the effectiveness of Word Wall in improving vocabulary achievement among students.

In conclusion, the study provides a comprehensive evaluation of the effectiveness of Word Wall as a vocabulary learning tool in improving English proficiency among students. The results of the study can serve as a guide for teachers and researchers in teaching vocabulary effectively and improving students' vocabulary achievement.

The procedure followed in this study was based on the meta-analysis steps in social research proposed by Noel A. Card. The steps were as follows:

1. Literature review: Conducted a literature review to identify the research problem, which was the influence of the word wall strategy on vocabulary improvement.
2. Search for relevant articles: Searched for relevant research reports and articles using predetermined criteria such as national journal publications and online websites.
3. Selection of articles: Read the title, abstract, and research methods of the articles to select those that aligned with the research problem.
4. Analysis of articles: Analyzed and reviewed the selected articles, grouping and comparing them based on categories found in the reports.
5. Compilation of results: After completing all the stages, the results of the meta-analysis were compiled to obtain the conclusions.

Research Design

This study employs a meta-analysis research design, which is a systematic review method that involves the use of statistical techniques to synthesize the conclusions of multiple studies. The data source for this study is comprised of literature, books, and journal articles published nationally that relate to the use of word walls in enhancing vocabulary. The purpose of this meta-analysis is to provide a comprehensive and quantitative review of existing research on the effectiveness of word walls in improving vocabulary by narratively or systematically reviewing published research results. By conducting this meta-analysis, the researcher aims to provide a comprehensive understanding of the current state of knowledge on the topic and to identify areas for future research.

Research Participants and Sampling Procedures

This study focused on six schools located in Indonesia. The schools were selected based on their relevance to the study topic and their availability of research data. The schools are as follows:

- SMP Negeri 1 Purworejo (31 participants)

- SMP Manaratul Islam Jakarta (30 participants)

- SMP Bandar Lampung (30 participants)

- SMP Mutiara 1 Bandung (29 participants)

- SMP Kristen Taraitak (30 participants)

The sample size was determined based on the availability of research data and the relevance of the schools to the study topic. The sample size of 31 to 30 participants per school was selected to allow the researcher to draw meaningful conclusions about the effect of word walls on vocabulary improvement. The sample size was also considered sufficient to calculate the standard deviation and mean control and experiment for the study.

Data Collection

The data collection was conducted by the researchers through a search for articles that were relevant or related to the research topic from internet network sites. The collected data was analyzed to ensure it matched the required variables as stated in the coding sheet. The data was divided into groups based on the average and standard deviation of each experimental and control group from each sub-study. After an initial search, the researchers identified more than six articles related to the use of the word wall strategy in improving vocabulary at the junior high school level in Indonesia between 2015 and 2020, written by teachers and students.

The researchers narrowed down the number of articles to eight, by selecting those that met the sample criteria and analyzing their contents based on the data needed to calculate the effect size. After the selection process, only six articles remained and were used as the research data to calculate the effect size.

In the data analysis technique, the commonly used method is the pooled standard deviation (Rosnow and Rosenthal, 1996). The pooled standard deviation is found by taking the square root of the average of the two variances (Cohen, 1988). The formula for this calculation is:

$$d = \frac{M_1 - M_2}{\sigma_{pooled}} \quad with \ \sigma_{pooled} = \sqrt{(\sigma_1^2 + \sigma_2^2)/2}$$

Where:

M_1 : The mean of the eksperiment group

$M_2: The\ mean\ of\ the\ control\ group$

$\sigma_1^2 : The\ variance\ of\ the\ experiment\ group$

$\sigma_2^2: The\ variance\ of\ the\ control\ group.$

Data collection was carried out by conducting a systematic review of articles related to the use of word walls in improving vocabulary among junior high school students in Indonesia. The researchers searched for relevant articles on the internet and screened them based on specific criteria, including publication year (2015-2020), authorship (teachers and students), and level of education (junior high school). After screening, the researchers selected 11 articles, which were then reduced to 8 articles that met the criteria for the sample.

The data collected was analyzed using the meta-analysis method, which involves calculating the effect size by using the pooled standard deviation, σpooled. This method is commonly used in meta-analysis research and is based on the mean difference between the experimental and control groups, as well as the standard deviation from each group. The pooled standard deviation is calculated as the square root of the average of the two variances and is used to adjust for any differences in the variances between the two groups.

The final data used in the meta-analysis consisted of six articles that provided sufficient information on the use of word walls in improving vocabulary among junior high school students in Indonesia. The researchers used the data from these articles to calculate the effect size and draw conclusions on the effectiveness of the word wall strategy in improving vocabulary.

The researcher conducted data collection using books, papers, articles, magazines, journals, and trusted websites from institutional official websites. The collected data was in the form of notes, transcripts, books, newspapers, magazines, etc. related to the research topic.
Intervention

This research was conducted at six schools: SMP Negeri 1 Purworejo (31 students), SMP Manaratul Islam Jakarta (30 students), SMP Bandar Lampung (30 students), SMP Mutiara 1 Bandung (29 students), SMP Kristen Taraitak (15 students), and SMPN 198 Jakarta (70 students). The research was conducted from July 12, 2020.

RESULTS

This research presents the findings of a meta-analysis on the impact of using the Word Wall method on English vocabulary learning. The Effect Size was used to evaluate the effectiveness of the model. The data analyzed was sourced from previous studies and research discussions.

Impact by Schools: The study included 6 schools: SMPN 1 Purworejo (Effect Size 1.39), SMP Manaratul Islam Jakarta (Effect Size 0.67), SMP Bandar Lampung (Effect Size 3.08), SMP Mutiara 1 Bandung (Effect Size 0.37), SMP Kristen Taraitak (Effect Size 1.27), and SMPN 198 Jakarta (Effect Size 0.32). The average Effect Size across all schools was 1.183.

Table 1 The Effect of the School

Number	School	Effect Size
1	SMPN 1 Purworejo Grade 8	1.39
2	SMP Manaratur Islam Jakarta grade 7	0.67
3	SMP Bandar Lampung grade 8	3.08
4	SMP Mutiara 1 Bandung grade 7	0.37
5	SMP Kristen Taraitak grade 7	1.27
6	SMPN 198 Jakarta grade 8	0.32
	Average Effect Size	1,183

The Effect by Grades: The study analyzed two grades, 7 and 8, to determine the effect of the Word Wall. The results showed that grade 8 had a higher effect than grade 7. The average effect across both grades was 1.18.

Table 2 The Effect of the Grade

Number	Grade	School	Effect Size
1	VII	1. SMP Mutiara 1 Bandung 2. SMP Kristen Taraitak 3. SMP Manaratul Islam Jakarta	0,77
2	VIII	❖ SMP Negeri 1 Purworejo ❖ SMP Bandar Lampung ❖ SMPN 198 Jakarta	1,59
		Average Effect Size	1,18

The Effect by Region: 5 regions were used in the meta-analysis, including Central Java (effect size 1.39), Jakarta (effect size 0.83), Lampung (effect size 3.08), West Bandung (effect size 0.37), and North Sulawesi (effect size 1.27). The average effect size across regions is 1.32."

Table 3 The Effect by the Region

Number	Region	Effect Size
1	Central Java	1,39
2	Jakarta	0,49
3	Lampung	3.08
4	West Bandung	0,37
5	North Sulawesi	1,27
	Average Effect Size	1,32

The Effect by Category: There are two categories, Big and Small, with Lampung belonging to the Big category and Bandung belonging to the Small category. The average effect size of these categories is 1.72."

Table 4 The Effect by the Category

Number	Category	Effect Size
1	Big Effect (Lampung)	3,08
2	Small Effect (West Bandung)	0,37
	Average Effect Size	1,72

DISCUSSION

This study is a descriptive meta-analysis that utilized a literature review to formulate the research problem. The study aimed to determine the effectiveness of the Word Wall strategy in enhancing English vocabulary among English Foreign

Language learners. The sample population was Junior High School students. The effectiveness was measured using the effect-size calculation based on various journal articles and research studies. The results, based on the literature review, showed that the Word Wall is an effective method in improving students' vocabulary at the Junior High School level.

The literature review conducted in this study analyzed several studies related to the use of Word Wall in vocabulary improvement. The results of these studies showed that the Word Wall was effective in enhancing students' vocabulary. This is likely due to its interactive nature, which encourages students to actively engage with words and their meanings.

The use of effect-size calculation in this study provides a quantitative measure of the effectiveness of Word Wall in improving vocabulary. The results suggest that this strategy has a significant impact on students' vocabulary, particularly at the Junior High School level.

In conclusion, the results of this study support the use of Word Wall as an effective method in enhancing English vocabulary among English Foreign Language learners. Educators and language teachers can consider incorporating the Word Wall strategy in their classes to support students' language development. Further research is needed to determine the effectiveness of Word Wall in other language learning contexts and with different age groups

CONCLUSION

The results of this research indicate that the use of the Word Wall strategy significantly improves English vocabulary learning outcomes for students in the experimental group, with an effect size of 1.18 compared to the control group. This supports the conclusion that the Word Wall strategy is an effective method for improving vocabulary. The Word Wall strategy was found to be effective in improving vocabulary outcomes at both Junior High School and High School levels, with effect sizes of 1.183 and 1.18 respectively. The results show that the Word Wall strategy is effective in improving vocabulary outcomes in various regions, including Bandar Lampung, Purworejo, Jakarta, Bandung, Tarakan, and Jakarta, with an overall effect size of 3.0. This suggests that the Word Wall strategy can be effectively utilized to improve vocabulary outcomes for students in Indonesia.

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APPENDICES

Appendix 1

LIST OF RESEARCH & JOURNALS

Code number	Research / Journals Title	Researcher / Writer	Institution	Year
1A	The Effectiveness of using Word Wall Media to Teach Vocabulary of the Eighth-grade Students at SMP N 1 Purworejo in the School year 2012/2013	SULASIH.	English Education study program, Teacher Training and Education Sciences Faculty, Muhammadiyah University of Purworejo.	2013
2A	The Effectiveness of Word Wall Strategy on Students Vocabulary Mastery Grade Seventh year 2014/2015	FARAH AINY	Department of English Education faculty of Tarbiyah and Teachers' training syarif hidayatulahhah state Islamic University Jakarta	2015
3A	The Influence of using Word Wall on the Students' Vocabulary Mastery at the Second Semester of the Eighth grade of SMP Dwi Pangga Bandar Lampung in 2017/2018	UMMIL KHAIR	Islamic University Lampung	2018
4A	The Effectiveness Between Discovery Learning and Word Wall method in improving Vocabulary at the Seventh-grade students. 2020	Fahmi Junizar, M. Hilman Sofyan, Sudiyono	IKIP Siliwangi.	2020
5A	The use of Word Wall Game Media to improve Students' Vocabulary Mastery at 7 grade SMP Kristen Taraitak 2018	Riani Ester Aruperes, Nihta V.F. Liando, Rinny Rorimpandey	University Taraitak, District of Langowan Utara	2018
6A	Using Word List on the Word Wall Strategy on Students' Vocabulary Learning Result	Azizah, Sri Marina Ulfah	Universities Islam As-syafiiyah Jakarta	2016

Appendix 2

META-ANALYSIS CODING RESEARCH & JOURNAL

Journal Number	SAMPLE (KELAS...SD/SMP/SMA)	TOTAL NUMBER STUDENTS (n)	POSTEST RESULT				Effect Size (*d*)
			Mean Experiment	Std Dev Experiment	Mean Control	Std Dev Control	
1	SMPN 1 Purworejo Grade 8	31	83.48	7.13	73.41	7.26	1.399525934
2	SMP Manaratul Islam Jakarta Grade 7	30	20.33	6.057	15.57	7.873	0.677682629
3	SMP Bandar Lampung Grade 8	30	73.84	4.758	61.13	3.35	3.088945516
4	SMP Mutiara 1 Bandung Grade 7	29	76.9	5.287	75.28	2.963	0.378015209
5	SMP Kristen Taraitak Grade 7	15	80	12.24	65	11.33	1.271856845
6	SMPN 198 Jakarta Grade 8	70	79.4	9.998	76.77	5.786	0.32198179