

The Correlation Between Vocabulary Mastery and Writing Skill a Meta-Analysis

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Abstract

This Meta-Analysis turned into carried out to synthesis of statistics throughout comparable research. This study hired a descriptive qualitative approach. The facts of this look turned into 28 comparable research that focussed on the correlation between vocabulary mastery and writing skills that concerned 993 samples. The facts contained data and respondents. In gathering the facts, the researchers used 5 steps, namely: Collecting research or meta-evaluation materials; Calculating the impact length of every look; Estimating the precis impact or suggest impact length; Moderator variable evaluation; Publication bias evaluation. The software program that turned into applied to research the facts turned into JASP. Since $K=287$, so $5K+10 = 145$. The fail-safe N value obtained is 2437.000, with a significant target of 0.05 and $p < 0.001$. Because of the safe value of $N > 5K+10$, it can be concluded that there is no publication bias problem in the meta-analysis study.

Keywords: *Correlation, Meta-Analysis, Vocabulary mastery, and Writing skill*

INTRODUCTION

Listening, speaking, reading, and writing is four language skills taught in English classes. Vocabulary is an aspect of the language that students need to master to gain complete command and understanding of English. All learners need to master most vocabulary to master all skills. When reading, students will have difficulty understanding the text if they do not know the meaning of the words in the text (Sariatun, 2010). Understanding vocabulary helps students understand the meaning of the words they are reading. Similarly, if you have a small vocabulary, you will not be able to speak fluently. Good vocabulary can help you communicate your thoughts more fluently with others. Also, when listening, if you know a lot of words, you can understand what the speaker is saying. When listening to an English word, knowledge of the vocabulary will allow you to fully understand the word someone said. In addition, vocabulary is essential when writing. A good writer needs a wide range of vocabulary to enhance the clarity and accuracy of his writing.

In general, writing activities are inseparable from the educational system, as writing allows students to develop their creativity. Writing is a productive language skill (Richards, C. Jack, and Renandya, 2002). By writing, someone can express their thoughts and feelings. Then provide the information to the reader. When writing, our vocabulary determines how we express our thoughts clearly and accurately to others. Writing is generally useful as training for another activity, especially if the student writes a sentence as an explanation for a discussion activity (Harmer, 2007). On the other hand, communicating in a written language requires the true skills of the writer.

According to Laufer, B., & Nation (1999), it is important to set the English vocabulary to different levels depending on how often it occurs. From statements explained by experts, they share vocabulary types in different ways to express their thoughts and opinions. Vocabulary acquisition is necessary to convey our ideas and evaluate what others say. The details of an entity's vocabulary awareness depend on the person and their inspirational needs. Vocabulary is an integral part of four language skills, and vocabulary championships must be understood as one of the essential voice components. When measuring vocabulary championships, there are two types of tests used to test

world vocabulary level and vocabulary testing.

Familiarity is defined as comprehensive knowledge or ability in a particular subject or activity. Vocabulary acquisition can be built up as the ability to combine the skills or knowledge of words used to express meaning in the form of symbols or groups of letters of a single or multiple words in the case of physical objects or ideas. As a child, children can define conceptual vocabulary to express their concrete ideas. In the final stage, adulthood, vocabulary is used more and more intensively to communicate more with each other.

Students need to acquire writing skills through writing practice. In addition, according to Tarigan, writing is an activity that involves creating or drawing visual symbols that represent a language known to an individual so that others can understand the graphic symbols provided. According to Lameran, writing is a linguistic expression or sign language.

Some studies have shown that vocabulary acquisition has some implications for writing ability. A study of correlation was conducted Sariatun, published in 2010 entitled "Correlation between English Vocabulary Acquisition and Writing Ability in Grade 8". There are 84 students participated in the study. Testing and documentation served as a means of collecting data. On the other hand, the correlated product ratio is Used to analyze the collected data. The results of the study showed that there was a significant correlation between vocabulary acquisition. Writing ability of the second grade of junior high school.

Other studies have been made by Stæhr (2008), Skills listening to the size and reading of vocabulary. the study We suggested examining the relationship with the force with the Boca axis Listen in English as Foreign Languages (EFL), read, write writing, writing. The participants of the research covered lower second to 88 EFL learners in Denmark School. Language skills of participants including listening, reading, and writing were examined by the results of national abandonment

Muslikah published a fourth study entitled "Correlation between Student Vocabulary Acquisition and Ability to Write Analytical Commentary Texts". The purpose was to obtain objective evidence of student vocabulary acquisition through the ability to write analytical presentation texts. Musical instruments were multiple-choice questions for writing vocabulary tests and analytical explanatory texts for writing abilities. The results show that the relationship between the student's vocabulary and the ability to write analytical explanations is important. Muslikh published a fifth study entitled "Relationship between Students' Vocabulary Acquisition and Their Writing Descriptive Text Ability". It focuses on empirical evidence of student vocabulary superiority in the ability to write descriptive words. The data collected is evaluated using Pearson Product Moment Analysis. The equipment used was for research. Tests have shown that the contribution to the vector is 0.66.

According to Limbong et al., (2021) was conducted the correlation between students' vocabulary and writing skills. The result of the hypothesis test showed that the coefficient of correlation is 0,638 at the significant level of 0,5%. Since the r count is higher than the r table ($0,638 > 0,279$) it means that H_0 is rejected. (Wahyuni Syartika et al., 2020) explained more that the correlation value between students' writing ability in descriptive text and their vocabulary mastery was a low correlation ($r_{xy}=0.26$). furthermore, Yuliani in his research entitled correlation between students' writing ability in descriptive text and their vocabulary mastery. The main finding of the study data showed that the correlation coefficient between variable X and variable Y is $r_{xy} = 0.646$. The criteria of correlation between two variables between 0,40 – 0,646 are there is a moderate correlation.

Based on the results of the research above, the authors found a relationship between vocabulary and writing. However, there are differences in the results, so this study focuses on estimating supporters and variances of the underlying population penalties from a collection of empirical studies that allegedly address the same search problem. Researchers wanted to show the relationship between students' vocabulary and writing abilities. It is a meta-analysis. The researcher uses the meta-analysis approach to determine if an article has publication bias as well as the consistency or inconsistency of a similar study. To determine the effect size or the strength of the association or the magnitude of the difference between variables in each research.

METHODOLOGY

A meta-analysis is a statistical approach for combining the findings of two or more related research to get a quantitative mix of information. The meta-analysis is a retrospective observational study, in the sense that the researcher recapitulates the facts without undertaking experimental modification, based on the process in this research. The Researcher used a qualitative description. This note provides information on 28 comparative studies focusing on the correlation between vocabulary and writing abilities. The memo contains r and n . r is the cost factor and n is the respondent. In collecting the data, the researchers used five steps.

By collecting studies or meta-analysis materials about the correlation between vocabulary mastery and writing skills, Finding out the effect sizes and Standard Error through excel, Estimate the summary effect or mean effect size, and Moderator variable analysis, Finally the author will find out whether there is a publication bias in these studies.

RESULT AND DISCUSSION

Collecting data in this study by collect data from journals that have the same or almost the same title, namely "**Related Word Mastery And Writing Skills A Meta-Analysis**" after collected there are 28 titles of articles (journals with the same content). calculate the magnitude of the effect of each study, the first step to do is to collect the values of n and r , then create a table in Microsoft Excel, and after that enter the sum into the meta-analysis

$$\text{Formulas: } z = 0,5 \times \ln \frac{1+r}{1-r} \quad v_z = 0,5 \times \ln \frac{1}{n-3} \quad SE_z = \sqrt{v_z}$$

Tabel 1. Analysis result of Mean Effect Size

No	Studies	R	N	Z	Vz	Sez
1.	(Subekti, 2017)	0,344	56	0,359	0,019	0,137
2.	(Cahyani, 2016)	0,42	44	0,448	0,024	0,156
3.	(Yuliani, 2016)	0,646	48	0,768	0,022	0,149
4.	(Huliani, 2019)	0,611	23	0,711	0,050	0,224
5.	(Mahmud Al Habyby, M. Martono, 2016)	0,339	34	0,353	0,032	0,180
6.	(Nadia Anggita, 2019)	0,316	23	0,327	0,050	0,224
7.	(Rohmah Ayu Sulistyaningrum, Siswanto Siswanto, 2019)	0,74	32	0,950	0,034	0,186
8.	(Farhaningrum, 2017)	0,647	30	0,770	0,037	0,192
9.	(Muslikah, 2017)	0,63	26	0,741	0,043	0,209
10.	(Wahyuni Syartika, S. Suharni, 2020)	0,26	10	0,266	0,143	0,378
11.	(Novitri et al., 2021)	0,603	38	0,698	0,029	0,169
12.	(Salma Hanifunisa, 2016)	0,382	28	0,402	0,040	0,200
13.	(Tina Setyorini, 2018)	0,62	68	0,725	0,015	0,124
14.	(Zaimah, 2017)	0,099	24	0,099	0,048	0,218
15.	(Limbong, et al., 2021)	0,638	53	0,755	0,020	0,141
16.	(Septika Ariyanti, 2017)	0,583	38	0,667	0,029	0,169
17.	(Azizah, 2017)	0,563	26	0,637	0,043	0,209
18.	(Arif, 2017)	0,312	40	0,323	0,027	0,164

19.	(Utari, 2019)	0,514	30	0,568	0,037	0,192
20.	(Indah Sari, 2018)	0,558	50	0,630	0,021	0,146
21.	(Latifa, 2019)	0,05	37	0,050	0,029	0,171
22.	(Daulika, 2018)	0,095	30	0,095	0,037	0,192
23.	(Bishry, 2018)	0,604	28	0,699	0,040	0,200
24.	(Fadhliah, 2020)	0,418	83	0,445	0,013	0,112
25.	(Umairah Rahmati, 2018)	0,607	30	0,704	0,037	0,192
26.	(Novitri, 2021)	0,329	38	0,342	0,029	0,169
27.	(Y. Azizah, 2017)	0,563	26	0,637	0,043	0,209
28.	(Rahmati, 2018)	0,607	30	0,704	0,037	0,192

Notes:

z = Effect size

Vz =Variant of z

Sez = Standard error value

Summary Effect or Mean Effect Size

To calculate the effect sizes of each study, the first step that must be done is to collect the values of z and Sez. After getting the effect sizes and standard errors, the researcher will conduct a meta-analysis using the JASP software. The data we need is composed of three columns. The first column is the study, the second is the effect sizes and the third is the stored standard error. The data that we have got, we save it in a JASP file in the form of cvc (comma delimited) format, then open JASP, upload data, select Meta-analysis, and select classically.

Table 2. Heterogeneity Test
Fixed and Random Effects

	Q	df	p
Omnibus test of Model Coefficients	142.250	1	< .001
Test of Residual Heterogeneity	44.916	26	0.012

Interpretation:

The results of the analysis show that the 27 effect sizes of the analyzed studies are heterogeneous (Q = 428.478; p < 0,001). Thus, the random effect model is more suitable for estimating the average effect size of the 23 analyzed studies, the results of the analysis also identify that there is potential to investigate moderating variables that affect the relationship between students' vocabulary mastery and reading comprehension.

Table 3. Summary Effect/Mean Effect Size

	Coefficients					
	Estimate	Standard Error	z	p	95% Confidence Interval	
					Lower	Upper
intercept	0.534	0.045	11.927	< .001	0.446	0.622

Interpretation:

The results of the analysis using the random effect model show that there is a significant positive

correlation between vocabulary mastery and writing skills ($z=11.927$; $p < 0.001$; 95%CI) {0.446;0.623} while the effect of the self-control category on students' vocabulary mastery and writing skills includes high category because ($r_{RE} = 0.534$)

* $r = 0,1$ (low); $r = 0,3$ (moderate); $r = 0,5$ (high) (Cohen, 1998)

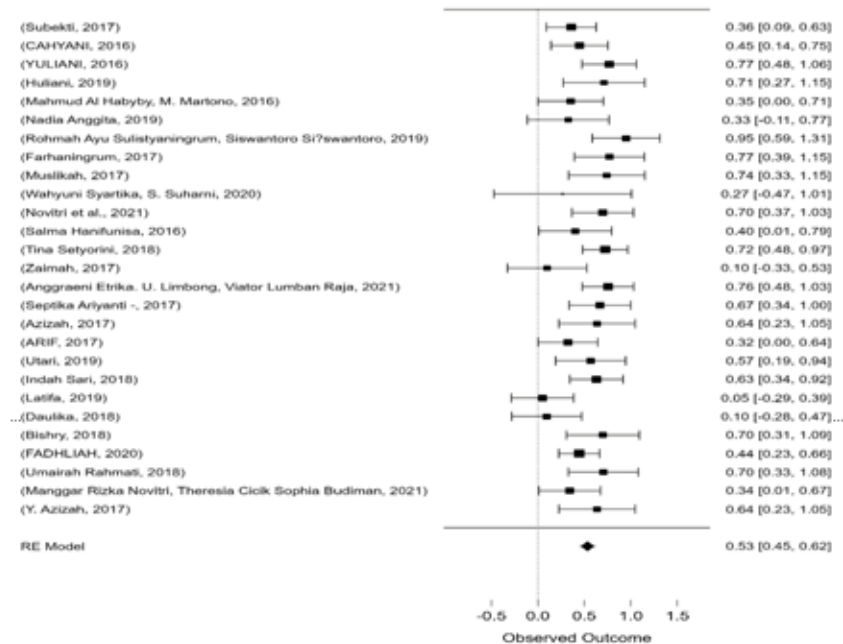


Figure 1. Forest Plot

Based on the picture above we can conclude that the effect size of the students analyzed varies in value such as 10-76 and can be seen in the table.

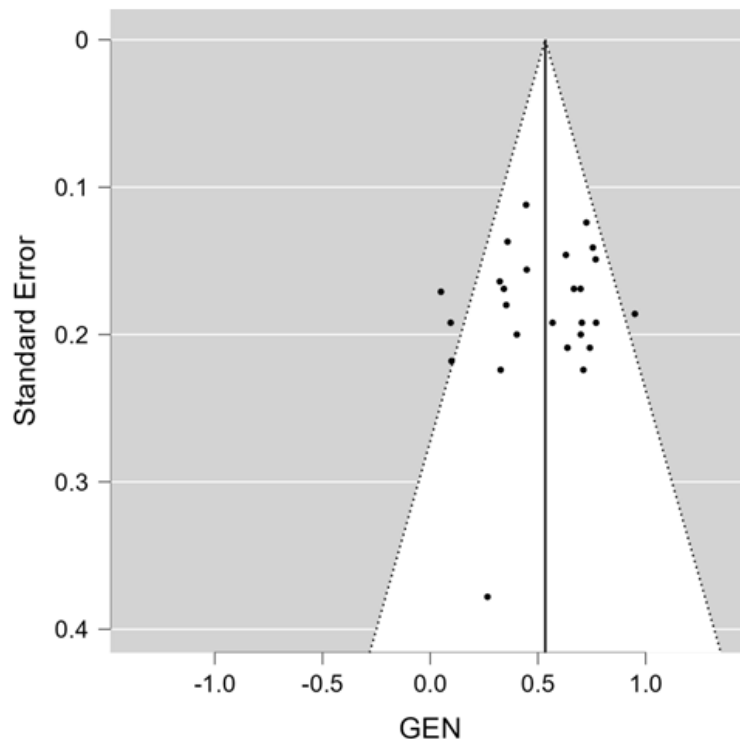


Figure 2. Funnel Plot

The results of the funnel plot are difficult to conclude whether the funnel plot is symmetrical or not because it is difficult to understand the points in the table. So an Egger test is needed to test whether the funnel plot is symmetrical or not

Tabel 3. Egger Test
Regression test for Funnel plot asymmetry ("Egger's test")

	z	p
sei	-0.622	0.534

Because the p-value > 0.05 confirms that the funnel plot is symmetrical. Thus, it can be concluded that there is no publication bias issue in this meta-analytical study.

Table 4. Fail-Safe N
File Drawer Analysis

	Fail-safe N	Target Significance	Observed Significance
Rosenthal	2437.000	0.050	< .001

Since $K=27$, so $5K+10 = 145$. The fail-safe N value obtained is 2437.000, with a significant target of 0.05 and $p < 0.001$. Because of the safe value of $N > 5K+10$, it can be concluded that there is no publication bias problem in the meta-analysis study.

CONCLUSION

Based on the book bias assessment using the funnel plot or Egger view and the fail-safe N evaluation or the failed drawer evaluation, it can be concluded that there may be no publication bias in these 28 studies. The randomized impact version became more suitable for estimating the length of impact implications of the 28 analyzed studies, evaluation results Since $K=27$, so $5K+10 = 145$. The fail-safe N value obtained is 2437,000, with a significant target of 0.05 and $p < 0.001$. also acknowledged that there may be an ability to analyze moderating variables that impact the relationship between students' vocabulary mastery and writing skills.

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