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The Correlation of Vocabulary Mastery on Students' Speaking Ability

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***Abstract*:** Vocabulary mastery is a crucial linguistic element in the context of English as a Foreign Language (EFL) that helps students communicate oral concepts clearly and effectively. Speaking ability is frequently seen as a crucial measure of language competency; however, EFL students, especially those in Indonesian junior high schools, have little opportunity to engage in real-world English conversation outside of the classroom, which could impede their speaking development. The purpose of this study is to determine how strongly and statistically significantly students' speaking abilities and vocabulary mastery are correlated. A correlational model was used in this study's non- experimental quantitative research design. Eighth-grade pupils from SMPN 1 Kroya participated. Cluster random selection was used to choose 62 individuals from two courses out of a total of 305. Vocabulary and speaking assessments, records, and research tools used in educational activities were used to gather data. Pearson Product Moment Correlation was used for data analysis after a normal data distribution was confirmed. The results showed that speaking proficiency and vocabulary mastery were strongly and statistically significantly correlated. For language mastery and speaking abilities, the lowest scores were 24 and 25, respectively. With a significance value (2-tailed) of 0.000 ($p < 0.05$), the correlation coefficient determined using SPSS 23 was 0.969, suggesting a very strong link between the two variables. These findings demonstrate that among eighth-grade EFL learners at SMPN 1 Kroya, vocabulary mastery and speaking proficiency are strongly correlated.

Keywords: *Students' Vocabulary Mastery, Speaking Ability, Quantitative Research*

INTRODUCTION

Many Indonesian students still struggle with English competency, especially in the realm of education where it is still seen as a strange and alien subject. Four basic language abilities must be mastered by pupils taking English as one of the mandatory topics in school: speaking, listening, reading, and writing. According to Jamlan in Aristiawan (2022), these abilities are crucial for enhancing general English language competency and empowering students to communicate successfully in accordance with their needs.

Speaking is frequently seen to be the most challenging of the four abilities. Although

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speaking ability and language competency are strongly linked, learners may find it difficult to articulate their thoughts and emotions due to a lack of vocabulary. Since vocabulary directly enhances students' oral communication skills, it is regarded as the cornerstone of language development. This suggests that speaking ability and vocabulary mastery are closely related (Loraine in Tawarik, 2021).

Due to its widespread usage in a variety of fields, including education, society, politics, the economics, and culture, language itself is intrinsic to daily existence. Language is a verbal communication instrument that helps people communicate meaning and engage with others (Nursyamsi in Aristiawan, 2022). Students' restricted vocabulary is one of the primary causes of their poor speaking abilities when learning English in Indonesia. Because they can't remember the right words, students frequently have trouble speaking English and must utilize dictionaries or translation apps like Google Translate.

Numerous earlier research has looked at the connection between speaking competence and vocabulary mastery. For example, a study by Nina Aristi et al. from Riau University discovered a considerable correlation (correlation coefficient of 0.68), indicating a significant relationship, between students' speaking skills and vocabulary acquisition. In a similar vein, further research has shown that pupils' speaking abilities are adversely affected by a lack of vocabulary, especially when it comes to building sentences and conveying spoken words. These results imply that improving pupils' vocabulary is crucial to improving their speaking abilities.

Nevertheless, there are still certain restrictions in place even with these investigations. The majority of earlier studies had comparatively small sample sizes and did not explicitly state that required statistical tests, such as homogeneity, linearity, and normality tests, were used prior to correlation analysis. Their findings' validity and generalizability may therefore be constrained. As a result, there is a study gap concerning sample size and methodological rigor when examining the connection between speaking proficiency and vocabulary mastery.

The current study fills this gap by being new in two ways. First, it uses a bigger sample size, which should yield results that are more representative and broadly applicable. Second, to guarantee the validity of the correlation analysis between students' vocabulary mastery and speaking ability, this study employs basic statistical procedures, such as normality, homogeneity, and linearity tests.

This study was carried out at SMPN 1 Kroya after preliminary findings suggested that the learning environment was encouraging and that both teachers and students were enthusiastic about learning English. These circumstances inspired the researchers to look more closely at the connection between students' proficiency with vocabulary and their ability to talk in this setting.

The primary goal of this study is to ascertain the degree to which vocabulary mastery and speaking ability among eighth-grade students at SMPN 1 Kroya are related, based on the research gap and novelty previously mentioned. The results of this study should raise students' awareness of the value of expanding their vocabulary in order to improve their speaking abilities and motivate educators to create more interesting and successful English language learning activities.

The current study utilized a bigger population, with 62 samples selected from a total population of 305 students across two classes using cluster sampling, in contrast to earlier studies that concentrated on private schools with rather small samples (16 out of 20 students). This variation in sample size and sampling methodology enhances the data's representativeness and permits more reliable statistical analysis. Previous research generally focused on a single class of 16–30 students, which restricted how broadly the results could be applied.

This study used a speaking test with a scoring rubric for language assessment, asking students to

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describe a pertinent image. Pronunciation, grammar, comprehension, and vocabulary knowledge are the main language components that are assessed (Suratmi S., 2024). These elements guarantee that speaking performance is assessed holistically rather than only on fluency and represent the multifaceted character of speaking ability.

Vocabulary is often acknowledged that vocabulary is an essential part of learning a language, especially when studying a foreign language. Fluent communication, correct idea expression, and the construction of meaningful sentences are all made possible by a well-developed vocabulary. Vocabulary is a key component of overall language ability since it supports the four language abilities of speaking, listening, reading, and writing, according to Richards and Renandya (in Julianti, 2020). Similar to this, Sari, Wulandari, et al. (2025) stress that communicative and interactive learning methodologies greatly aid in the development of speaking skills by enhancing vocabulary knowledge and learners' self-confidence. Incorporating both viewpoints, vocabulary mastery is positioned as a crucial independent variable in this study since it directly enhances students' performance on speaking tasks. Even if pupils comprehend basic grammar, they may find it difficult to express concepts if they lack an adequate vocabulary. Thus, it is theoretically justified to investigate the connection between speaking skill and vocabulary mastery.

The correlation coefficient value is 0.853, and the interval range between 0.80 and 1.000 indicates a very strong degree of association. The next was "The Correlation Between Vocabulary Mastery and Speaking Skill," which came from Roswita Rongga Milla et al. A substantial degree of association is shown by the correlation coefficient value of 0.712, which falls between 0.60 and 0.799.

A number of preliminary tests, such as normality and homogeneity tests, were carried out due to the comparatively large sample size (more than 50 students) and the participation of multiple classes. Because the sample size was greater than fifty, the Kolmogorov-Smirnov test was used to evaluate normality, and homogeneity testing was required to guarantee similar variance among groups. These steps are necessary to choose the proper statistical analysis technique.

Parametric statistics utilizing the Product Moment correlation can be used if the data are homogenous and normally distributed, provided that these presumptions are met. Non- parametric statistics, particularly Spearman's correlation, are employed as a substitute if these presumptions are not satisfied (Anwar Hidayat). Because parametric analysis offers more statistical precision and accuracy, it is recommended when assumptions are met (Dita Kurniasari, 2021).

As Sugiyono (in Sanny, 2020) suggests, this correlational study approach is suitable for investigating the connection between students' vocabulary knowledge and their speaking English abilities. This indicates that low frequency vocabulary range of more than 100,000 words families, is generally infrequently employed in a variety of linguistic contexts or activities, Rahmatullah, F., A.E, Y., & Edi, S. (2024). The second category of vocabulary is active and passive vocabulary. Specifically, active vocabulary refers to words that kids understand constructively when writing and speaking and are typically utilized when they become writers and speakers. and passive vocabulary that kids comprehend as readers and listeners. Active vocabulary, on the other hand, refers to words that kids comprehend when they are readers and listeners, where the words come in a context but they are only able to read and hear, Evelyn Hatch and Cheryl Brown (in Julianti, 2020). Receptive mastery and productive mastery are the two categories of vocabulary mastery that comprise the final form of vocabulary. Receptive mastery is the ability to recognize and comprehend vocabulary when it is read or heard with ease. Productive vocabulary, on the other hand, refers to the necessary words that a person uses when speaking or writing to communicate the outcomes of his thoughts to others. Receptive and

productive vocabulary are the two categories into which it divides words, Nadia, N., Zamihu, J.Z., & Adu, B. (2022). In addition, vocabulary mastery refers to a person's ability to accurately identify, comprehend, read, write, listen, and speak words, Darmiyati Zuchdi (in Risna, 2022).

Aspects of Vocabulary.

When learning other languages, particularly English, students need to be proficient in three vocabulary-related areas: (a) Meaning of words. Harmer claims that the meaning of words is the first component of vocabulary. Among others: Polysemy, Antonyms, Synonyms,

Hyponyms, Connotation, (b) Word Usage. It is a metaphorical use of words. When someone expresses something, it may not truly represent what they are trying to say. (c) Word Formation. In addition to having a thorough understanding of word construction and how to modify words to match grammatical contexts, students also need to be proficient in word pronunciation and sound.

Concept of Vocabulary Mastery.

The most fundamental and crucial component of the four English language abilities—writing, reading, speaking, and listening—is vocabulary mastery. These skills are used to create sentences, communicate, and express their creative ideas, opinions, and feelings through language.

Indicator of Vocabulary Mastery.

A student needs to possess a variety of vocabulary skills, like as, Cameron (in Julianti, 2020), Pronunciation, Spelling, Grammar, Meaning.

Vocabulary Mastery Assessment.

The purpose of an evaluation in a learning process is to gauge the level of comprehension that pupils have acquired from the lessons. Evaluation is a procedure used to gather data about student learning results. Particularly in studies on vocabulary mastery Students are tested on their mastery of English vocabulary at four different levels: memory, vocabulary knowledge, comprehension, application, and analysis. In a field of research, assessment with an instrument is necessary. An instrument is a tool used to gather data in the form of test questions that are presented to students in order to determine their scores, which will then be utilized as research data. A vocabulary test measures pupils' proficiency with both critical and commercial vocabulary in a given language, Baharudin (2021).

Speaking.

Speaking is the primary means by which a person communicates in order to express their needs and wants. It is a natural human talent. Spoken language is a productive speaking talent that generates verbal meaning, Tarigan (in Suryanto et al, 2021). In particular, speaking English is one of the four English language proficiency requirements, along with reading, writing, and listening. Speaking is crucial to communication because it allows people to communicate their ideas and views, Darojah, Z., & Aminin, Z. (2023). Speaking involves employing language, vocabulary, and hearing and pronunciation to communicate ideas. Based on this description, the researchers draw the conclusion that speaking is a crucial component of communication, whether it is by speaking or hearing words or terminology that are intended to inform others.

Elements of Speaking.

Speaking fluently not only requires an understanding of linguistic features, but many pupils also struggle with language and information processing. Speaking effectively involves a number of components, such as, Ardian, K., et al (2023). a. Connected Speech. b. Expressive Devices. c. Lexis and Grammar. d. Negotiation language.

Goals of Speaking.

The objective of speaking is to be able to communicate effectively, particularly in language classes. It would be beneficial to practice the language because the goal of learning a foreign language is to be able to interact both inside and outside of the classroom, particularly when meeting foreign people. To help students develop communicative efficiency in speaking, we can use a balanced activity approach that combines

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language input and output in an organized and communicative manner, Monika, S. (2021). By establishing certain activities and content, this seeks to promote communication among students.

Concept of Speaking Ability.

Speaking effectively and efficiently is considered a sign of speaking skills. There are a number of linguistic and nonverbal language aspects that contribute to good speaking, Arsjad (in Zanoubia, June 2022). Linguistic aspects include word choice, tone, emphasis placement, length, pronunciation, and efficient sentence construction. Nonverbal language factors include speaking fluency and command of the subject, speaking flexibility, making eye contact with the audience, using suitable body language and facial expressions, and speaking loudly enough. Based on Powers in Raya (In Safitri, 2023), Speaking proficiency has four components: a. Social Ability, b. Semantic Ability, c. Phonetic Ability, d. Vocal Ability.

Types of Speaking Ability.

Drawing from Explaining the connection between students' vocabulary knowledge and speaking competence is one of the main goals of this study. Conducting correlation research to forecast potential outcomes and aid in the explanation of significant human behavior is one of the two main objectives.

Darojah, Z., & Aminin, Z. (2023) Speaking abilities can be divided into five categories; a. Imitation. The first kind of speaking talent is imitation; a speaker considers what he says and imitates a lot. The range of speech imitation levels is determined by phonetic oral output, which includes the quantity of prosodic, lexical, and grammatical aspects of language pronunciation. Additionally, there is less focus on the meanings that are typically required in this kind of participatory dialogue. A pupil permits speaking imitation in order to focus on vowels, sounds, and intonation, Maharani, R. (2022). b. Intensive, The second speaking ability is intensive. This kind of ability is demonstrated when a speaker uses brief spoken words. Unlike imitation, this style places more emphasis on phonological or pronunciation elements. While there is still little contact, intensive speaking enables the speaker to comprehend the meaning.

Speaking Ability Assessment.

A test is used to evaluate learning, particularly language learning, which focuses on evaluating both the native and foreign languages to integrate the two. In order to determine how effectively a student or someone planning to work overseas has acquired the English language, tests are typically administered. When administering a speaking test, it is important to include both linguistic and non-linguistic elements. Linguistic factors are linguistic, but non-linguistic ones include learning materials, comprehension, voice volume, and a student's speaking fluency. The five components of speaking are pronunciation, grammar, vocabulary, fluency, and comprehension, Anis, K., & Wachidah, K. (2021). Tests of speaking skills are used to learn more about a person's speaking ability, Hilaliyah (in Zanoubia, June 2022).

Correlation Between Students' Vocabulary Mastery and Speaking Ability. Explaining the connection between students' vocabulary knowledge and speaking competence is one of the main goals of this study. Conducting correlation research to forecast potential outcomes and aid in the explanation of significant human behavior is one of the two main objectives, Jack C Frankel and Norman E Wallen (in Julianti, 2020). To forecast scores and clarify the connection between students' speaking proficiency and vocabulary mastery, the researchers employed a correlational design. Correlation is the statistical test utilized in the study to gauge how strongly variables are related to one another. According to the description given above, correlation research is done using pre-existing data to ascertain the degree of link between two or more variables without manipulating the research data. Speaking and vocabulary mastery may be closely related since a person's desire to talk when he lacks vocabulary or words he has mastered will compel him to remain silent. Vocabulary and grammar are particularly important in English, especially

for the majority of pupils who still struggle to express their thoughts and emotion.

METHOD

In order to guarantee precise hypothesis testing and coherent results, choosing a suitable study design is crucial. According to Kerlinger (quoted in Zanoubia, 2022), research design is a methodical approach to carrying out research by meticulous planning, arranging, and structuring of inquiry in order to address a research topic. This study used a correlational research design and a quantitative research approach. By using statistical analysis, a correlational design seeks to ascertain the strength of the association between two or more variables. The association between students' vocabulary knowledge and speaking ability was investigated in this study using the correlational method. Since the researcher measured the strength of the link between variables rather than changing them, this kind of study is categorized as non- experimental (Rosyidah, 2019). The gathered data was analyzed using both descriptive and inferential statistical techniques. The utilization of descriptive statistics was employed to convert unprocessed numerical data into significant information, including frequency distributions and mean scores (Tawarik, 2021). To ascertain the relationship between speaking proficiency and vocabulary mastery, inferential statistics were employed.

The degree to which research tools accurately assess the desired constructs is known as validity (Budiastuti & Bandur, cited in Zanoubia, 2022). Before the instrument is given to the research subjects, validity testing is an essential part of quantitative research to make sure it measures what it is supposed to measure. Using quantitative principles that prioritize impartiality, evidence, precision, and numerical data, the validity of the instruments used in this study was empirically validated. To assess the validity of the instruments, thirty students were given them. IBM SPSS version 23, a statistical software program made to effectively handle and analyze complicated quantitative data through an intuitive graphical user interface, was used to perform the validity and reliability assessments.

The validity test was carried out in SMPN 1 Kroya's Class VIII. Participants were chosen at random by the researcher for the validity testing procedure. Thirty multiple-choice questions made up the instrument, which was given by hand. The validity and reliability of the measures were then assessed by using SPSS to evaluate the outcomes of the speaking ability and vocabulary mastery tests.

TABEL 3.1

The Validity Result Statistic of Students' Vocabulary Mastery

No. Item	Pearson Correlation	Significance Value	Conclusion	Interpretation
Question 1	0,511	0,004	Valid	Fair
Question 2	0,720	0,000	Valid	High
Question 3	0,628	0,000	Valid	High
Question 4	0,593	0,001	Valid	Fair
Question 5	0,549	0,002	Valid	Fair
Question 6	0,570	0,001	Valid	Fair
Question 7	0,574	0,001	Valid	Fair
Question 8	0,511	0,004	Valid	Fair
Question 9	0,627	0,000	Valid	High
Question 10	0,658	0,000	Valid	High
Question 11	0,472	0,009	Valid	Fair
Question 12	0,495	0,005	Valid	Fair
Question 13	0,739	0,000	Valid	High

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Question 14	0,520	0,003	Valid	Fair
Question 15	0,739	0,000	Valid	High
Question 16	0,568	0,001	Valid	Fair
Question 17	0,537	0,002	Valid	Fair
Question 18	-0,186	0,326	Invalid	Very Low
Question 19	0,674	0,000	Valid	High
Question 20	0,439	0,015	Valid	Fair
Question 21	-0,022	0,908	Invalid	Very Low
Question 22	0,739	0,000	Valid	High
Question 23	0,739	0,000	Valid	High
Question 24	-0,058	0,760	Invalid	Very Low
Question 25	0,615	0,000	Valid	High
Question 26	0,604	0,000	Valid	High
Question 27	-0,338	0,067	Invalid	Very Low
Question 28	-0,153	0,418	Invalid	Very Low
Question 29	0,669	0,000	Valid	High
Question 30	0,524	0,003	Valid	Fair

The questionnaire can be considered legitimate if the significance value is less than 0.05, according to the research findings for the validity test mentioned above. Thus, 25 questions are deemed legitimate and 5 are deemed invalid based on the relevance standards. Consequently, the following are legitimate questions according to their classification, and the researcher did not employ any faulty questions:

TABEL 3.2

Grid of vocabulary mastery test research instruments (After Validation)

No.	Variable	Indicator	No. Item	Amount
1	Vocabulary Mastery (Variable X)	Identify understanding of nouns and adjectives.	3,4,6,13,23, 29	6
2		Grammar (Arranging words into sentences correctly, to be compositions)	1,5,10,11,12, 15,30	7
3		Translate into English	14,16,17,19,20, 22,25,26	8
4		Antonyms and synonyms of adjectives	2,7,8,9	4
		Total		**25**

Using the IBM SPSS 23 application program, the findings of the validity test calculation for variable Y speaking ability are summarized as follows:

TABEL 3.3

The Validity Result Statistic of Students' Speaking Performance

No. Item	Pearson Correlation	Significace Value	Conclusion	Interpretation
1.Vocabulary	0,973	0,000	Valid	Very High
2.Pronunciation	0,961	0,000	Valid	Very High
3.Grammar	0,874	0,000	Valid	Very High
4.Fluency	0,974	0,000	Valid	Very High
5.Comprehension	0,832	0,000	Valid	Very High

According to the research findings for validity testing, the questionnaire can be regarded as legitimate if the significance value is less tan 0.05. Therefore, all of the aforementioned things are considered legitimate in accordance with significance requirements. As a result, the researchers used every item from the test equipment. The grid and form of the instrument are displayed in the table below.

Table 3.4

Grid of speaking ability test research instruments (After Validation)

No	Variable	Indicator	Form of the instrument	Instrument
1	Speaking ability	Vocabulary	Performance	Test (Oral)
2		Pronunciation		
3		Grammar		
4		Fluency		
5		Comprehension		

In order for the reliability test to accurately assess the items' applicability, reliability refers to the consistency score findings for the items included in the questionnaire or instrument utilized. Measuring the consistency of measuring instruments used in quantitative research is the primary goal of research instrument reliability testing. The purpose of this study is to determine whether measurement results from the same sample taken at different periods are accurate. To put it another way, a research tool—like multiple-choice questions— is considered dependable if it can yield consistent scores for every measurement. In order to ascertain the instrument's reliability, the researchers attempted to apply the Cronbach's Alpha formula in the IBM SPSS 23 application. The Cronbach's Alpha formula looks like this:

$$r_{11} = \frac{k}{k-1} \; x \left\{1 - \frac{\sum S_i}{S_t}\right\}$$

Source, Arikunto (2013,239).

r11 = Reliability value

∑Si = Total variance in scores for each item

St = Total variance

k = Number of ítems

An instrument is considered dependable if its reliability coefficient (r11) is more than 0.7. If the instrument's Cronbach's Alpha reliability coefficient is more than 0.7, it is considered reliable. Reliability coefficients fall into the following categories:

The reliability test results for variable Y, speaking ability, using the IBM SPSS 23 application program, are summarized as follows:

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Picture 3.1. The Reliability Result Statistic of Students' Speaking Ability

Reliability Statistics

Cronbach's Alpha	N of Items
.936	5

Table 3.5. Cronbach's Alpha Reality Coefficient Category

Scale	Criteria
0,80- 1.00	Very high
0,60- 0,80	High
0,40 -0,60	Medium
0,20- 0,40	Low
-1,00- 0.20	Very low

Source: Guilford (1956:145)

The reliability test results for variable X, which is vocabulary mastery using the IBM SPSS 23 application program, are summarized as follows:

Picture 3.1. The Reliability Result Statistic of Students' Vocabulary Mastery

Reliability Statistics

Cronbach's Alpha	N of Items
.880	30

According to the preceding table, the 30-question test is considered reliable. According to the reference values in the Cronbach's Alpha Reality Coefficient Category table, the questionnaire instrument has a strong correlation coefficient because its reliability coefficient is r11 = 0.880 > 0.7.

As shown in the table above, the instrument's five questions indicate reliability. According to the reference values in the Cronbach's Alpha Reality Coefficient Category table, the questionnaire instrument has a strong correlation coefficient since its reliability coefficient is r11 = 0.936 > 0.7.

A population is a broad category made up of items or people with certain attributes chosen by the researcher to be investigated and conclusions made. The study's population consists of all 305 students from SMPN 1 Kroya class VIII for the 2024–2025 school year, spread across nine classrooms.

Table 3.7. Population of class VIII students at SMPN 1 KROYA

No	Class	Gender of Students		Amounts
		Male	Female	
1	VIII A	14	18	32
2	VIII B	15	19	34
3	VIII C	14	20	34
4	VIII D	15	20	35
5	VIII E	16	19	35
6	VIII F	15	19	34
7	VIII G	14	20	34
8	VIII H	15	19	34
9	VIII I	16	17	33
	Total			305

Cluster sampling is a sort of probability sampling in which the members selected are a group of people who naturally collaborate rather than individuals. The sample size for this study was 67 students, or 22% of the 305 total. This study employed cluster random sampling as its sampling method. If the item to be utilized as a data source is extremely vast, the sample is chosen using cluster random sampling. Samples are grouped by class using the cluster random sampling technique, and then the classes are randomized to choose which class will be utilized to collect data.

Table 3.8. Sample of class VIII students at SMPN 1 KROYA

No	Class	Gender of Students		Amounts
		Male	Female	
1	VIII A	14	18	32
2	VIII D	15	20	35
	Total			67

Two classes are used as samples in this study, resulting in a total sample size of 67 individuals from a student population of 305 (22%).

Data sources are essential for both ensuring success and supporting research implementation.

Two sources provide the necessary data for this study, specifically:

a. Primary data source. Primary sources are those that give researchers the information they need to obtain it directly. The test results of SMPN 1 KROYA pupils in classes VIII A and VIII D served as the main source of data for this study.

b. Secondary data source. The researchers used two theses as the primary sources of information for this study. In June 2022, the English Department Faculty of Tarbiyah and Teacher Training State Institute of Islamic Studies of Ponorogo completed its first thesis, "The Correlation Between Students' Vocabulary Mastery and Students' Speaking Ability in Learning English at SMK Minhajut Thullab Dolopo Madiun," Second, a thesis titled "The Correlation Between Students' Vocabulary Mastery and Their Speaking Ability at the Second Semester of The Eleventh Grade of SMA Negeri 17 Bandar Lampung in the Academic Year of 2019/2022" from the English department Tarbiyah and Teacher Training Faculty Raden at Tan State Islamic University uses worksheets and interview responses as data sources. The two theses' discussion of translation clarity serves as the main source of information for this study.

The correlation test is the statistical analysis method employed in this study. IBM SPSS 23 is used for the data analysis method. Data analysis for the necessary tests—the homogeneity, linearity, and normalcy tests—is completed prior to evaluating the hypothesis. Here is a list of prerequisite exams: Kolmogorov-Smirnov is used in this study's normalcy test since it is better suited for samples larger than 50.

1). Test significance ($\propto$) = 0.05
2). If Sig. > $\propto$, then the sample comes from the population normally distributed.

If Sig. < $\propto$, then the sample does not come from the population normally distributed. To ascertain if a dependent variable and a collection of independent variables have a linear relationship, one test is the linearity test, Singgih Santoso (in Febryani, 2020). The Test for Linearity device's SPSS program can also be used for linearity testing. The following significant values are used in the analysis technique at the 95% significance level (α = 0.05), Sahid Raharjo, (2021).

1). If the sig value. > 0.05, then the variables have a linear relationship.
2). If the sig value. < 0.05, then the variable has a nonlinear relationship.

The Levene Test, or the test of homogeneity of variance, is the technique employed in this study to assess data homogeneity. The criteria listed below are used to assess homogeneity:

1) Test significance ($\propto$) = 0.05
2) If Sig. > $\propto$, then the variance of each sample is the same (homogeneous)
3) If Sig. < $\propto$, then the variance of each sample is not the same (no homogeneous).

The goal of data analysis is to derive research findings. Following a normalcy test, the researcher attempted to examine the hypothesis in this study using correlational analysis, specifically Pearson's Product Moment correlation. Finding the relationship between students' speaking proficiency and vocabulary mastery is the goal of this study. A popular method for figuring out how two variables are correlated is Pearson's Product Moment Correlation. Using the algorithm to determine the relationship (correlation) between class VIII pupils at SMPN 1 KROYA's vocabulary mastery and speaking ability, Anwar Hidayat, (2012).

$$r_{xy} = \frac{n\sum XY - (\sum X)(\sum Y)}{\sqrt{\{n\sum X^2 - (\sum X)^2\}\{n\sum Y^2 - (\sum Y)^2}}$$

Information
N = number of samples
Σx = number of variables X Σy = number of Y vaariables
Σxy = number of variables X times variables

Data Description about Students' Vocabulary Mastery at the Eighth Grade of SMPN 1 Kroya. The instrument used to measure this data description is a multiple-choice test. Students were asked to identify nouns and adjectives based on the question's statement by the researchers. There were 32 students in class eight A who took the first test, however two of them were not present when the study was conducted. In this study, the test for class eight A was completed by thirty individuals. There were 35 students in class eight D, but only 32 of them showed up, therefore a total of 62 samples were collected.

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Table 4.1. The Score of Students' Vocabulary Mastery at SMPN 1 Kroya

No	Name	L / P	Class	Score
1	Adelya Oktapiani	P	VIII A	44
2	Alda Renanda Putri	P	VIII A	60
3	Alif Fattan Affandi	L	VIII A	36
4	Al-Malikul Mulki	L	VIII A	52
5	Anggita Naya Purnika Putri	P	VIII A	100
6	Danar Masaji	L	VIII A	92
7	Dicky Ahmad Fadhilah	L	VIII A	68
8	Dinan Pratama Dharmawan	L	VIII A	48
9	Faiz Allaudin Aflah	L	VIII A	68
10	Haji Atun Nisah	P	VIII A	40
11	Hendra Kurniawan	L	VIII A	48
12	Ike Tiara Sari	P	VIII A	44
13	Lusi Yana	P	VIII A	76
14	Marvin Puja Pratama	L	VIII A	88
15	Muhamad Ramadhani	L	VIII A	44
16	Nimas Burhani Masayu	P	VIII A	76
17	Nisa Oktaviana	P	VIII A	48
18	Petra Dida Cavarela	L	VIII A	52
19	Qurrotul Aini	P	VIII A	56
20	Reyhan Aditia	L	VIII A	36
21	Rois	L	VIII A	76
22	Rozikin	L	VIII A	48
23	Seli Maharani	P	VIII A	60
24	Setia Wati	P	VIII A	36
25	Silviah	P	VIII A	48
26	Sintya Khairunnisa	P	VIII A	56
27	Slavina Najuari	P	VIII A	48
28	Sodikin	L	VIII A	44
29	Thasya Puspita	P	VIII A	40
30	Widia Valova	P	VIII A	48
31	Anis Sudrajat	P	VIII D	44
32	Anitha Syalia	P	VIII D	36
33	Arlina Dwi Putri	P	VIII D	52
34	Asrof Fudin	L	VIII D	48
35	Aurel Riska Rahayu	P	VIII D	40
36	Dea Afita	P	VIII D	60
37	Dede Silvania	P	VIII D	36
38	Dewi	P	VIII D	32
39	Efan Widianto	L	VIII D	40
40	Erbi Hoirul Mufasir	L	VIII D	32
41	Fathan Sudikin	L	VIII D	44

No	Name	L / P	Class	Score
42	Iqbal Aditia Wijaya	L	VIII D	52
43	Irwandi Adhinata	L	VIII D	36
44	Kartika Pita Laura	P	VIII D	48
45	Kevin Aldi Pratama	L	VIII D	72
46	Laura Kasih	P	VIII D	40
47	Nico Wilson Andrean	L	VIII D	60
49	Nur Muhamad	L	VIII D	44
50	Perdikha Prasetya Putra	L	VIII D	32
51	Prayogi	L	VIII D	48
52	Rehsiya Shafirra	P	VIII D	60
53	Rena Putri Novita Sari	P	VIII D	56
54	Rhania Shinta	P	VIII D	24
55	Riska Ujmainah	P	VIII D	64
56	Ruli Asti Ananta	P	VIII D	44
57	Safah Sri Rahayu	P	VIII D	40
58	Shindy Auliyanti	P	VIII D	64
59	Suhendra Trustianto	L	VIII D	76
60	Tahrudin	L	VIII D	40
61	Tanto Wiyahya	L	VIII D	68
62	Wulan Triani	P	VIII D	76
	TOTAL SCORE			3240

3240 total scores were obtained from data collected using a sample size of 62 students. The full data from the analysis's outcomes using the SPSS 23 software is then shown in the figure below.

Picture 4.1. The statistic Table of students' Vocabulary Mastery.

Statistics

VOCABULARY

N	Valid	62
	Missing	0
Mean		52.26
Std. Error of Mean		1.998
Median		48.00
Mode		48
Std. Deviation		15.733
Variance		247.539
Range		76
Minimum		24
Maximum		100
Sum		3240

The 62 respondents' total score is 3240, as can be seen in the table above. Using SPSS versión 23, the average score for students' vocabulary mastery is 52.26, the median is 48, the range is 76, the minimum score is 24, and the maximum score is 100.

Table 4.2. The Analysis of Students' Vocabulary Mastery

		Frequency	Percent	Valid Percent	Cumulative Percent
V	24	1	1.6	1.6	1.6
A	32	3	4.8	4.8	6.5
L	36	6	9.7	9.7	16.1
I	40	7	11.3	11.3	27.4
D	44	8	12.9	12.9	40.3
	48	10	16.1	16.1	56.5
	52	5	8.1	8.1	64.5
	56	3	4.8	4.8	69.4
	60	5	8.1	8.1	77.4
	64	2	3.2	3.2	80.6
	68	3	4.8	4.8	85.5

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	72	1	1.6	1.6	87.1
	76	5	8.1	8.1	95.2
	88	1	1.6	1.6	96.8
	92	1	1.6	1.6	98.4
	100	1	1.6	1.6	100.0
	Total	62	100.0	100.0	

Table 4.3. The Categorization of Students' Vocabulary Mastery

No	Score	Frequency	Percentage	Category
1	≥ 68	12	19,35%	Good
2	37 - 67	40	64,52%	Moderate
3	<37	10	16,13%	Low
Total		62	100%	

The earlier graph shows that 12 pupils, or 19.35% of the total, fall into the good category. In the meantime, 16.13%, or 10 students, fell into the low vocabulary category, and 64.52%, or 40 students, fell into the medium or moderate category. We can therefore draw the conclusion that the majority of the class VIII pupils at SMPN 1 Kroya fall into the medium or average category, with a wide range of vocabulary competence.

Data Description about Students' Speaking Ability at the Eighth Vocabulary, pronunciation, grammar, fluency, and comprehension were the five aspects on which the researcher collected student speaking ability test scores for this study. These scores were then applied to Excel formulas, where each category of the five aspects had its own points—25 points for vocabulary, 25 points for pronunciation, 15 points for grammar, 20 points for fluency, and 15 points for comprehension. in order for all students to receive a total of 100 points if they can speak flawlessly. The speaking score information is as follows:

Table 4.4. The Score of Students' Speaking Ability at SMPN 1 Kroya

No	Name	L / P	Class	core
1	Adelya Oktapiani	P	VIII A	46
2	Alda Renanda Putri	P	VIII A	56
3	Alif Fattan Affandi	L	VIII A	31
4	Al-Malikul Mulki	L	VIII A	54
5	Anggita Naya Purnika Putri	P	VIII A	100
6	Danar Masaji	L	VIII A	95
7	Dicky Ahmad Fadhilah	L	VIII A	69
8	Dinan Pratama Dharmawan	L	VIII A	50
9	Faiz Allaudin Aflah	L	VIII A	71
10	Haji Atun Nisah	P	VIII A	44
11	Hendra Kurniawan	L	VIII A	44
12	Ike Tiara Sari	P	VIII A	46
13	Lusi Yana	P	VIII A	79
14	Marvin Puja Pratama	L	VIII A	90
15	Muhamad Ramadhani	L	VIII A	44
16	Nimas Burhani Masayu	P	VIII A	79
17	Nisa Oktaviana	P	VIII A	48
18	Petra Dida Cavarela	L	VIII A	56
19	Qurrotul Aini	P	VIII A	61
20	Reyhan Aditia	L	VIII A	33
21	Rois	L	VIII A	77
22	Rozikin	L	VIII A	46
23	Seli Maharani	P	VIII A	60
24	Setia Wati	P	VIII A	29

25	Silviah	P	VIII A	55
26	Sintya Khairunnisa	P	VIII A	62
27	Slavina Najuari	P	VIII A	50
28	Sodikin	L	VIII A	40
29	Thasya Puspita	P	VIII A	44
30	Widia Valova	P	VIII A	52
31	Anis Sudrajat	L	VIII D	44
32	Anitha Syalia	P	VIII D	44
33	Arlina Dwi Putri	P	VIII D	52
34	Asrof Fudin	L	VIII D	54
35	Aurel Riska Rahayu	P	VIII D	50
36	Dea Afita	P	VIII D	61
37	Dede Silvania	P	VIII D	36
38	Dewi	P	VIII D	33
39	Efan Widianto	L	VIII D	42
40	Erbi Hoirul Mufasir	L	VIII D	31
41	Fathan Sudikin	L	VIII D	41
42	Iqbal Aditia Wijaya	L	VIII D	44
43	Irwandi Adhinata	L	VIII D	39
44	Kartika Pita Laura	P	VIII D	52
45	Kevin Aldi Pratama	L	VIII D	77
46	Laura Kasih	P	VIII D	44
47	Nico Wilson Andrean	L	VIII D	63
48	Nina Puspita	P	VIII D	50
49	Nur Muhamad	L	VIII D	52
50	Perdikha Prasetya Putra	L	VIII D	42
51	Prayogi	L	VIII D	46
52	Rehsiya Shafirra	P	VIII D	66
53	Rena Putri Novita Sari	P	VIII D	56
54	Rhania Shinta	P	VIII D	25
55	Riska Ujmainah	P	VIII D	72
56	Ruli Asti Ananta	P	VIII D	48
57	Safah Sri Rahayu	P	VIII D	48
58	Shindy Auliyanti	P	VIII D	74
59	Suhendra Trustianto	L	VIII D	79
60	Tahrudin	L	VIII D	44
61	Tanto Wiyahya	L	VIII D	79
62	Wulan Triani	P	VIII D	84
	TOTAL SCORE			3383

Picture 4.3. The Statistic Table of Students' Speaking Ability

Statistics

SPEAKING

N	Valid	62
	Missing	0
Mean		54.56
Std. Error of Mean		2.130
Median		50.00
Mode		44
Std. Deviation		16.771
Variance		281.266
Range		75
Minimum		25
Maximum		100
Sum		3383

It is evident from the above chart that the 62 respondents' combined score was 3383. The average score for students' speaking ability is 54.56, the median is 50, the range is 75, the minimum score for students' speaking ability is 25, and the maximum score for students' vocabulary mastery is 100, according to SPSS version 23.

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Table 4.5. The Analysis of Students' Speaking Ability

		Frequency	Percent	Valid Percent	Cumulative Percent
VALID	25	1	1.6	1.6	1.6
	29	1	1.6	1.6	3.2
	31	2	3.2	3.2	6.5
	33	2	3.2	3.2	9.7
	36	1	1.6	1.6	11.3
	39	1	1.6	1.6	12.9
	40	1	1.6	1.6	14.5
	41	1	1.6	1.6	16.1
	42	2	3.2	3.2	19.4
	44	9	14.5	14.5	33.9
	46	4	6.5	6.5	40.3
	48	3	4.8	4.8	45.2
	50	4	6.5	6.5	51.6
	52	4	6.5	6.5	58.1
	54	2	3.2	3.2	61.3
	55	1	1.6	1.6	62.9
	56	3	4.8	4.8	67.7
	60	1	1.6	1.6	69.4
	61	2	3.2	3.2	72.6
	62	1	1.6	1.6	74.2
	63	1	1.6	1.6	75.8
	66	1	1.6	1.6	77.4
	69	1	1.6	1.6	79.0
	71	1	1.6	1.6	80.6
	72	1	1.6	1.6	82.3
	74	1	1.6	1.6	83.9
	77	2	3.2	3.2	87.1
	79	4	6.5	6.5	93.5
	84	1	1.6	1.6	95.2
	90	1	1.6	1.6	96.8
	95	1	1.6	1.6	98.4
	100	1	1.6	1.6	100.0
	Total	62	100.0	100.0	

Table 4.6. The Categorization of Students' Speaking Ability

No.	Score	Frequency	Percentage	Category
P1	≥ 71	13	20,97%	Good
2	38 -70,	42	67,74%	Moderate
3	<38	7	11,29%	Low
Total		62	100%	

It is evident from the preceding table that 13 pupils, or 20.97% of the total, fall into the "good" group. In the meantime, 11,29%, or 7 students, fell into the low speaking category, and 67,74%, or 42 students, fell into the medium or moderate category. We can therefore draw the conclusion that the majority of the class VIII pupils at SMPN 1 Kroya fall into the medium or average category, with a wide range of speaking abilities**.**

FINDINGS AND DISCUSSION

The researchers must first decide whether to employ parametric or non-parametric statistical tests in order to evaluate a statistical hypothesis**,** Supardi (in Usmadi, 2020). Analysis requirements tests must be performed when utilizing parametric and non-parametric statistical tests. Tests for linearity, variance homogeneity, and normality are necessary when using parametric inferential statistical tests. What is the relationship between students' speaking proficiency and vocabulary mastery in class VIII at SMPN 1 KROYA? Using the SPSS software, researchers examined both sets of data using Pearson Product Moment Correlation. The following table shows the correlation betweenstudents' speaking ability and vocabulary mastery scores.

Table 4.7

The Correlation Data of Students' Vocabulary Mastery and Students' Speaking Ability

No	Name	Vocabulary (X)	Speaking (Y)
1	Adelya Oktapiani	44	46
2	Alda Renanda Putri	60	56
3	Alif Fattan ffandi	36	31
4	Al-Malikul Mulki	52	54
5	Anggita Naya Purnika Putri	100	100
6	Danar Masaji	92	95
7	Dicky Ahmad Fadhilah	68	69
8	Dinan Pratama Dharmawan	48	50
9	Faiz Allaudin Aflah	68	71
10	Haji Atun Nisah	40	44
11	Hendra Kurniawan	48	44
12	Ike Tiara Sari	44	46

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No	Name	Vocabulary (X)	Speaking (Y)
13	Lusi Yana	76	79
14	Marvin Puja Pratama	88	90
15	Muhamad Ramadhani	44	44
16	Nimas Burhani Masayu	76	79
17	Nisa Oktaviana	48	48
18	Petra Dida Cavarela	52	56
19	Qurrotul Aini	56	61
20	Reyhan Aditia	36	33
21	Rois	76	77
22	Rozikin	48	46
23	Seli Maharani	60	60
24	Setia Wati	36	29
25	Silviah	48	55
26	Sintya Khairunnisa	56	62
27	Slavina Najuari	48	50
28	Sodikin	44	40
29	Thasya Puspita	40	44
30	Widia Valova	48	52
31	Anis Sudrajat	44	44
32	Anitha Syalia	36	44
33	Arlina Dwi Putri	52	52
34	Asrof Fudin	48	54
35	Aurel Riska Rahayu	40	50
36	Dea Afita	60	61
37	Dede Silvania	36	36
38	Dewi	32	33
39	Efan Widianto	40	42
40	Erbi Hoirul Mufasir	32	31
41	Fathan Sudikin	44	41
42	Iqbal Aditia Wijaya	52	44
43	Irwandi Adhinata	36	39
44	Kartika Pita Laura	48	52
45	Kevin Aldi Pratama	72	77
46	Laura Kasih	40	44
47	Nico Wilson Andrean	60	63

No	Name	Vocabulary (X)	Speaking (Y)
48	Nina Puspita	52	50
49	Nur Muhamad	44	52
50	Perdikha Prasetya Putra	32	42
51	Prayogi	48	46
52	Rehsiya Shafirra	60	66
53	Rena Putri Novita Sari	56	56
54	Rhania Shinta	24	25
55	Riska Ujmainah	64	72
56	Ruli Asti Ananta	44	48
57	Safah Sri Rahayu	40	48
58	Shindy Auliyanti	64	74
59	Suhendra Trustianto	76	79
60	Tahrudin	40	44
61	Tanto Wiyahya	68	79
62	Wulan Triani	76	84
N = 62		**∑X = 3240**	**∑Y = 3383**

DISCUSSION.

The purpose of this study was to investigate the importance of the connection between students' speaking skills and vocabulary mastery. The null hypothesis may be rejected based on the t significance test results, which show that the tcount value is greater than the ttable value at a 5% significance level (dk = n − 2 = 110). According to Ghozali, as quoted in Koilam et al. (2023), this result validates the statistically significant association between vocabulary mastery and speaking skill, as well as the generalizability of this relationship.

The results show that speaking ability and vocabulary mastery are strongly correlated, even beyond statistical significance. Major theories in language learning that highlight vocabulary as a fundamental element of oral communication are supported by this study. Nation (2001) asserts that vocabulary knowledge is essential to language use because it allows students to comprehend and make meaningful statements. Similar to this, Thornbury (2005) contends that lexical availability plays a major role in speaking fluency; learners with a little vocabulary frequently find it difficult to articulate concepts, even when they are aware of grammatical structures.

Communicative competency, according to speaking theory, necessitates both grammatical correctness and an adequate vocabulary to successfully communicate meaning (Canale & Swain, 1980). In this situation, pupils who have mastered a larger vocabulary are better able to choose suitable words, construct cohesive sentences, and react naturally when speaking. This explains why children who have a larger vocabulary typically perform better while speaking in terms of confidence, correctness, and fluency.

By demonstrating that vocabulary knowledge is a significant predictor of speaking ability in a larger sample size and distinct educational context, the current study validates these findings. However, the sample size and sampling method used in this study are different from those used in several other studies. The results are more broadly applicable because this study employed cluster sampling and had 62 individuals, whereas previous research frequently used smaller samples or single classes. Despite these variations, the findings consistently demonstrate how important vocabulary mastery is to speaking ability.

In conclusion, this study's substantial association supports the theoretical premise that mastering vocabulary is essential to improving

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speaking abilities. Students that have a large vocabulary are better able to communicate, participate in conversational conversations, and express themselves. Thus, the focus of English language instruction should be on vocabulary development in order to enhance students' speaking abilities.

CONCLUSION

In correlation research, a correlation coefficient between 0.70 and 0.90 is typically regarded as high. The current study looked at the relationship between speaking ability (Y) and vocabulary mastery (X) among students at SMPN 1 Kroya. The results showed a very significant positive relationship between the two variables, with a correlation coefficient of r = 0.969. This finding implies that pupils who are more proficient in vocabulary tend to talk more fluently. Additionally, a sample of 62 pupils yielded a significance value of 0.000. The alternative hypothesis (H_1) is accepted and the null hypothesis (H_0) is rejected because the significance value is less than the predefined alpha level of 0.05 (0.000 < 0.05). This result demonstrates that students' vocabulary knowledge and speaking proficiency at SMPN 1 Kroya are statistically correlated.

The results suggest that since increasing students' vocabulary knowledge can significantly improve their speaking ability, EFL teachers should emphasize systematic vocabulary education as a crucial component of speaking exercises.

To ascertain the causal association between vocabulary mastery and speaking ability, as well as to examine other variables like motivation or classroom interactions that can affect speaking proficiency, future research is advised to examine this relationship using experimental or longitudinal designs..

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