THE CORRELATION BETWEEN VOCABULARY MASTERY AND LISTENING SKILLS OF VOCATIONAL HIGH SCHOOL STUDENTS

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Abstract

This study aims to determine the relationship between vocabulary ability and listening skills of eleventh grade students at a vocational school in Palu. The researcher used a quantitative research method with purposive sampling technique. Data were collected through tests. The results of data analysis showed that there was a strong relationship between vocabulary ability and listening skills of students. This is evident from the calculated r-value ($r_{counted}$ 13.294), which is significantly higher than the table r-value (r_{table} 0.553). The correlation coefficient found was 0.874, indicating a very strong relationship. However, this study also found that the majority of students had very low levels of vocabulary and listening skills. As many as 46.67% of students scored below 50 for vocabulary, and 60% of students scored below 50 for listening skills. They often had difficulty distinguishing between words that sounded similar or did not know the meaning of basic words.

Keywords: Correlation, Vocabulary, Ability, Listening Skill.

BACKGROUND

Vocabulary is one of the English components or sub-skills that must be taught to the learners, because vocabulary has a primary role in all languages. Students' grammar proficiency becomes irrelevant, and meaningful communication becomes impossible if they do not possess sufficient vocabulary. The ability to understand both spoken and written materials, as well as the ability to learn the meanings and potential uses of new words, are all dependent on vocabulary (Nugroho & Arini, 2021).

Evidently, a foundational vocabulary is essential for English comprehension. Regardless of a student's grammatical expertise, a limited vocabulary hinders their overall English proficiency, impeding effective communication. This highlights vocabulary as a critical language component for successful communication. A robust vocabulary is crucial for excelling in English, enabling comprehension of diverse materials and facilitating the acquisition of new words and their applications (Rafiqa, 2017).

Moreover, Langan and Albright (2020) state that a robust vocabulary is integral to effective communication, enhancing writing, speaking, listening, and reading skills. This underscores the pivotal role of vocabulary in students' English communication skills. Furthermore, Manangkari (2018) notes that vocabulary expands continuously. This suggests that students progressively acquire new words through ongoing language experiences. Consequently, the continuous expansion of a student's lexicon directly contributes to the refinement and enhancement of their overall English communication skills, enabling more nuanced and effective expression (Qunayeer, 2021).

Listening skill is the ability to understand spoken language, crucial for various activities such as listening to the radio, understanding foreign visitors, and studying. Developing this skill requires ample practice in listening to English spoken at a normal pace. In essence, listening skill is an essential component of communication, enabling comprehension of spoken language in various contexts.

Cultivating a habit of listening can enhance pronunciation, sharpen memory, expand vocabulary, and improve speaking ability. While studying English facilitates communication, individuals can also effectively learn the language through imitation by listening, even without formal instruction. For instance, in some regions, individuals acquire English proficiency simply by listening to tourists.

Logically, there is a significant correlation between vocabulary mastery and listening ability. According to Wise et al. (2007), expressive vocabulary knowledge and listening comprehension skills were found to be independently related to word identification abilities. This suggests that a sophisticated lexicon not only enhances comprehension of spoken language but also refines the cognitive processes involved in decoding and recognizing individual words within a stream of speech (Haixia, 2015). The capacity to swiftly and accurately identify words is intricately linked to a more profound understanding of their meanings and nuances, thereby enabling students to derive greater meaning from auditory input (Arsid et al., 2022).

Vocabulary enrichment empowers students to master a language, facilitating effective communication through diverse word choices (Pamungkas et al., 2022). This principle is particularly relevant to the students of SMK Muhammadiyah 1 Palu, where preliminary research indicates that many students struggle with listening and vocabulary, especially with verb terms, leading to issues such as mishearing, misunderstanding, and incomprehension.

This is evident in the mistakes they make when distinguishing similar-sounding words, such as "bake" and "back," "mad" and "made," or "set" and "seat."

The reciprocal relationship between listening comprehension and vocabulary acquisition is vital for language learners (Harsa et al., 2020). Therefore, the researcher aimed to determine whether students' mastery of vocabulary, particularly verbs, enhances their listening ability, and to ascertain if a positive correlation exists between vocabulary and listening skills among eleventh-grade students at SMK Muhammadiyah 1 Palu. This study specifically investigates the extent to which students' verb mastery improves their listening skills and whether a notable positive correlation exists between vocabulary proficiency and listening comprehension among the aforementioned students. Based on the issues outlined, language acquisition varies among individuals, potentially due to limited vocabulary, unfamiliar accents, or the rapid pronunciation of native speakers in listening materials.

Referring to the background above, the researcher formulated the research question as follow:

Is there any positive high significant correlation between vocabulary ability and listening skill of the eleventh grade of SMK Muhammadiyah 1 Palu?

The objective of this research was to determine whether there is a significant positive correlation between vocabulary ability and listening skills among eleventh-grade students at SMK Muhammadiyah 1 Palu. This study aims to statistically measure and confirm the extent to which students' vocabulary proficiency influences their listening comprehension. The results of this study provide an empirical basis for pedagogical approaches that integrate vocabulary enhancement with listening skill development.

METHOD OF THE RESEARCH

In this study, the research method used is quantitative. Creswell & Creswell (2017) explain that one form of non-experimental quantitative research is correlational design. In this design, researchers use correlational statistics to describe and measure the level of relationship or association between two or more variables. Furthermore, Fraenkel and Wallen (2000:359) define correlational research as research that aims to determine the relationship between two or more variables and explore its implications for cause and effect. This research involves two types of variables, namely independent variables (X) and dependent variables (Y), because it is a type of symmetrical correlation.
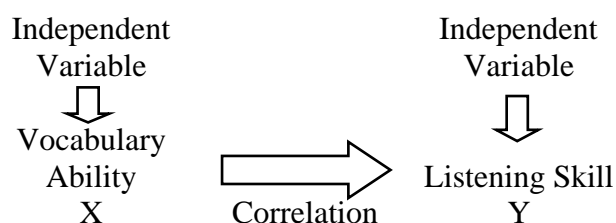
The researcher had chosen the eleventh grade of SMK Muhammadiyah 1 Palu as the population of the research, 177 students. The distribution is in the following table.

Table 1. Research Population

No.	Classes	Number of student
1	Perbankan Syariah (PBS)	28
2	Desain Permodelan dan Informasi Bangunan	27
4	Teknik Otomotif A	27
5	Teknik Otomotif B	27
6	Teknik Jaringan dan Komputer A (TKJ A)	29
7	Teknik Jaringan dan Komputer B (TKJ B)	28
8	Desain Komunikasi Visual	16
9	Farmasi Klinis dan Komunitas	23
	Total	177

Sample is the group of elements, from which data are obtained (Mcmillan, 1996:86). The researcher used a purposive sampling technique for gathering samples. The researcher had taken the eleventh grade of design visual communication population to become the sample of research, because the population in this class is the least and the ability of the students is homogeneous. According to Best and Khan (2006:167), variables are conditions or characteristics that are manipulated, controlled, or observed by researchers. In other words, variables are fundamental aspects of research that researchers use to process research data. In this study, there are two variables: vocabulary ability, symbolised as (X), and listening skill, symbolised as (Y).

The researcher used two kinds of research instrument. They are listening test items and word set solationitoisupport the data. The vocabulary test used as a main instrument. The tests are objective and subjective test. The researcher was getting the data after conducting the test.

The researcher used tests as the main instruments of this research to measure students' knowledge and to get the objective score. In the scoring objective test, the researcher was given a score of 1 for each correct and 0 for the incorrect. Astuti (2010: 8) says that, there are some questioning types in order to measure the comprehension skill.

The researcher broadcasted two kinds of words that have similar sound to the students, and then the students circle the correct word that they hear from the audio.

Table 2. The Scoring System of Listening Skill (Y)

Type of test	Number of items	Score per items		Maximum Score
		correct	incorrect	
Word sets isolation	20	1	0	20

Vocabulary tests are specifically designed to collect data on students' vocabulary proficiency levels. The type of

test used is an objective test, specifically in a multiple-choice format. The main feature of this type of objective test is that each question has a clear correct or incorrect answer, allowing for objective assessment without subjective interpretation by the evaluator. As a result, the test results are expected to provide an accurate picture of the vocabulary skills possessed by the students.

Table 3. The Scoring System of Vocabulary Ability Test (X)

| Type of test | Number of items | Score per items | | Maximum Score |
		correct	incorrect	
Multiple Choice	15	1	0	15

The obtained data were analyzed statistically with the following step. Firstly, to determine the individual score, the researcher used the formula by Sutomo (2012) as follows:

$$Score = \frac{the\ obtain\ score}{the\ maximum\ score}\ x\ 100$$

To determine the level of correlation between vocabulary ability and listening skills, the researcher used Pearson's Product Moment Correlation analysis, in accordance with the method proposed by Sugiyono (2013) as follows:

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

Where :
r = Product moment correlation
x = Vocabularies Ability
y = Listening skill
rx^y = Pearson r
$\sum X$ = The sum of score in X - distribution
$\sum Y$ = The sum of cores in Y – distribution
$\sum XY$ = The sum of product of paired X – Y – Scores
$\sum X^2$ = The sum of squared scores in X – distribution
$\sum Y^2$ = The sum of squared scores in Y – distribution
N = The number of paired X – Y – scores (subjects)

To interpret the result of the coefficient value of two paired variables, the researcher used criteria for evaluation and interpretation of a coefficient correlation.

Tabel 4. Interpretation of Coefficient Correlation

Coefficient (r)	Relationship
0.0 to 0.20	Negligible
0.20 to 0.40	Low
0.40 to 0.60	Moderate
0.60 to 0.80	Substantial
0.80 to 1.00	High to very high

(Sugiyono, 2013)

In order to figure out whether there is significant correlation between the vocabulary ability (variable X) and listening skill (variable Y), the researcher used the hypothesis testing by using the formula proposed by Sugiyono (2013).

$$tr = \frac{r\sqrt{N-2}}{\sqrt{1-r^2}}$$

Where:
tr = the coefficient correlation
N = number of students
Remark:
tr becomes $r_{counted}$

The criteria for testing hypotheses in this study are as follows: if the $r_{counted}$ value obtained from statistical calculations is higher than the r_{table} value at a certain level of significance, this indicates that the alternative hypothesis (Ha) of this study is accepted. In other words, it can be concluded that there is a significant relationship or correlation between the two variables studied. Conversely, if the $r_{counted}$ value is found to be lower than the r_{table} value, this means that the alternative hypothesis is rejected. Consequently, there is no significant correlation between the two variables, indicating that the observed relationship may be coincidental or not strong enough to be considered statistically significant.

FINDING AND DISCUSSION

Findings

The researcher gave the test to the students, there were some students that didn't attend the class. So, the population of the research was not complete. Actually the students of DKV (Design Communication Visual) XI are 16 students, but only 15 students attended the class, so the population in the class was 15 students.

To evaluate the level of students' competence in vocabulary, the researcher administered a series of objective tests. These tests specifically consisted of 15 multiple-choice questions. Although all students were able to answer every question, some of them gave incorrect answers. After analysing the test results, the researcher concluded that the students' overall achievement in vocabulary was very low. This is evident from the fact that 7 students, or approximately 46.67% of the total population tested, scored below 50 on the multiple-choice test. This condition indicates a significant weakness in basic vocabulary mastery among the students studied.

Listening Skill test was given by the researcher to find out student's listening skill. The researcher is broadcasted two kinds of words that have similar sound to the students and then the students circle the correct word that they hear from the audio. The researcher considered the student achievement in listening skill was very poor because 9 or 60% of students who got score less than 50 in the listening skill test.

In order to find out the significant correlation between a student's vocabulary ability and listening skill. The researcher presented both of the result in the following table.

Table 5. The score of variable X and Y

No.	Student' Initials	X	Y	XY	X^2	Y^2
1	AS	80	80	6400	6400	6400
2	HU	87	60	5220	7569	3600
3	RAL	100	90	9000	10000	8100
4	NL	53	65	3445	2809	4225
5	VR	74	85	6290	5476	7225
6	YA	40	50	2000	1600	2500
7	MAH	53	40	2120	2809	1600
8	ANK	46	40	1840	2116	1600
9	HA	87	80	6960	7569	6400
10	FZ	46	45	2070	2116	2025
11	MPA	46	46	2116	2116	2116
12	IRSS	53	35	1855	2809	1225
13	FRN	46	45	2070	2116	2025
14	AH	46	45	2070	2116	2025
15	FRY	46	35	1610	2116	1225
TOTAL (Σ)		903	841	55066	59737	52291

After all data from the test results were collected, the researcher then applied the Pearson Product Moment correlation coefficient formula. This statistical method was used to measure and determine the level of relationship between students' vocabulary abilities, which were set as the independent variable (X), and listening skills, which were set as the dependent variable (Y). The formula used is as follows:

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

$$r_{xy} = \frac{15(55066) - (903)(841)}{\sqrt{\{15(59373) - (903)^2\}\{15(52291) - (841)^2\}}}$$

$$r_{xy} = \frac{825990 - 759423}{\sqrt{\{890595 - 815409\}\{784365 - 707281\}}}$$

$$r_{xy} = \frac{66567}{\sqrt{\{75186\}\{77084\}}}$$

$$r_{xy} = \frac{66567}{\sqrt{5795637624}}$$

$$r_{xy} = \frac{66567}{76129.08}$$

$$r_{xy} = 0.874$$

Based on the results of the calculations, the correlation coefficient between students' vocabulary ability

(variable X) and listening skills (variable Y) was 0.874. This figure clearly shows a significant positive correlation between variables X and Y. This is supported by the acceptance of the alternative hypothesis (Ha), which states that r ≠ 0. When compared to the standard critical value of Pearson's Product Moment Correlation (r), the value of 0.874 falls within the range of 0.80 to 1.00, which, according to interpretation criteria, indicates that the correlation coefficient falls into the 'high to very high' category. Therefore, it can be concluded that the higher the students' vocabulary ability, the better their listening skills, and vice versa.

Furthermore, the research determined the degree of freedom (df) as follow:

df = N-2
df = 15-2
df = 13

After obtaining a degree of freedom (df) value of 13, the researcher will then calculate the significance of the correlation coefficient using the following formula:

$$t_r = \frac{r\sqrt{n-2}}{\sqrt{1-r2}}$$

$$t_r = \frac{0.874\sqrt{15-2}}{\sqrt{1-(0.874)2}}$$

$$t_r = \frac{0.874\sqrt{13}}{\sqrt{1-0.763}}$$

$$t_r = \frac{(0.874)(3.605)}{0.237}$$

$$t_r = \frac{3.150}{0.237}$$

$$t_r = 13,294$$

The value of the r_{table} at significance level of 5% (0.05) and the degree of freedom (df) = 13 are 0.553 while the value of t_r is 13,294 it means that the t_r is higher than t_{table}. The researcher concludes that there is a significant correlation between vocabulary ability and listening skill at the eleventh grade of SMK Muhammadiyah 1 Palu.

Discussion

The purpose of this study was to investigate the correlation between vocabulary ability (variable X) and listening skills (variable Y) among students in grade XI at SMK Muhammadiyah 1 Palu. The findings showed a significant positive correlation between the two variables.

The Pearson Product Moment Correlation Coefficient (r_xy) calculated is 0.874. This value indicates a 'high to very high' positive correlation between students' vocabulary ability and their listening skills, consistent with the interpretation criteria (0.60–0.80). The statistical significance of this correlation is further strengthened by hypothesis testing: the calculated t_r value of 13.294 is substantially higher than the r_table value of 0.553 at a significance level of 5% (0.05) with 13 degrees of freedom (df = N-2 = 15-2 = 13). This strongly confirms that there is a significant relationship, where an increase in vocabulary ability is associated with an increase in listening skills, and vice versa. This aligns with the argument that a strong vocabulary is an essential component of effective communication, enhancing one's ability to speak, listen, and read.

The observed correlation is consistent with existing linguistic theory and previous research emphasising the fundamental role of vocabulary in language comprehension. Schmitt and McCarthy (1998) highlight that, No matter how well students learn grammar, no matter how successfully they produce the sounds of a foreign language, meaningful communication simply cannot occur' without adequate vocabulary. This underscores the central role of vocabulary for all languages. Furthermore, Wise et al. (2007) revealed an important finding that expressive vocabulary knowledge and listening comprehension skills are independently related to a person's ability to identify words. This means that, regardless of other abilities, the number of words a person can use (expressive vocabulary) and how well they understand what they hear

both contribute separately but significantly to how someone recognises and processes words.This supports the link between vocabulary mastery and listening ability, which is crucial for understanding the use, meaning, and word class in spoken language. For example, good vocabulary mastery enables individuals to fully understand the words spoken by a singer in an English song. Furthermore, the dynamic nature of vocabulary, as stated by Manangkari (2018), in which it 'always grows over time,' suggests that continuous vocabulary acquisition through language experience is essential for the development of sustained listening skills.

Despite the significant correlation, the findings also revealed the current alarming level of students' abilities. Research shows that students' performance in vocabulary and listening skills is 'very poor.' Specifically, 46.67% of students scored less than 50 on the multiple-choice vocabulary test, and 60% of students scored less than 50 on the listening skills test. This indicates that although there is a strong relationship between the two skills, students' overall proficiency in both areas is still low.

Further analysis of student performance revealed specific difficulties. In the listening skills test, many students had difficulty distinguishing between words with similar sounds, such as 'bake' and 'back,' 'mad' and 'made,' and "set" and 'seat.' This is consistent with preliminary research observations of mishearing, misunderstanding, and lack of comprehension among students. For vocabulary tests, students demonstrated a lack of general vocabulary, not knowing the meanings of words such as 'disturb,' 'flight,' or 'office clerk,' and difficulty with synonyms such as 'disturb' and 'annoy,' or 'passionate' and 'excited,' "sunny" and 'bright.' These specific challenges highlight the urgent need for targeted interventions to improve basic vocabulary acquisition and phonemic discrimination skills.

The strong positive correlation, even in the context of low overall proficiency, emphasises that improving vocabulary skills is a critical pathway to improving listening skills. This study provides empirical evidence that students with stronger vocabularies tend to demonstrate better listening comprehension, and conversely, those with limited vocabularies struggle more with listening tasks. Therefore, pedagogical efforts should focus on strategies that simultaneously build vocabulary and hone listening comprehension. However, it is important to acknowledge the limitations of this study.

This study used purposive sampling techniques, involving only fifteen students from one specific class (Visual Communication Design) at SMK Muhammadiyah 1 Palu. This limits the generalisation of findings to a broader student population. Future research could benefit from a larger and more diverse sample to validate these correlations across different educational contexts and proficiency levels. Additionally, exploring various types of listening tasks and vocabulary assessment methods could provide a more nuanced understanding of this complex relationship.

CONCLUSION AND SUGGESTION

Conclusion

Based on the results of the study and discussion, it can be concluded that there is a significant positive correlation between vocabulary ability and listening skills of grade XI students at SMK Muhammadiyah 1 Palu.

This is evidenced by the calculated correlation coefficient ($r_{counted}$) of 13.294, which is significantly higher than the critical correlation coefficient (r_{table}) of 0.553 at a significance level of 5% (0.05) with 13 degrees of freedom (df). Furthermore, the correlation coefficient between the vocabulary ability variable (X) and listening

skills (Y) is 0.874. When this result is compared with the critical value standard for Pearson's Product Moment Correlation (r), it is categorised as 'high to very high' (0.60-0.80).

The implication of these findings is that the better the students' vocabulary ability, the better their listening skills, and vice versa. However, the study also shows that the overall vocabulary ability and listening skills of students are still classified as 'very poor.' This highlights the challenges faced by students in distinguishing words with similar sounds and their lack of mastery of word meanings.

Suggestions

Based on the above conclusions, several suggestions need to be conveyed to students and teachers in order to achieve better improvement in the future:

- Students are expected to pay more attention to their English vocabulary skills, considering that the results of the study show that their vocabulary skills are still very low. They need to actively search for and learn new words, understand the context in which they are used, and practise distinguishing words that have similar sounds.
- Teachers are advised to apply various innovative and interesting teaching methods to stimulate students' interest in learning and mastering vocabulary. In addition, teachers should also be more motivating, stimulating, and provide more opportunities for students in the teaching and learning process so that students can achieve significant improvement in vocabulary and listening skills. This can be achieved through interactive activities, the use of authentic materials, and the provision of constructive feedback.

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