# The Correlation between Vocabulary Complexity Mastery and Students' Speaking Skills

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## ABSTRACT

This study focuses on the correlation between vocabulary complexity mastery and students' speaking skills. The purpose of this research was to find out whether vocabulary complexity mastery can influence students' speaking skills. In finding out the correlation between variables and the degree of correlation, the researcher used quantitative research methods with a correlational research design. This study involved 25 students who were in class XI Nursing major. In collecting research data, the researcher used a vocabulary complexity test (PVLT) of 30 questions. Meanwhile, to find out the speaking skill, the researcher used speaking instruction (Role-play; Cued Task) which involves three assessors. Based on the results of the analysis of the calculation through SPSS, the calculation results obtained the value of Sig. (2-tailed) = 0.000<0.005, which indicates that Ha is accepted and H0 is rejected. Therefore, there is a significant correlation between vocabulary complexity mastery and students' speaking skills.

**Keywords:** correlation, speaking skill, vocabulary complexity, vocational high-school

## INTRODUCTION

The English language has become the international language to share information and communicate in this 21st century. English has become the mandatory language to be mastered by individuals to acquire broader knowledge. In Indonesia, English is considered a foreign language that is taught from elementary school to higher education so Indonesian can use English based on their needs (Depdiknas, 2006). In learning English, there are fundamental language skills that must be understood by students, listening, speaking, reading, and writing (Miralpeix & Muñoz, 2018).

However, out of those four skills, as the means of direct communication, speaking skill has a big role to convey the person's idea to their interlocutor. Speaking uses verbal and non-verbal components to convey the meaning of the speaker in either transactional or interactional communication (Halimah, 2018). Speaking skill requires an interactive process between the speaker and the listener in managing the information orally that involves spontaneous interaction (Erdiana et al., 2019). Besides, speaking skill involves other aspects such as vocabulary to interpret the speaker's idea in the process of constructing the meaning (Mukhlisin et al., 2020).

Similar to other fundamental language skills, speaking skill requires vocabulary to interpret the idea in the communication process. Vocabulary becomes a predictor of speaking skills for an interlocutor. A person with a wider vocabulary has more ideas to be conveyed (Uchihara & Clenton, 2020). As the nature of speaking skills involves the spontaneous process, vocabulary in speaking entails the size and the depth of vocabulary knowledge which become a large proportion of speaking skills. Nation (2013) states that to be able to produce the language, there is a minimum number of vocabulary that must be mastered by learners so that

learners can express and convey their ideas. Nation (2016, p. 22) proposed that a learner needed to master approximately 3000-word families to produce both written and spoken language.

Further, Nation (2016) categorized the types of vocabulary based on the frequency of use in a text. Vocabulary divides into high-frequency vocabulary, mid-frequency vocabulary, and low-frequency vocabulary. High-frequency vocabulary refers to the general vocabulary that frequently occurs in general text. Mid-frequency vocabulary refers to vocabulary that is less frequently discovered in general text. Low-frequency vocabulary refers to the vocabulary used in specific fields that are rarely found in general discussion. High-frequency vocabulary in specific fields such as in nursing class, high-frequency (general vocabulary) occasionally provides a different meaning concept based on the context, this type of vocabulary is also known as vocabulary complexity (Coxhead & Demecheleer, 2018).

Vocabulary complexity is a type of vocabulary that is used specifically in certain fields and particular areas (Stamatović, 2019). Vocabulary complexity is often used to convey specific knowledge in formal academic settings. The characteristic of vocabulary complexity derives from its uniqueness in representing specific fields, which the vocabulary frequently found in those areas but rarely found outwards, that can provide the essential knowledge in learning particular disciplines such as psychology, engineering, and medical areas (Webb & Nation, 2017). Based on this explanation, vocabulary complexity is typically context-bound, topic-dependent, or very interrelated with the background of a particular discipline.

For vocational schools in Indonesia, the vocabulary taught are frequently involved vocabulary complexity as the learning materials for vocational high school are required to accustom students to the terminology related to the working place. Since students in vocational high school are expected to be competent both in hard-skill and soft-skill that are related to their careers (Skarpaas & Rødnes, 2022), students of vocational high school majoring in nursing have to be familiar with the nursing vocabulary complexity which becomes the basic foundation for the students to further understand the concepts that operate within the nursing academic scope (Saragih et al., 2019).

The learning of vocabulary complexity for nursing major students is considered as English for a specific purpose in which the topic of learning English includes the technical nursing procedures such as identifying patients' care requirements, focusing on their needs, and acting on them (Lu, 2018). Hence, nursing major students need to recognize the minimum nursing vocabulary complexity so that students can comprehend the nursing procedural language better. The categorization for nursing vocabulary complexity was first proposed by Yang (2015) that derives from 1.006.934 running words from 252 nursing research articles which become supplementary materials for nursing students in learning nursing discipline. Yang (2015) classified 676-word families that frequently occurred in 21 subject materials in nursing which are important for nursing students in improving the reading comprehension of their academic texts and being able to produce the language related to their profession.

The nursing major students are required to acquire the nursing vocabulary complexity to be competent in their fields of expertise in both hard and soft skills. Yunita and Diani (2022) stated that students of the nursing major are required to recognize and understand vocabulary complexity to be able to carry out their duties as nurses and to be able to carry out applicable nursing procedures. The use of vocabulary complexity in speaking skills in the scope of nursing areas becomes one of the aspects that must be mastered by a professional health care assistant which becomes an image for the nurse to show to their patients about their competence (Lu, 2016). Patients would trust nurses and express their needs once a strong connection had been built with their nurse. To promote patient health, nurses are given the chance to put their knowledge to use and to make interventions.

In line with this, Lu (2018) explained that cross-cultural communication in international hospital settings where patients come from various countries is demanding the nurse understand English, which is considered an international language, in caring for patients' needs such as doing the small-talk, comprehending an instruction, providing specific explanations, identifying and clarifying patients' health condition, and responding to patients with

empathy. The utilization of vocabulary complexity in speaking skills is useful for transactional communication to convey informational language in a particular discipline and also to define the specific term to the general public.

Previous research done by Khan et al. (2018) found that the biggest problem faced by EFL students of the public university of Saudi Arabia during spoken language practice is inadequate vocabulary mastery. Despite being afraid of being laughed at by their classmates, up to 26% of the 100 students who participated in the research had trouble coming up with the proper words to express their thoughts. To add on, Fatimah et al. (2019) examined the connection between the students' vocabulary mastery and speaking ability in the context of those findings. The results were categorized as in low correlation (0.339, through applying the Pearson Product Moment formula). The values of rxy=0.339 and rtable = 0.2709 (5%) and 0.3202 (1%) were contrasted to test the hypothesis; that is 0.2709, 0.3393 > 0.3202. In the meantime, the SPSS result also demonstrated that the 2-tailed Sig. was 0.037, which was less than 0.05. Based on these findings, it can be concluded that speaking ability and vocabulary mastery have a significant and positive relationship. Students' speaking abilities will improve if they have a strong vocabulary.

The research conducted by Uchihara and Clenton (2020) revealed that the amount of vocabulary knowledge can affect how well students can perform a monologue in an oral narrative text. Using a Yes/No test, researchers gauged receptive vocabulary knowledge. Based on the test results obtained, students had vocabulary mastery with an average of 6,000 items. To analyze the correlation between the contributions of vocabulary to narrative speaking, the researcher used Pearson's product moment. The results of the analysis produced a correlation coefficient of r = 0.552 which indicated a strong correlation between vocabulary size and speaking skills.

Based on the findings of the studies described above, it can be concluded that vocabulary is the main part of speaking skills. Vocabulary as a core part of speaking skills has been proven by those studies. It showed that vocabulary is one of the predictors for someone in producing a language, the more vocabulary mastered the more ideas can be conveyed verbally.

In the Indonesian setting, nursing major students frequently used their mother tongue to communicate daily (Halimah, 2018). These students are still not accustomed to English to communicate with their patients. One research conducted by Fatimah, et al. (2019) found the obstacle faced by eighth-grade students during practicing speaking skills was the lack of vocabulary knowledge which caused students to stammer when they tried to convey their ideas orally. Students also often felt afraid to make mistakes in practicing speaking English.

In the findings from the pre-research interview with the English teacher of ten grade at SMK Kesehatan Utama Insani, Ms. R stated that in learning technical vocabulary (especially in speaking) which related to specific disciplines, i.e. nursing setting, students occasionally felt unfamiliar with the given vocabularies in the conversational text during the practice which made students stammer. To find students' vocabulary knowledge, Ms. R used 10 target words that often appear in nursing learning materials and conversations based on situational context frequently occur in nursing and applied the vocabulary knowledge scale used by Lin (2015) as can be inferred below:
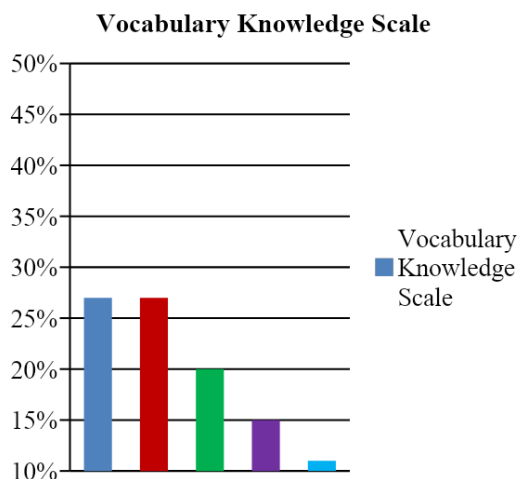
Figure 1. Vocabulary knowledge scale

The category can be classified (from right to left) as category 1 is for the students who didn't remember having seen the given vocabulary before, category 2 is for the students who had already seen the given vocabulary but still didn't know the meaning, category 3 is for the students who made guesses of the given vocabulary meaning, category 4 is for the students who already knew the meaning, and category 5 is for the students who were able to produce the vocabulary in a sentence. As stated in figure 1, from the total population of tenth grade (58 students), only 11% could produce the vocabulary in a sentence. 15% understood the given vocabulary by answering with the correct translation. 20% answered the vocabulary meaning with hesitation. 27% had seen the given word but could not understand the meanings. Based on that result, the researchers concluded that students of SMK Kesehatan Utama Insani were less-familiar with vocabulary complexity in text.

Therefore, the purpose of this study is to investigate the correlation between vocabulary complexity mastery and students' speaking skills in professional fields, which is an indicator of their success in the process of communicating about phenomena that typically occur in nursing areas. For instance, Students in nursing vocational high schools are expected to comprehend nursing terminology to converse nursing-related tasks such as communicating with their patients about medical health consultations that frequently use technical vocabulary to describe patients' health conditions. As to find the result of the research one can formulate the research questions as follows:

1. How is the eleventh-grade nursing students' vocabulary complexity mastery at SMK Kesehatan Utama Insani academic year 2022/2023?
2. How is the eleventh-grade nursing students' speaking skill at SMK Kesehatan Utama Insani academic year 2022/2023?
3. Is there any correlation between vocabulary complexity mastery and students' speaking skills at SMK Kesehatan Utama Insani academic year 2022/2023?

***Vocabulary complexity***

Council of Europe (2001) categorized vocabulary mastery into beginner level, pre-intermediate/elementary level, intermediate, upper-intermediate level, advanced level, and expert. This classification is useful to determine students' ability in mastering English, thus the teacher or instructor can decide on an effective learning model to support the learning process. In addition to this, Nation (2013) classified vocabulary into three categories; low-frequency vocabulary, high-frequency vocabulary, and specialized vocabulary. High-frequency vocabulary refers to vocabulary that is often used daily and is generally used for communication. Low-frequency vocabulary refers to the vocabulary rarely used in a general context but in a specific context such as the business field. Specialized vocabulary is a kind of vocabulary that is used only to describe certain terms in a discourse that is only available only in specific discourse such as in terms of scientific fields, law, health termination, etc. According

to Nation (1990), the complexity of vocabulary has a variety of difficulties in terms of individuals mastering the vocabulary. Further Sujadi & Wulandari (2021) stated that there are four strands affecting the vocabulary that become more difficult to master, there are pronouncing unique sounds, spelling the words, memorizing long-syllable words, and comprehending the meaning of specific words. The human tendency to communicate and interact is not a phenomenon that emerges recently.

In line with this, Dodigovic & Agustín-Llach (2020, pp. 31–32) mentioned seven aspects of single word or vocabulary knowledge must be known by the learner to know the word; the meanings, the spoken form, the collocations, the written forms, the register, and the associations, the grammatical behavior and frequency. Vocabulary complexity means that vocabulary has difficulty for students to master the language. In spoken language, it is the biggest obstacle while trying. To achieve the vocabulary target, vocabulary must be taught purposefully, not incidentally.

### *Teaching speaking using mobile apps*

Recently Mobile Assisted Language Learning (henceforth addressed as MALL) has been equipped with an internet function where teachers can find learning sources on the internet. Several studies claimed that using MALL in language learning, gives more opportunities for students to practice language skills (Gonulal, 2019; Loewen et al., 2019; Pratiwi et al., 2020). Gonulal (2019) stated that the use of MALL-based social networks such as Instagram provides a learning experience not only in a formal way but also in a non-formal way where students have more time than in school settings. Similarly, Loewen (2019) reveals that the use of MALL in language learning provides regular drills for students to become accustomed to the language they learned. In accordance with Pratiwi's (2020) research about teachers' perception of MALL, the researcher found that MALL helped the teacher to distribute the learning materials and exercises for the students. Kukulska-Hulme (2020) emphasized that Mobile-Assisted Language Learning offers new conveniences in the educational field. Based on its nature, the learning process becomes more flexible in terms of teachers giving the learning models and providing authentic learning materials. Additionally, MALL in its application to the learning process can support students' independent learning process (discovery learning) in which the learning materials can be accessed from their mobile devices.

Talk-Apps such as MALL provide numerous contexts of speaking that generally occur in our daily interaction, both interpersonal and intersectional such as dialogue, conversation, and discussion. In giving the practice speaking skill, Talk-Apps have two different contexts based on the type of conversation going on; beginner conversation and business conversation. Beginner conversation provides beginner content that normally occurs in a daily context in a social environment with the following simple conversation such as asking for news, direction, favor, inviting dinner, and so on. In business conversation content, Talk-Apps provide a more complex conversation than Beginner conversation that illustrates the conversation generally occurring in business fields such as making appointments, arranging a meeting, and dealing with business clients.

In addition to that, Talk-Apps also provide native speaker sound, whereas students can lift their listening skills and try to imitate the way native speakers pronounce the conversation. Further, Talk-Apps also provide an audio recording feature that students can record their speaking about the topics they have practiced. In conclusion, Talk-Apps can be categorized as supportive learning tools which provide rich context based on the social environment and authentic learning materials that can be integrated formally and non-formally (outward school settings) learning processes that meet mobile-assisted language learning (MALL) that flexible and accessible in use.

**METHOD**

    To find the correlation between the variables, the researchers used a quantitative research method with a correlation research model to find out the result. In this study, there were 25 eleventh-grade nursing students in SMK Kesehatan Utama Insani, in the academic year 2022/2023 involved. The researchers used SPSS version 25 to calculate students' scores and to find the correlational result.

*Time and place*

    This research was conducted at SMK Kesehatan Utama Insani, Jl. AMD No. 9 Panongan, Kecamatan Panongan, Kabupaten Tangerang, Banten, academic year 2022/2023. This research study took a month starting from arranging the research instrument to collecting the research data.

*Population and sample*

    The total population of this research study is 58 eleventh-grade students at SMK Utama Insani academic year 2022/2023. To represent the learning outcomes from the total population, Creswell (2012, p. 142) suggests using technical sampling to generalize overall students' scores which become representative of the study. In this research, the researchers used a purposive sampling technique that involved 25 nursing students as the research participants. This research took one class to find the correlation between variables.

*Research design*

    This research study used a quantitative research method by using a correlational quantitative research design to find the correlation between vocabulary complexity mastery and students' speaking skills. In collecting the research data, the researchers used tests for both variables. To find students' vocabulary complexity the researchers used PVLT (Productivity Vocabulary Level Test) which was created by Laufer & Nation (1999) and speaking instruction to find students speaking performance to measure students' speaking skills. Both tests were previously validated so both instruments can be used in collecting data. To categorize students' vocabulary complexity score, according to Laufer & Nation (1999) the following criteria are used:

Table 1. Students' score criteria

| No | Rates of score | Categories |
|----|----------------|------------|
| 1  | 10 – 50        | Very poor  |
| 2  | 51 – 60        | Poor       |
| 3  | 61 – 70        | Fair       |
| 4  | 71 – 80        | Good       |
| 5  | 81 – 100       | Very good  |

    The researchers utilized three assessors to assess each student's performance by using the Mukhlisin et al. (2020) speaking rubric which was adapted from Weir (2005) to evaluate students' quality of speaking skills. Further, the researchers used analysis software, SPSS version 25, which aired the researchers to calculate and identify students' test results from both variables. To categorize students speaking skills, the researchers used the criteria suggested by Mukhlisin et al (2020) as follows:

Table 2. Speaking score criteria

| No | Score    | Categories |
|----|----------|------------|
| 1  | 0 – 69   | Very Poor  |
| 2  | 70 – 79  | Poor       |
| 3  | 80 – 89  | Good       |
| 4  | 90 – 100 | Very good  |

### The test of analysis assumption

To determine whether research data can be used in testing research hypotheses, a prerequisite parametric test is required to examine whether a component of research data can be applied to the examination of research hypotheses (Roni et al., 2020). There were several tests conducted by researchers to meet the prerequisite categories of research data, including the normality test, reliability test, and linearity test. The table below shows the output of the normality test calculation:

Table 3. Test of normality SPSS version 25

**Tests of Normality**

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Vocabulary Complexity Score | .217 | 25 | .004 | .888 | 25 | .010 |
| Students Speaking Score | .106 | 25 | .200* | .970 | 25 | .650 |

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Based on the output of the normality test calculation using SPSS version 25, there are two categories, namely Kolomogorov-Smirnov (<30) and Shapiro-Wilk (>30). In this research, the researchers used the determination of categories based on Shapiro-Wilk which is devoted to the number of samples in the study of fewer than 30 participants (Roni et al., 2020). The result from the calculation of SPSS version 25 reached the normality value on the vocabulary complexity which is Sig. 0.010 < 0.05, while on the acquisition of the student's value of Sig. 0.650 > 0.05 on students' speaking scores, which means the data is not normally distributed. Based on the normality score of both variables it indicates that the researchers cannot use the parametric Pearson Product Moment correlation test to test the correlation coefficient value.

Furthermore, the researchers used the linearity test to determine whether or not the two variables of this research have a straight-line relationship with which the independent score can predict the dependent's score (Widana & Muliani, 2020). The linearity output from the SPSS calculation can be seen as follows:

Table 4. Linearity Test

**ANOVA Table**

| | | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|---|
| Students Speaking Score * Vocabulary Complexity Score | Between Groups | (Combined) | 897.503 | 7 | 128.215 | 8.924 | .000 |
| | | Linearity | 792.734 | 1 | 792.734 | 55.173 | .000 |
| | | Deviation from Linearity | 104.769 | 6 | 17.461 | 1.215 | .346 |
| | Within Groups | | 244.257 | 17 | 14.368 | | |
| | Total | | 1141.760 | 24 | | | |

The results of the linearity test in the SPSS version 25 calculation table above produce the Sig. value of deviation from Linearity 0.346 > 0.05. According to Widana & Muliani (2020) in the provisions explained in the research methodology above about the linearity value criteria, if the significance value of the linearity deviation is > 0.05, it can be said that there is a linear relationship between variables. Based on the results of the linearity test in table 4 above, it is clear that there is a linear correlation between the variables in this study, which means that the independent variables of this study can predict the results of students' speaking skills.

*Hypothesis test*

Based on the results of the normality test obtained through the calculation of SPSS version 25, it can be indicated that this research data is not normally distributed. Thus, the data cannot be used in the parametric test to find the research hypothesis (Ghasemi & Zahediasl, 2012). Therefore, the researchers used a non-parametric test to test the hypothesis of this study. According to Roni et al (2020, p. 120), there is an alternative hypothesis testing in correlation research with data that are not normally distributed; called Kendall's tau-b. The alternative correlation test can be carried out as the non-parametric test which is sourced from the same research object on both research variables. In Kendall's tau-b non-parametric correlation coefficient test using the ordinal data. In this case, the researchers obtained the interval data.

Sugiyono (2013) explained for the determination of decision-making in a hypothesis test from correlational research, can be seen from the value of Sig. (2-tailed) in SPSS table output which indicates as the indicator of hypothesis test which according to Sugiyono can be categorized as follows:

1. If the Sig. (2-tailed) value > significance level (0.05) then there is no correlation between variables.
2. If the Sig. (2-tailed) value < significance level (0.05) there is a significant correlation between the variables.

Afterward, to find how big the correlation between variables is, Isaac & Chikweru (2018) state that it is necessary to measure the r (correlation coefficient) score to determine if the correlational level is strong or weak. The correlation coefficient size effect can be indicated as follow:

0.00 -0.20 Very poor
0.21 - 0.35 Poor
0.36 – 0.65 Moderate
0.66 – 0.85 Good
0.86 – 1.00 High

## FINDINGS AND DISCUSSION

*Vocabulary complexity*

The acquisition through the productivity vocabulary level test aims to classify vocabulary complexity mastery based on the score obtained by the students during the test. To classify student scores, the researcher used Laufer & Nation (1999). In presenting the obtained data, the researchers used table distribution frequency to summarize overall students' vocabulary scores. The students' score table is as follows:

Table 5. Students' Vocabulary Score Distribution Frequencies

| Students Score Interval | Frequency | Percentage |
|:---:|:---:|:---:|
| 66 – 70 | 8 | 32% |
| 71 - 74 | 5 | 20% |
| 75 - 79 | 6 | 24% |
| 80 - 84 | 5 | 20% |
| 85 - 88 | 1 | 4% |
| 89 – 100 | 0 | 0% |
| Students' Average Score is **77** | | |

Based on table 5 above, students of eleven grade in SMK Kesehatan Utama Insani academic year 2022/2023 on their vocabulary complexity mastery, there are 32% of students obtained fair score category based on the scoring criteria above, and the rest as much as 68% students had an average score of 77 which can be categorized into good understanding in comprehending the given vocabulary complexity.

Furthermore, to determine the vocabulary complexity mastered by students in the nursing area, the researchers used the percentage of acquisition for each number of questions given. It

aims to monitor how well the students of this research study in mastering the given vocabulary complexity. The table below is the acquisition from each item question:

Table 6. Percentage of students' answer

| Question Items | Students' Percentage |
|---|---|
| 1 | 64% |
| 2 | 76% |
| 3 | 64% |
| 4 | 68% |
| 5 | 88% |
| 6 | 72% |
| 7 | 80% |
| 8 | 84% |
| 9 | 72% |
| 10 | 80% |
| 11 | 80% |
| 12 | 64% |
| 13 | 84% |
| 14 | 80% |
| 15 | 68% |
| 16 | 72% |
| 17 | 76% |
| 18 | 72% |
| 19 | 84% |
| 20 | 76% |
| 21 | 72% |
| 22 | 76% |
| 23 | 76% |
| 24 | 88% |
| 25 | 76% |
| 26 | 92% |
| 27 | 84% |
| 28 | 88% |
| 29 | 88% |
| 30 | 80% |
| **Average** | **77%** |

According to the results of the student's responses to the question in table 4.3 above, which included 30 questions, as many as 92% of research participants (23 students) were aware of the vocabulary complexity contained in question item number 26. Students have understood how to produce vocabulary complexity in the context of question number 26. Meanwhile, for question number 1, 3, and 12 only 64% of students (16 students) were able to answer correctly, as much as vocabulary complexity contained in the context of nursing. Based on the student's overall score, up to 77% students of in the total research sample mastered the vocabulary complexity that is contained in the context of nursing.

In the acquisition of questions per item given, overall 77% (19 Students) of eleventh-grade nursing students at SMK Kesehatan Utama Insani recognized the vocabulary complexity in technical nursing, whereas Coxhead & Demecheleer (2018) explained that for vocational students to understand the specialized discourses they are studying, they need this type of technical vocabulary to comprehend the concept of the discourse. In implementing vocabulary complexity on communication skills, Pradana et al (2022) and Skarpaas & Rødnes (2022) research study revealed that vocabulary complexity becomes the fundamental knowledge for vocational students to be able to compete in the workplace, whereas, in the nursing field, there

is vocabulary complexity that explains a specific entity which cannot be explained only by general vocabulary. Based on the results from the percentage of students' understanding of vocabulary complexity, it can be concluded that the eleventh-grade students of SMK Utama Insani academic year 2022/2023 had a good understanding of nursing vocabulary complexity.

*Students' speaking skill*

The researchers used role-playing to simulate dialogues that frequently take place in the context of nursing to assess students' speaking abilities. According to Krisdiana et al (2018), role-play is a kind of simulation activity that promotes students' improvisation in learning speaking skills. In this kind of activity, students allow imitating as closely as possible to native speakers. Students can engage in three types of communication through role play as a simulation of real-life communication; one-way communication, restricted two-way communication, and full two-way communication.

To measure students' performance in practicing the instructions given by the researcher, the researcher used the speaking scoring rubric that was promoted by Weir (2005) and involved the three assessors to assess student performance. The involvement of these three assessors aims to assess student performance validly because these three assessors are English teachers who are used to providing assessments of student performance in English language learning. In categorizing students' score criteria, the researcher uses a categorization scale chart proposed by Mukhlisin et al (2020).

Furthermore, to determine students' speaking skills based on the researchers' instruction, the researchers used the percentage table for scoring each indicator of the speaking rubric. The following is a table of percentages of each indicator:

Table 7. Fluency indicator

| No. Indicator | Score | Frequency | Mean Score | Percentage |
|---|---|---|---|---|
| | 4 | 3 | 12 | 16% |
| | 3 | 20 | 60 | 79% |
| 1 | 2 | 2 | 4 | 5% |
| | 1 | 0 | 0 | 0% |
| **Total** | | 25 | 76 | 100% |
| **Maximum score** | | | 100 | |
| **Average percentage** | | | 76% | |
| Criteria | | | **Poor** | |

Table 8. Pronunciation indicator

| No. Indicator | Score | Frequency | Mean Score | Percentage |
|---|---|---|---|---|
| | 4 | 2 | 8 | 11% |
| | 3 | 19 | 57 | 78% |
| 2 | 2 | 4 | 8 | 11% |
| | 1 | 0 | 0 | 0% |
| **Total** | | 25 | 73 | 100% |
| **Maximum score** | | | 100 | |
| **Average percentage** | | | 73% | |
| Categories | | | **Poor** | |

Table 9. Vocabulary indicator

| No. Indicator | Score | Frequency | Mean Score | Percentage |
|---|---|---|---|---|
| | 4 | 10 | 40 | 47% |
| | 3 | 15 | 45 | 53% |
| 3 | 2 | 0 | 0 | 0% |
| | 1 | 0 | 0 | 0% |
| **Total** | | 25 | 85 | 100% |
| **Maximum score** | | | 100 | |
| **Average percentage** | | | 85% | |
| Categories | | | **Good** | |

Table 10. Grammatical accuracy indicator

| No. Indicator | Score | Frequency | Mean Score | Percentage |
|---|---|---|---|---|
| | 4 | 0 | 0 | 0% |
| **4** | 3 | 12 | 36 | 58% |
| | 2 | 13 | 26 | 42% |
| | 1 | 0 | 0 | 0% |
| **Total** | | 25 | 62 | 100% |
| **Maximum score** | | | 100 | |
| **Average percentage** | | | 62% | |
| **Categories** | | | **Very Poor** | |

Table 11. Interactional strategies indicator

| No. Indicator | Score | Frequency | Mean Score | Percentage |
|---|---|---|---|---|
| | 4 | 12 | 48 | 57% |
| **5** | 3 | 10 | 30 | 36% |
| | 2 | 3 | 6 | 7% |
| | 1 | 0 | 0 | 0% |
| **Total** | | 25 | 84 | 100% |
| **Maximum score** | | | 100 | |
| **Average percentage** | | | 84% | |
| **Categories** | | | **Good** | |

Table 12. Average speaking score

| Students Score Interval | Frequency | Percentage |
|---|---|---|
| 59 – 64 | 1 | 4% |
| 65 - 69 | 7 | 28% |
| 70 - 75 | 7 | 28% |
| 76 - 81 | 7 | 28% |
| 82 – 87 | 3 | 12% |
| Students Average Score **77** | | |

Based on the score categorization recommended by Mukhlisin et al (2020) overall speaking performance from Students in the eleventh grade at SMK Kesehatan Utama Insani is classified into poor categories, with the average score used for the classification is 77; this value is found in the weak categorization column in the category table 2 above. In the acquisition of each indicator, the researchers used the average score given by the three assessors in assessing student performance. The poor category is found in indicators of fluency (76%), pronunciation (73%), and very poor grammatical accuracy (62%). Meanwhile, good categorization is found in the vocabulary indicator (85%) and the interactional strategy indicator (84%).

*The Correlation between variables*

This research data is not normally distributed, so the researchers used Kendalls' tau-b correlation test in SPSS version 25 as an alternative hypothesis test. In Kendall's tau-b non-parametric correlation coefficient test using the ordinal data. In this case, the researchers obtained the interval data.

Muijs (2004, p. 151) explained that interval data must be converted to ordinal data to be able to use in the non-parametric test. In this case, the researcher transforms the interval data into ordinal data in the form of student acquisition rankings. To categorize the ranking, the 1$^{st}$ rank category is for students who acquire the highest score, and the 25$^{th}$ rank category is for the students with the lowest score. The transformation can be seen in the table below:

Table 13. Transformation data

| No | Vocabulary | Speaking | Rank Vocabulary | Rank Speaking |
|---|---|---|---|---|
| 1 | 84 | 82 | 4 | 2.5 |
| 2 | 72 | 64 | 21 | 23 |
| 3 | 81 | 70 | 10 | 17 |
| 4 | 84 | 81 | 4 | 5 |
| 5 | 81 | 68 | 10 | 19.5 |
| 6 | 77 | 75 | 16 | 11.5 |
| 7 | 84 | 82 | 4 | 2.5 |
| 8 | 84 | 77 | 4 | 8.5 |
| 9 | 77 | 73 | 16 | 13.5 |
| 10 | 77 | 75 | 16 | 11.5 |
| 11 | 66 | 64 | 24.5 | 23 |
| 12 | 81 | 81 | 10 | 5 |
| 13 | 68 | 59 | 22.5 | 25 |
| 14 | 84 | 81 | 4 | 5 |
| 15 | 86 | 86 | 1 | 1 |
| 16 | 68 | 68 | 22.5 | 19.5 |
| 17 | 75 | 68 | 19.5 | 19.5 |
| 18 | 77 | 68 | 16 | 19.5 |
| 19 | 66 | 64 | 24.5 | 23 |
| 20 | 81 | 72 | 10 | 15.5 |
| 21 | 77 | 77 | 16 | 8.5 |
| 22 | 81 | 72 | 10 | 15.5 |
| 23 | 75 | 73 | 19.5 | 13.5 |
| 24 | 81 | 77 | 10 | 8.5 |
| 25 | 81 | 77 | 10 | 8.5 |

Hence, the researchers used Kendall's tau-b formula to measure the correlation coefficient value of the two acquisition data that had been converted into ordinal data. The results of the calculation of the coefficient value through the SPSS version 25 can be seen in the following table:

Table 14. Kendall's tau-b correlation score

**Correlations**

| | | | Rank of Vocabulary_Co mplexity | Rank of Students_Speak ing |
|---|---|---|---|---|
| Kendall's tau_b | Rank of Vocabulary_Complexity | Correlation Coefficient | 1.000 | .712[**] |
| | | Sig. (2-tailed) | . | .000 |
| | | N | 25 | 25 |
| | Rank of Students_Speaking | Correlation Coefficient | .712[**] | 1.000 |
| | | Sig. (2-tailed) | .000 | . |
| | | N | 25 | 25 |

**. Correlation is significant at the 0.01 level (2-tailed).

Based on the output results obtained in the calculation table through SPSS version 25 above, the Sig. (2-tailed) value of each variable is 0.000. According to Safitri (2014), the categorization of hypothesis testing contained in the research methodology of this thesis states that if the Sig. (2-tailed) value is smaller than $\alpha = 0.05$ value then H0 is rejected. In the calculation output in table 4.13 above Sig. (2-tailed) $= 0.000 < \alpha = 0.05$ indicates there is a correlation between the variable which independent variable of this research (vocabulary complexity mastery) give the contribution to students' speaking skills in the technical context in eleventh-grade nursing students at SMK Kesehatan Utama Insani academic year 2022/2023.

Furthermore, there is a correlation coefficient value of 0.712 > 0.05 in the column of Kendall's tau-b correlation coefficient, which if look at the criteria suggested by Isaac &

Chikweru (2018) there is a strong relationship between vocabulary complexity mastery and students' speaking ability, which can be inferred from the research methodology used in this study.

## CONCLUSION

Based on the findings and the discussion above, the researchers found that the vocabulary complexity of the eleventh-grade nursing students can be categorized as having a good understanding. Based on the results of the average value obtained from the PVLT test, 77% of students are familiar with the vocabulary complexity in nursing areas. Conversely, the performance of students' speaking skills shows that the average student's speaking skill still relatively lacks practice in everyday life situations. This is indicated by the acquisition value of each indicator contained in the scoring rubric. However, in the correlation value, there is a significant correlation between the two variables in which aspects of students' knowledge of nursing vocabulary complexity can predict students' speaking skills in the context of nursing. Therefore, vocabulary complexity is an important component in a particular discussion.

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