The Relationship Between Indonesian EFL Learners’ Vocabulary Knowledge and English Competence

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Abstract

English vocabulary mastery is considered important in Indonesian education, but the actual vocabulary mastery of high school students is still below the target. It becomes a concern whether the low vocabulary knowledge is correlated with English skills. Thus, this study investigated the relationship between Indonesian students’ English vocabulary knowledge and English competencies. A total of 108 high school students completed a productive vocabulary test (Lex 30). The students’ scores from their English class served as the data for English competence. The Lex30 result and the English scores were then tested using Pearson correlation. The findings showed that the students’ vocabulary knowledge and English competencies had positive correlation. Despite no specific measurement of the vocabulary size from the lex30 score, it was relevant to measure students’ vocabulary knowledge required for their performance in general English skills (reading, writing, listening, and speaking). Thus, the positive correlation indicated that students with good vocabulary knowledge might also had good English scores. This study’s specific contextual focus may restrict the applicability of the findings to other contexts. Therefore, future research should diversify the sample, incorporate a wider range of assessment tools, and explore the impact of different teaching methods on language skills in various settings.

Keywords: English competence; English vocabulary; productive vocabulary knowledge
INTRODUCTION

Vocabulary is one of the language components crucial for language proficiency. Vocabulary plays an important role both in receptive knowledge and productivity. Understanding spoken and written words is known as receptive knowledge, while the capacity to use words correctly in speaking or writing is known as productive knowledge (Pignot-Shahov, 2012). Some researchers argue that vocabulary has become an important aspect of mastery of L2 learning (Schmitt, 2008). By understanding many words, the speaker can more easily understand the context of a conversation (Nazara, 2011). In other words, to understand English in EFL context, students need to achieve sufficient vocabulary knowledge.

Dodigovic and Agustín-Llach (2020) reported that vocabulary has frequently been undervalued in EFL classes. This causes vocabulary to be one of the six major problems for EFL learners (Swan & Smith, 2001). In Indonesian context, despite being one of the linguistics problems faced by EFL learners (Wahyuningsih & Afandi, 2020), vocabulary is considered important; that it has been given a place as part of the mandatory material in the curriculum (Widodo, 2016). Supported by Cahyono and Widiyati (2015), depending on the changing goals and techniques of English education in Indonesia, the role of EFL vocabulary in the country's curriculum is shifting in line with the current curriculum. Even though it has been integrated in the national curriculum, Indonesian EFL learners are still lacking in their vocabulary knowledge. This can be seen in the vocabulary size of Indonesian EFL learners. Vocabulary size is the number of words on learner knowledge (Nation, 2001) that can know students' word variation. Nation (2005) states the EFL must have at least 3000 vocabularies to deal with university tasks. Laufer (1992) argued that learners with 5000 words mean learners have high enough knowledge. In contrast, Sutarsyah et al. (1994) English learners need 4000-5000 words to understand the economics book that 5000 vocabulary words are needed. Srimongkontip & Wiriyakarum (2014) report that for daily communication learners need 3000 to 10000 words. In Indonesian EFL learners, according to the curriculum, senior high school students need to master at least 4000 words. Several researchers have been studying Indonesian EFL vocabulary size. In 1990, Nurweni recruited first-year university students using a pretest from the list edited by Nation, (1984), the finding of the study is still less than 4000 words as of the 1984 curriculum report that high school learners are needed to master 4000-5000 vocabulary. Afriando et al. (2015) researched several high schools in Indonesia and found only eighteen where the students reached the 3000-word level. Mustafa (2019) argued that Indonesian high school students are actually expected to master 3000 words; therefore, he questioned the curriculum that set the standard too high.

However, it is not only the size of vocabulary that matters in the process of EFL learning. Productive vocabulary score plays an important role as well as it is correlated with learners' ability to produce spontaneous speech in English (Uchihara, 2016). Productive vocabulary score is obtained through the Lex30 test. Lex 30 elicits productive vocabulary knowledge with word associations, and the test was originally elaborated and validated by Meara and Fitzpatrick (2000). Theoretically, the maximum a subject can score on Lex30 is 120, calculated by tallying 4 responses to each of the 30 cues. In reality, most L2 subjects tend to gain raw scores of between 10 and 40.

Several existing studies have discussed the relationship between vocabulary and English competencies with different participants and methods. According to L2 speech studies, vocabulary is a major predictor of L2 speaking competency, even when other criteria linked to linguistic knowledge and processing abilities are taken into consideration (de Jong et al., 2012; Iwashita et al., 2007). Koizumi and In'nami (2013) researched productive vocabulary in
Japanese students who have studied English for two to five years. The result shows that there was significant productive vocabulary knowledge (as assessed by L1-L2 translation) that predicted various L2 speaking abilities (fluency, accuracy, and syntactic complexity) and speculated that size and depth predict speaking similarly to a higher extent than speed. Furthermore, Uchihara and Saito (2016) conducted research on Japanese EFL learners measuring with the productive vocabulary test (Lex30). The result of this study shows that the productive vocabulary scores were substantially associated with L2 fluency rather than with comprehensibility or accentedness. Two years later, Uchihara and Clenton (2018) also conducted a study using Eurocentres Vocabulary Size Test (EVST) as the measurement. Atai and Dabbagh (2010) explored the influence of vocabulary depth on EFL usage of semantic sets in writing across two competency levels. The study discovered that, while both features were connected to the dependent variable, only word knowledge size was a significant predictive factor.

Besides speaking and writing, vocabulary mastery also predicted good reading comprehension (Giguere & Hoff, 2024). Learners with good oral vocabulary knowledge are likely to have better reading comprehension (Colenbrander, 2020). Mehrpour and Rahimi (2010) assessed the influence of general and particular vocabulary knowledge on listening and reading comprehension in 58 Iranian first-year English majors. Matthews and Cheng (2015) investigated the association between listening vocabulary and listening comprehension in 167 Chinese EFL learners completing their first year at a Chinese university. The listening vocabulary instrument, which focused on vocabulary levels of 1,000, 2,000, and 3,000, was a dictation assignment consisting of 89 phrases, each with one word missing; a separate IELTS hearing exam was delivered to measure participants' listening skills. The findings indicate a substantial relationship between hearing vocabulary and listening comprehension. Furthermore, vocabulary levels 3,000 and 1,000 are a strong predictor of listening comprehension, accounting for 54% of the variation.

In the EFL context, many researchers have recognized the importance of vocabulary for the four language skills growth. Few studies have examined the predictive value of EFL vocabulary knowledge for four key language skills (i.e. reading, writing, listening, and speaking) (Uchihara & Saito, 2016). Especially for EFL learners whose first language are not English, learning vocabulary can make it easier for them to understand English. Vocabulary also has an important relationship with English main skills such as reading (Laufer & Levitzky, 2017; McLean et al., 2020), listening comprehension (Noreillie et al., 2020; Steehr, 2009; Vafaei & Suzuki, 2020; Vandergrift & Baker, 2015), writing (Baba, 2009), and speaking (Brooks et al., 2021; Noreillie et al., 2020; Uchihara & Clenton, 2022).

Nevertheless, the study that used the productive vocabulary test (Lex30) as a measure of general English competence among Indonesian EFL students is still lacking. Therefore, in this study, the authors used a productive vocabulary test (Lex30) to measure speaking ability to find out the relationship between Indonesian EFL learners' vocabulary knowledge and their speaking ability. The research question of this study is: how is the relationship between Indonesian EFL learners’ productive vocabulary scores and their general English competence represented on the final grades?

**RESEARCH METHOD**

The current study is a quantitative study using correlational design as a research design. According to Cresswell (2018), a correlational design is a quantitative study to identify the relationship between two or more variables or sets of data that vary consistently. The statements above amplify that correlation is appropriate to the current study. This research
design aims to give comprehensive data on measuring the relationship between Indonesian EFL learners’ vocabulary knowledge and their speaking ability.

This research recruited 108 students in the 10th grade at one of the high schools in Yogyakarta as the population. The population was chosen since the school is considered to have decent quality of language learning, so it can be a representative of many other schools in Yogyakarta. In addition, the proficiency level of the students also varies based on the observation conducted by one of the researchers during her school-based teaching practice. The students have the same mother language and have been learning English for at least 2 years, which makes them fill the criteria for participating in this study. Convenience sampling as a sampling technique. Convenience sampling is a sort of non-probability or nonrandom sampling in which individuals of the target population who fulfill particular practical requirements, such as easy accessibility, geographical closeness, availability at a certain time, or desire to participate, are included in the research (Dörnyei, 2007). Due to several reasons, only 100 students fulfilled. The obtained number of data is still considered sufficient for further statistical analysis. The sample of this study used

The data was collected from two kinds of instruments, the productive vocabulary test (LEX30) conducted by Meara and Fitzpatrick (2000) and students’ English competencies scores. The productive vocabulary test (LEX30) was conducted by Meara and Fitzpatrick (2000) using the LEX30 web test (https://www.lognostics.co.uk/tools/Lex30/index.htm). The test was conducted in three classes in one of the high schools in Yogyakarta by students using their smartphones. There were 30 questions in this test and 120 words that they filled in with a time limit of 30 minutes together. The maximum score for this test was 120 if the students could write all of the associated words. Writing errors in the written words are considered correct in this test. The final score of this test was used to find out students’ vocabulary knowledge that later on will correlate to their English competencies score. The research analysis shows the average score on the Lex30 test was 72, which means among 120 vocabularies 60% of the entire words could be produced from the stimulus words supplied during the 30-minute task. Among 100 students, 62 of them scored at or above the average LEX30 score tested. Only one student scored 1 on this test, and this occurred because students misunderstood the required instructions. The maximum score of the Lex30 test is 120 and four students reached the maximum score.

For measuring the English competencies score, this research used students’ latest final semester report scores. The score grades were received and processed through permission and approval by the teacher and the relevant institutions. The English competencies were obtained from all basic English skills (reading, writing, speaking, and listening) and examined through daily tests, mid-semester exams, end-semester exams, and assignments. The percentage of each skill to find the final score is equivalent to or out of 100%, each skill is 25%. However, according to the teacher, in the latest learning report, listening was not tested specifically during this semester. Therefore, the final score was taken from 50% of reading, 25% writing, and 25% speaking. The scores were collected as the measurement of how students’ performance in every English skill will correlate to the LEX30 score as the findings of this research.

The data that has been obtained is calculated using SPSS Statistics 25. The correlation test is a test that examines the relationship between the dependent variable and the independent variable. Hence, the correlation test is used in this study to determine the relationship between vocabulary knowledge and students’ English competencies.
FINDINGS AND DISCUSSION

Findings
This chapter presents the findings of the study. The first variable being measured was the productive vocabulary score of grade 10 students of a public highschool in Yogyakarta. The chart below shows that the majority of the respondents are able to obtain high scores on the Lex30 test, which are 90-120. Yet, there is quite a gap of scores among the students as some of them are only able to obtain scores ranging from 1-30. The number of students with the lowest score is low, which is only 6%. This vast gap was mainly due to the confusion in using the Lex30 application despite the explanation given prior the test. Some students came late and did not participate well in the test.

Figure 1. The distribution of Lex30 scores among respondents

Furthermore, to be able to measure the relationship between productive vocabulary knowledge and general English competence, the researchers collected the data from the subject teacher in the form of final scores accumulated from daily exercises, midterm and final tests. Since one of the researchers did classroom observation and teaching practice in this school, it is confirmed that the tests and exercises covered both receptive and productive skills of English, namely reading, listening, writing and speaking. The chart below illustrates that half of the students are able to obtain 80-89. Unlike the result of the first variable, the overall scores of student's general English competence do not have a very huge gap. 7% of the students obtained 61-69. The recap of the overall scores of Lex30 and general English competence is presented in table 1 below.

Figure 2. The distribution of general English competence scores among respondents
Table 1. Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Max</th>
<th>Min</th>
<th>Mean</th>
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<tbody>
<tr>
<td>LEX30 Score</td>
<td>108</td>
<td>120</td>
<td>1</td>
<td>72</td>
</tr>
<tr>
<td>English Competence score</td>
<td>108</td>
<td>91</td>
<td>61</td>
<td>79</td>
</tr>
</tbody>
</table>

Table 1 shows the highest score, lowest score, and the average score of both data. For the LEX30 test score, the maximum score is 120 from 100 participants in the test which is also the maximum score of the test. The lowest score is 1, this was caused by a misunderstanding the instructor gave to the examinee, and only happened to one student. The average score is 72 from the whole score. While within the English Competencies Score, the highest score is 91, the lowest score is 61, and the average score of this data is 79.

Furthermore, after having the recap of the students’ score, a correlation test was conducted. Correlation tests aim to examine research hypotheses whether they are accepted or rejected. The Pearson Product Moment Formula is used in this study to determine the association between the two variables.

Table 2. Correlation test

<table>
<thead>
<tr>
<th></th>
<th>LEX30_score</th>
<th>English_Competences_score</th>
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</thead>
<tbody>
<tr>
<td><strong>LEX30_score</strong></td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>108</td>
</tr>
<tr>
<td><strong>English_Competences_score</strong></td>
<td>Pearson Correlation</td>
<td>.408**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>108</td>
</tr>
</tbody>
</table>

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

From Table 2, the correlation test for the LEX30 score and English competencies score using the Pearson product, the value Sig. (2-tailed) shows .000 which is less than .05. It means the correlation between the students’ LEX30 score and English competencies score is significant. From the result, we can conclude that the hypothesis that states the relationship between vocabulary knowledge and English competencies is correlated. Therefore, the alternative hypothesis (Ha) that there is a significant and positive relationship between students’ vocabulary knowledge and English competencies is accepted, and the null hypothesis (H0) that there is no significant and positive relationship between students’ vocabulary knowledge and English competencies is rejected. It can be concluded there is a positive correlation between students’ vocabulary knowledge and English competencies. It means that the higher the productive vocabulary score (Lex30) is, the higher the general English competence score as well.
Discussion

Vocabulary acquisition in developing language proficiency in reading, writing, listening, and speaking skills has gained the concern of researchers and educators in the realm of English as a Foreign Language (EFL). The current study investigated the relationship between students’ vocabulary knowledge and English competencies in the first year of high school at one of the high schools in Yogyakarta. The results showed that students’ LEX30 raw scores correlated with English competencies, taken from the average score from various school test scores. Each English skill has a percentage of 25%. Listening still takes part in each skill even if it is not tested specifically because all English skills are related to each other. The final LEX30 score shows that among 120 lexical items, 60% of the entire words could be produced from the stimulus words supplied during the 30-minute task. Among 100 students, 62 of them scored at or above 72, only one student scored 1 on this test, and four students reached the maximum score. A big gap in LEX30 score was found among the students, which was due to miscommunication in delivering the test-taking instruction.

Furthermore, by demonstrating the correlation between vocabulary knowledge and English competencies, this study confirms the suggestion that strong vocabulary knowledge is essential for developing student’s English competencies performance. The previous study (Uchihara & Saito, 2016) insists on studying the relationship between productive vocabulary and oral ability. However, the current study gives other perspectives by examining the relationship between productive vocabulary knowledge and English competencies from the result that showed a significant relationship between both variables. This also supports the implications of the current study despite the few things that are lacking from using the LEX30. According to Walters (2012), there is some difficulty in interpreting the LEX30 score due to the nature of this test which measures the productive vocabulary breadth rather than the actual vocabulary size. It means that one’s vocabulary size cannot be determined only by the L30 score. It is different from other types of tests, such as the Productive Vocabulary Levels Test (PVLT) which specifically measures learners’ individual vocabulary size. PVLT is a test in which the test taker is asked to fill a word inside a phrase that gives some context for the target word, This tool assesses productive vocabulary size through word completion (Laufer & Nation, 1999) which was used in the newest study conducted by Catalán (2023) and consisted of 90 items, with 18 test sentences provided for each frequency level (2k, 3k, 5k, UWL [the University Word List], and 10k). Participants must identify a target word within each phrase.

Although Lex30 cannot provide a specific range of students' vocabulary size levels compared to PVLT, it can be used to show how large the stimulus words in this test demonstrate the words that students are ready to use (Walters, 2012). This can help predict students' vocabulary use readiness in their performances and help teachers develop teaching styles. Since PVLT and L30 were proven to have a strong correlation (Meara & Fitzpatrick, 2000; Walters, 2012), it can be inferred that the higher the LEX30 score, the larger the productive vocabulary size. Thus, since 58% of the sample were able to reach above-average scores, it can be concluded that they have a quite good productive vocabulary size. This can be seen from their LEX30 scores and English competence scores which show that most of them, who have good Lex30 scores, also have good English scores. Based on the result of the correlation test using Pearson product, the correlation between students’ vocabulary knowledge and English competencies shows a positive correlation. It can be seen in the Sig. value is <.05, which means the correlation between students’ vocabulary knowledge and English competencies is significant. Therefore, the alternative hypothesis (Ha) is accepted and the null hypothesis (H0) is rejected. It can be concluded there is a positive correlation between students’ vocabulary knowledge and English competencies. In addition, this test, especially the computerized version, is easy to administer and score, taking less time than the PVLT. It
allows students to get the results of their vocabulary knowledge immediately after the test and allows for comparisons among learners.

Moreover, this study's emphasis on the relationship between vocabulary knowledge and English language competence raises related concerns about the possible broader implications for language teaching and curriculum development in the EFL context in Indonesia. If the further development of the LEX30 test is conducted, it could have a constant range like the PVLT and could help as a measurement tool to address the current gap, where the students' vocabulary knowledge is satisfied with today's curriculum expectations. As the Indonesian education system targets a vocabulary count of 4000-5000 words for high school graduates, the findings of this study highlight the importance of aligning vocabulary instruction with language learning outcomes to improve students' overall language proficiency. Considering the currency study's findings and limitations future research should aim to address these gaps by diversifying the sample, incorporating the impact of the range of assessment tools, and exploring the impact of different teaching methods on language skills development. By embracing a multifaceted and nuanced approach to research, scholars can deepen their understanding of the intricate relationship between vocabulary knowledge and English competencies, paving the way for more effective language teaching practices and curriculum design in the Indonesian EFL context.

CONCLUSION
This research has examined the relationship between Indonesian EFL Learners' Vocabulary Knowledge and English Competencies. The result shows a significant correlation between the variables. There is a positive correlation between 10th-grade students' vocabulary knowledge scores through the LEX30 test and English competencies from their latest semester score report at one of the high schools in Yogyakarta. The positive correlation between LEX30 and English competencies score means that high LEX30 score their high LEX30 score is equivalent to their English competencies score.

The current study has several limitations that should be considered. Conducted in a single high school in Yogyakarta, Indonesia, the findings may lack generalizability to broader populations or different educational settings. Relying primarily on the LEX30 test and students' final semester report scores as assessment tools may limit the depth of understanding of students' language skills. The strict time limit of 30 minutes for the LEX30 test could have influenced students' performance, potentially impacting the accuracy of the results. Additionally, the fact that listening skills were not specifically tested during the semester could have implications for the overall assessment of students' language abilities. While the study identified a positive correlation between vocabulary knowledge and English competencies, it is crucial to recognize that correlation does not imply causation, and other factors may influence students' language proficiency. Furthermore, the study's specific cultural and contextual focus in Yogyakarta may restrict the applicability of the findings to other cultural contexts or regions. To address these limitations, future research should aim to diversify the sample, incorporate a wider range of assessment tools, and explore the impact of different teaching methods on language skills in various educational settings.

Vocabulary is one of the crucial parts of learning English because it can predict learners' English performance. The more vocabulary knowledge students have, the better their performance in English skills (reading, writing, listening, speaking). Students can additionally understand the material and answer questions, yet they may also produce understanding quickly while speaking or expressing viewpoints since they have an extensive
vocabulary range. Therefore, the ability to have a wide range of vocabulary is necessary for learning English, especially for EFL students. For further study, it would be really helpful to bring more specific topics by connecting each skill with vocabulary knowledge using LEX30 in Indonesian school students. This is because there is still a lack of discussion about LEX30 on student performance in Indonesia, so it can be used as an evaluation to develop curriculum and learning methods. The suggestions are also aimed at schools and English teachers. They can pay more attention to students' vocabulary knowledge as well, not just the ability to answer questions from the textbook. This can be done by introducing new vocabulary in every lesson and conducting mini quizzes to evaluate students' vocabulary knowledge. This will certainly be very helpful for students in the learning process and their performance in learning English. The suggestions also can help teachers in assessing students' learning achievements and skills in class. Also, by focusing more on students' vocabulary knowledge, the government's curriculum target of mastering 4,000-5,000 lexical items after graduating from high school can be achieved.

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