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THE EFFECTIVENESS OF USING STIMULER APPLICATION AND VOCABULARY MASTERY ON SPEAKING SKILLS IN CIREBON VOCATIONAL HIGH SCHOOL

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Abstract: This study examined the effectiveness of the use of Stimuler application and vocabulary mastery in improving vocational high school students' speaking skills in Cirebon. The study used a quantitative survey design and involved 149 tenth-grade students from two vocational schools. Data were collected through a Stimuler usage questionnaire, a vocabulary mastery test, and a speaking performance test. The findings show that the use of the Stimuler application and vocabulary mastery influence students' speaking skills individually and jointly. The Stimuler application, which is AI-based, provides interactive speaking practice and feedback, while vocabulary mastery supports clearer and more confident communication. Together, these factors substantially contribute to the development of students' speaking proficiency, though other factors beyond the scope of this study also play a role. Overall, the results indicate that combining technology-assisted speaking practice with robust vocabulary mastery creates a more effective and engaging learning environment for vocational students.
Keywords: Speaking Skills, Stimuler Application, Vocabulary Mastery

INTRODUCTION

English is a global language that plays a pivotal role in various industries, including technology, business, education, and entertainment. Its status as the language of commerce has expanded into a necessity for global communication (Andayani, 2022). In learning English, students are required to master four core skills: listening, speaking, reading, and writing. Among these, speaking holds a special importance as it enables direct communication and self-expression. Consequently, vocational school students are required to learn English, with a particular emphasis on speaking.

Speaking is a key component of human communication, involving the production of language to convey ideas, thoughts, and opinions. According to (Rahmawati S, 2022) defines speaking as the skill of producing sounds or language to express thoughts and viewpoints. Common issues faced by students in mastering speaking skills include anxiety, insecurity, and limited vocabulary. Research by (Zalukhu et al., 2023) at SMK Negeri 1 Gunungsitoli revealed that many vocational students struggle to express themselves orally in English, due to lack of confidence or fear of making mistakes.

To address these challenges, the integration of technology in language learning has become increasingly important. One innovative solution is the Stimuler application, an AI-powered platform specifically designed to improve speaking skills by providing instant feedback on pronunciation, grammar, fluency and vocabulary. The use of such technology aligns with the Technological Pedagogical Content Knowledge (TPACK) framework, which emphasizes the effective integration of technology, pedagogy, and content in teaching (Koehler & Mishra, 2008). Through TPACK, teachers can meaningfully incorporate applications like Stimuler into speaking instruction, creating engaging and student-centered learning environments.

Stimuler application various features, including interactive speaking practice, more than 100 conversation topics, scenario-based exercises, or simply random challenges. Its user-friendly interface and immediate feedback help learners recognize and correct errors, thereby supporting the development of speaking fluency and confidence. These features make Stimuler a potential tool for improving students' speaking performance, particularly in vocational contexts.

In addition to technological support, vocabulary mastery plays a vital role in speaking proficiency. Adequate vocabulary enables learners to express their thoughts with clarity, choose appropriate words for various contexts, and avoid misunderstandings (Sari, 2021). According

to Tarigan (as cited in Sari, 2021), linguistic proficiency is largely determined by the quantity and quality of an individual's vocabulary. A strong vocabulary foundation enhances students' confidence and fluency, making speaking tasks less daunting.

Previous studies have demonstrated the positive impact of technology and vocabulary mastery on speaking skills. Zakiah et al. (2023) found that the ELSA Speak application significantly improved students' pronunciation. Kristiani & Pradnyadewi (2021) reported that YouTube effectively supports speaking development by allowing students to practice and receive feedback through recorded videos. Furthermore, Dalimunthe & Haryadi (2022) revealed that both learning strategies and vocabulary mastery significantly influence speaking ability, while Sari (2021) confirmed a strong correlation between vocabulary achievement and speaking proficiency.

Based on these findings, speaking remains a challenging yet essential skill for vocational students. Although previous research has explored various technological tools and the role of vocabulary mastery, studies focusing on the combined use of the Stimuler application and vocabulary mastery in vocational schools are still limited. Therefore, this study aims to examine the effectiveness of using the Stimuler application and vocabulary mastery on students' speaking skills at a vocational high school in Cirebon.

METHODOLOGY

This study employed a quantitative method with a survey design to investigate the influence of the Stimuler application and vocabulary mastery on students' speaking skills. The quantitative method involves gathering numerical data in order to investigate phenomena (Husna, 2022). Survey research designs are a collection of research techniques wherein a survey is given to a sample or the full population in order to characterize the attitudes, beliefs, actions, or traits of the population (Creswell & Guetterman, 2019). The research was conducted at SMK Kartika XIX-3 Cirebon and SMK Ponpes Manba'ul Ulum during the 2024/2025 academic year, with a sample of 149 tenth-grade students selected from a population of 238 using the Slovin formula.

Data were collected through a Likert-scale questionnaire on Stimuler use, a vocabulary mastery test with the Guttman scale, and a speaking test assessed using a rubric covering vocabulary, fluency, pronunciation, grammar, and comprehension (Brown in Qomariyah, 2023). furthermore, Instrument validity was determined to assess the validity of the instrument; an item was deemed valid if its r-count value was greater than its r-table value (r-table = 0.632). The

findings demonstrated the validity of each of the 14 questionnaire items. 16 of the 20 items on the vocabulary mastery test were valid, and the analysis did not include the 4 invalid items. The five indicators on the speaking skills test—grammar, vocabulary, comprehension, fluency, and pronunciation—also satisfied the validity requirements because all of the r-count values were higher than the r-table value.

In the meantime, Cronbach's Alpha was used to assess instrument reliability; a value higher than 0.60 indicated adequate reliability (Purnomo, 2016). Cronbach's Alpha values for the questionnaire, vocabulary mastery tests, and speaking skills test were 0.919, 0.943, and 0.831, respectively, according to the reliability test results. These findings show that every device used to obtain the data was dependable and consistent. In addition, SPSS version 25 was used for data analysis. The data was summarized using descriptive statistics, and t-tests and F-tests were utilized in multiple regression analysis to investigate the partial and simultaneous impacts of using Stimuler application and vocabulary mastery students' speaking skills.

FINDINGS AND DISCUSSION

The descriptive statistics show that the Stimuler Application had a mean score of 57.91 (SD = 5.759), indicating moderate variation with scores ranging from 43 to 70, and a fairly symmetrical distribution (median = 58, mode = 57). The Vocabulary Mastery mean was 12.80 (SD = 1.606), with scores ranging from 9 to 16 and clustered around the median and mode of 13, suggesting relatively homogeneous performance. Meanwhile, the Speaking Skills mean was 78.98 (SD = 7.161), with scores ranging from 60 to 92 and centered around 80, reflecting moderate variability but generally good performance across students.

As for the classical assumption, the normality test using the Kolmogorov-Smirnov method showed a significance value of 0.200 (> 0.05), indicating that the residuals were normally distributed. The linearity test showed a significant linear relationship between the Stimuler application and speaking skills ($p = 0.000 < 0.05$) with value of deviation from linearity ($p = 0.805 > 0.05$), indicating the assumption of linearity was met. Similarly, vocabulary mastery and speaking skills also demonstrated a significant linear ($p = 0.002 < 0.05$) with value of deviation from linearity ($p = 0.092 > 0.05$), confirming that both variables could be validly analyzed using linear regression.

The multicollinearity test showed tolerance values of 0.998 (> 0.10) and VIF values of 1.002 (< 10) for both variables, indicating no multicollinearity and confirming that the regression model is reliable. meanwhile, yhe Glejser test showed significance values of 0.902 for the Stimuler Application and 0.082 for Vocabulary Mastery (> 0.05), indicating no heteroscedasticity. Based on these results, The regression analysis produced the equation $Y = 116.356 – 0.858X_1 + 0.964X_2$, showing that if both predictors are zero, speaking skills are estimated at 116.356. The coefficient for the Stimuler Application (X_1) is –0.858, meaning speaking skills decrease by 0.858 points for each unit increase, while the coefficient for Vocabulary Mastery (X_2) is 0.964, indicating an increase of 0.964 points in speaking skills for each unit improvement.

Moreover, the t-test results showed that both independent variables significantly affect students' speaking skills. The Stimuler Application had a significant effect with t = 12.256 > t-table (1.976) and p = 0.000 < 0.05, meaning Ha is accepted and Ho is rejected. Similarly, Vocabulary Mastery also had a significant effect with t = 3.839 > t-table (1.976) and p = 0.000 < 0.05. Thus, both variables are proven to significantly influence students' speaking skills. Furthermore, The ANOVA results show that the regression model with two independent variables (Stimuler Application and Vocabulary Mastery) is significant, with F = 84.961 > F-table (3.06) and p = 0.000 < 0.05. This indicates that both variables jointly have a statistically significant effect on students' speaking skills.

Based on these results, this study focuses on three aspects: (1) the effect of using Stimuler applications on speaking skills, (2) the effect of vocabulary mastery on speaking skills, and (3) the effect of using Stimuler applications and vocabulary mastery jointly on speaking skills. Regarding the first aspect, the statistical research shows that the variable use of stimuler applications has a t count of 12.256 > t table of 1.97653. The variable use of stimuler applications, however, has a significant of 0.000 < 0.05. According to the test results, Ho is rejected and Ha is accepted. This means that the alternative hypothesis, which states that using the Stimuler application affects speaking skills in vocational high schools, can be accepted. Thus, student' speaking skills can be impacted by the use of stimuler applications.

In addition, the Stimuler app, an AI-based tool that provides interactive speaking exercises and real-time feedback on vocabulary, grammar, fluency, and pronunciation. Features such as live speaking challenges and practice with an AI coach make it especially beneficial for improving speaking ability. These findings align with the TPACK theory, which emphasizes integrating

technology, pedagogy, and content to support effective learning. By reinforcing material and teaching strategies, Stimuler improves students' speaking performance and creates a more engaging and enjoyable classroom environment.

In the vocational school context, one of the main limitations of the Stimuler application is unequal access to technology. Not all students have stable internet connections or compatible devices, which makes it difficult to use AI-based applications optimally, especially for practice outside the classroom. This may limit students' learning opportunities and reduce the consistency with which they use Stimuler. Additionally, differences in digital literacy levels may affect how effectively students can navigate and utilize the application's features.

Another limitation relates to students' learning motivation and engagement. While some students actively use Stimuler and benefit from its real-time feedback, others show low engagement and only use it when instructed by a teacher. This suggests that Stimuler's effectiveness depends heavily on students' self-discipline and teachers' ability to meaningfully integrate the application into daily classroom activities. Without sufficient guidance and structured implementation, Stimuler may merely function as a supplementary tool rather than an integral part of speaking instruction.

Meanwhile, the second aspect statistical results indicate that the vocabulary mastery variable has a t count of 3.839 > t table of 1.97653. Nonetheless, the significance level for the vocabulary mastery variable is 0.000 < 0.05. The test results show that Ha is accepted while Ho is rejected. This implies that the alternative hypothesis, according to which speaking skills in vocational high schools are affected by vocabulary mastery, can be accepted. Thus, vocabulary mastery can have an effect on students speaking skills.

In addition, students can do to speak English more accurately and fluently increases with their level of vocabulary mastery. Due to, a key element of speaking is vocabulary. Students will struggle to create sentences, communicate ideas, and comprehend participants if they lack a large enough vocabulary. This supports Tarigan's opinion (Sari, 2021) that anyone's vocabulary, both in terms of quality and quantity, determines their level of language proficiency. Therefore, vocabulary mastery is a crucial component of speaking skills that cannot be ignored. Students who have a larger vocabulary are more likely to be able to articulate ideas, respond to inquiries, and participate fully in English-language discussions.

The last aspect, this study's F test obtained research data with f-count 84.961 > f-table 3.06 with a significance level of 0.000 < 0.05. Therefore, Ho is rejected and Ha is accepted, the third hypothesis can be accepted. However, it can be concluded that the use of stimuler applications and vocabulary mastery significantly affect speaking skills at vocational high schools in Cirebon, especially at SMK Kartika XIX Kota Cirebon and SMK Ponpes Manbaul Ulum. These two independent variables work jointly to improve students' speaking skills.

Learning becomes more effective when technology-based applications and vocabulary mastery are combined. Vocabulary provides the foundation for constructing sentences and ideas, and the Stimuler app offers interactive and engaging exercises for practice and discovery. According to (Dalimunthe & Haryadi, 2022), both vocabulary and learning strategies significantly affect speaking ability. This study concludes that the Stimuler application and vocabulary mastery play complementary roles in improving vocational students' speaking skills: the application provides sustainable practice opportunities, and vocabulary serves as the basis for communication. Overall, both variables were found to have significant partial and simultaneous effects, suggesting that integrating technology with core language competencies fosters a more effective, interactive, and enjoyable learning environment.

Additionally, several of external factors outside of the Stimuler application and vocabulary mastery have an impact on student speaking skills. These include exposure to English beyond the classroom, interactions in the classroom, teaching methods, the learning environment, and psychological elements like confidence, anxiety, and communication skills. Limited instructional time for English speaking practice may also have an impact on students' speaking development in vocational institutions. This indicates that students' speaking skills are influenced not only by stimuler application and vocabilary mastery variables but also by other external factors.

In line with these findings, the regression analysis showed an R^2 value of 0.538, indicating that 53.8% of the variance in students' speaking skills is explained by the Stimuler application and vocabulary mastery, while the remaining 46.2% is influenced by other factors. This suggests both variables substantially contribute to improving speaking skills, with the Stimuler application providing interactive practice and feedback, and vocabulary mastery enabling clearer, more confident communication. Thus, the model demonstrates strong predictive power in explaining the influence of these factors on vocational students' speaking skills in Cirebon.

CONCLUSION

This study examined the effectiveness of using stimuler application and vocabulary mastery on speaking skills in Cirebon vocational high school. The results showed that both variables significantly affect speaking skills, either partially or simultaneously. The use of Stimuler application provided students with interactive speaking practice, real-time feedback, and engaging learning activities, which improved their confidence and fluency. Meanwhile, vocabulary mastery provided a strong foundation for clear and accurate expression of ideas in communication. Together, these factors complement each other in enhancing students' speaking skills.

Regression analysis revealed that vocabulary mastery and the use of the Stimuler application accounted for 53.8% of the variance in students' speaking skills. This suggests that these factors significantly contribute to speaking progress, while other factors influence the remaining variance. In light of these findings, teachers should incorporate the Stimuler application into routine speaking instruction through guided and planned activities, rather than merely utilizing it as an additional tool. To boost student interest in and regular use of the application, teachers should implement incentive techniques such as goal-based speaking exercises, group practice, and ongoing feedback. To promote speaking fluency, it is also advised that teachers strengthen vocabulary education using communicative and contextual methods.

Future research is recommended to investigate more creative methods by integrating the Stimuler application with other innovative technologies, such as learning management systems, gamification, and blended learning models. To provide a more thorough picture of the elements impacting students' speaking abilities, future research may also examine other variables, such as learning motivation, speaking anxiety, instructor scaffolding, and classroom interaction patterns. A deeper understanding of the long-term efficacy of technology-assisted speech training can be obtained by extending the study to other educational levels or by employing experimental methodologies.

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