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THE INFLUENCE OF TECHNOLOGY USE ON THE EFFECTIVENESS OF ASSESSING SPEAKING SKILLS IN ENGLISH LANGUAGE LEARNING

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Abstract
This study aims to determine the effect of using technology, especially the Duolingo application and YouTube learning videos, on the effectiveness of speaking skills assessment in English learning for students of class VIII-A SMPN 2 Susoh. The research method used a one-group pre-test and post-test pre-experiment design with a sample of 30 students selected purposively. The research instrument is a speaking test that assesses aspects of pronunciation, fluency, vocabulary, and grammar with a 1-5 scale rubric. The treatment was conducted through six sessions of technology-based learning, followed by a comparison of pre-test and post-test results. Data analysis using SPSS showed an increase in the average score from 61.87 in the pre-test to 78.23 in the post-test, or an increase of 26.45%. These results indicate that the use of technology can significantly improve the quality of assessment and students' speaking skills. The findings of this study recommend the utilisation of digital learning media as an alternative to more effective assessment methods, especially in junior high schools in non-metropolitan areas.
Keywords*: Duolingo; YouTube; speaking skills; learning technology.*

INTRODUCTION

The rapid development of technology in the 21st century has brought significant changes in teaching, learning, and assessment practices in education, including English language learning. Digital tools offer advantages such as increasing student engagement, providing immediate feedback, and providing an interactive learning environment. In language learning, speaking skill is the most challenging ability to assess objectively, as it involves the direct production of language that relies on fluency, coherence, and interaction. In English as a Foreign Language (EFL) contexts, students rarely have authentic speaking experiences, making speaking skills important but often underdeveloped. Effective speaking assessment is essential to encourage active participation, communication skills, and language competence. However, traditional assessment methods such as oral presentations or face-to-face interviews have limitations, including time constraints, assessor subjectivity, and logistical challenges, especially in large classes that are common in Indonesian secondary schools.

In addition, the selection of the Duolingo app and YouTube learning videos in this study was based on practical and pedagogical considerations. If only traditional tests are used, students tend to be passive, and opportunities to practice speaking are limited to exam moments. Conventional tests also place more emphasis on final results than on the learning process. In contrast, the use of

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technology-based applications allows students to practice independently, receive instant feedback, and repeat exercises as needed. Thus, technology serves not only as an evaluation tool but also as a learning medium that can enhance students' motivation, engagement, and confidence in speaking English. This makes the application more relevant than pure tests as the sole assessment instrument.

Previous research has shown that technology can improve speaking performance as well as assessment effectiveness. Ziegler (2016) found that the use of voice-based applications can significantly improve students' pronunciation and fluency. Meanwhile, Ducate and Lomicka (2009) reported that podcasting technology helped students reflect on and improve their oral production. Similarly, AI-based speech recognition systems, Flipgrid, Google Voice, and VoiceThread proved to have potential as a more flexible, repeatable, and learner-centred alternative to speaking assessments. Chapelle and Voss (2016) assert that over the past two decades, technology has reshaped language assessment practices by providing more authentic, interactive, and adaptive test environments, making it relevant for the evaluation of speaking skills.

While these findings are promising, most of the previous studies were conducted in Western countries or at the higher education level. Empirical evidence on technology integration for speaking assessment in junior secondary schools in Indonesia is limited, especially in rural or semi-urban areas where technology access, digital literacy, and pedagogical adaptability vary. At SMPN 2 Susoh, a school in a non-metropolitan area of Indonesia, speaking assessment remains a challenge. Teachers tend to use traditional oral tests, which are time-consuming and prone to subjective bias. Although since the COVID-19 pandemic, the school has adopted several digital tools such as Google Classroom and mobile-based applications for speaking practice, their impact on the quality of speaking skills assessment has not been systematically assessed. This is in line with the findings of Yunus and Suliman (2014), who noted that although ICT tools have great potential in improving language learning in secondary schools, their effectiveness is highly influenced by contextual factors such as infrastructure, teacher training, and learner readiness.

This situation reveals a clear research gap: the lack of evidence-based studies at the local level on the influence of technology use on the effectiveness of speaking skills assessment in Indonesian junior secondary schools. Moreover, the effectiveness of these tools should be measured not only by their ease of use, but also by their ability to produce valid, reliable and pedagogically meaningful assessment results.

Based on this, this study aims to investigate the effect of using technology-specifically the Duolingo application and YouTube learning videos-on the effectiveness of the speaking skills assessment of grade VIII students at SMPN 2 Susoh. It also aims to explore teachers' and students' perceptions of ease of use, impact on motivation, and fairness in technology-based speaking assessment. By integrating perception data and performance outcomes, this study is expected to provide a more comprehensive picture of how technology can support or hinder speaking skills assessment.

The research question guiding this study is: “How does the use of technology affect the effectiveness of speaking skill assessment in English language learning at SMPN 2 Susoh?”

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METHODS

This study used a pre-experiment design with a one-group pre-test and post-test design model (Sugiyono, 2010), which allows researchers to measure changes in students' speaking ability before and after treatment without using a control group. The study population was all students in grade VIII of SMPN 2 Susoh in the 2024/2025 school year. From the population, one class, namely class VIII-A, was purposively selected as the research sample, totalling 30 students. The selection of this class was based on the teacher's recommendation, with consideration of the relatively homogeneous level of initial speaking ability and the presence of students who were maintained, thus minimising uncontrolled variation.

The research instrument was a speaking test that assessed four main aspects of speaking skills, namely pronunciation, fluency, vocabulary, and grammar. The assessment was conducted using a 1-5 scaled rubric for each aspect, referring to Luoma's (2004) speaking skill assessment guidelines. The research process consisted of three stages, namely pre-test, treatment, and post-test. In the pre-test stage, students were asked to perform speaking tasks according to the specified topics, and the assessment was conducted using the same rubric for all participants. The treatment phase lasted for six technology-based learning sessions using the Duolingo app and learning videos from YouTube, focusing on vocabulary enrichment, pronunciation practice, and speaking fluency improvement. Students were also allowed to practice independently outside of class hours. The post-test was conducted after all treatment sessions were completed, using the same test form and rubric as the pre-test to maintain consistency of assessment.

The subsequent phase involved data analysis using SPSS after the data collection procedure was completed. The students' speaking abilities were evaluated using a particular formula in the research:

1. Calculating the Student's Percentage Regarding the Post-Test and Pre-Test:

$$P = \frac{f}{N} \times 100\% \qquad \text{(Gay, 2006)}$$

2. Calculating the Average Score

The evaluation of the students' speaking skills is determined through the utilisation of the following formula:

$$x = \frac{\sum x}{N}$$

X = The Average Scores
$\sum$ = The total of all scores
N = The total number of students

3. Understanding the enhancement of one's speaking proficiency score:

$$P = \frac{x_2 - x_1}{x_1} \times 100$$

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Description:
P = The number of students as a percentage
X1 = The average score of the Pre-Test
X2 = The average score of the Post-Test

RESULTS AND DISCUSSION

This study involved 30 students of class VIII-A at SMPN 2 Susoh to examine the effect of using technology, specifically the Duolingo application and learning videos on YouTube, on the effectiveness of speaking skills assessment. The analysis was conducted by comparing the pre-test and post-test scores before and after the treatment, which was conducted in six sessions. The quantitative results showed that the mean score of students' pre-test was 61.87, with a minimum score of 58, a maximum score of 66, and a standard deviation of 2.30. After the treatment, the average post-test score increased to 78.23, with a minimum score of 74, a maximum score of 82, and a standard deviation of 2.19. This increase is equivalent to 26.45% compared to the initial score.

Table 1. Summary Statistics of Pre-Test and Post-Test Speaking Scores

Statistic	Pre-Test	Post-Test
Mean	61.87	78.23
Median	62.00	78.00
Standard Deviation	2.30	2.19
Minimum	58	74
Maximum	66	82
Percentage Improvement	–	26.45%

Based on Table 1, there was a significant increase in the average score between the pre-test and post-test. All statistical indicators, minimum, maximum, and median values increased, indicating that improvements in speaking skills occurred evenly among all students. The relatively small standard deviation in both tests also indicates that the distribution of student scores is fairly homogeneous, so that the improvement that occurred can be said to be consistent among all research participants.

Figure 1 below presents a visual representation of the comparison of pre-test and post-test scores for each student, which provides a clearer picture of the trend of improvement in speaking skills after the implementation of technology-based learning.

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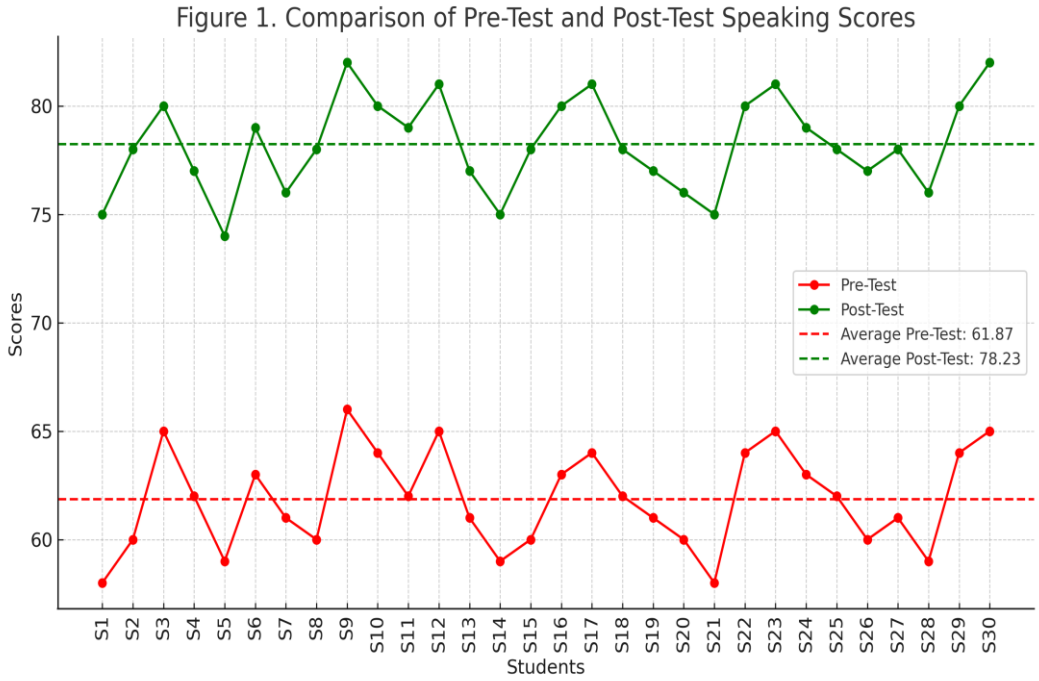

Figure 1. Comparison of Pre-Test and Post-Test Scores

Based on Figure 1, it can be seen that all students experienced an increase in scores after the treatment. The post-test trend line consistently remains above the pre-test line, confirming an improvement in speaking ability among all participants. This increase demonstrates the effectiveness of using Duolingo and YouTube in enhancing the quality of assessment and speaking learning. This is also consistent with qualitative data showing improvements in self-confidence, active participation, pronunciation, and the use of a more diverse vocabulary among students.

The results of this study indicate a significant improvement in students' speaking skills after the implementation of the Duolingo app-based technology and YouTube learning videos. The average score increased from 61.87 (pre-test) to 78.23 (post-test), or by 26.45%, indicating that the use of technology not only aids the learning process but also enhances the effectiveness of speaking skill assessment. These findings align with Ziegler's (2016) research, which states that the use of voice-based applications can improve fluency and pronunciation.

The homogeneity of scores indicated by low standard deviations (2.30 on the pre-test and 2.19 on the post-test) reinforces the conclusion that improvement occurred evenly across all participants. This shows that technology-based learning approaches can be effectively applied in classrooms with relatively diverse ability levels. Research by Ducate and Lomicka (2009) also supports this, with findings that digital media such as podcasts help students reflect on and improve their speaking skills.

Furthermore, the increase in post-treatment scores aligns with the learning motivation theory proposed by Deci & Ryan (2000) in Self-Determination Theory, where the use of interactive technology can enhance students' intrinsic motivation through more engaging and meaningful learning experiences. The integration of technology also helps minimise the assessment bias that often arises in traditional assessments (Luoma, 2004), as students have the opportunity to practice

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repeatedly before the assessment.

However, there are several limitations that need to be considered. First, this study used a pre-experimental design without a control group, so the influence of external factors on the results could not be eliminated. Second, the relatively short duration of the intervention (six sessions) may not have been sufficient to capture the long-term impact of technology use on speaking skills.

CONCLUSION

Based on the results of the study, it can be concluded that the use of the Duolingo application and YouTube learning videos has a positive and significant effect on the effectiveness of the assessment of speaking skills of class VIII-A students at SMPN 2 Susoh. The increase in the average score by 26.45% shows that technology-based learning media can improve learning outcomes, strengthen students' confidence, enrich vocabulary, and improve pronunciation. Therefore, the application of technology in English language learning in secondary schools, especially in non-metropolitan areas, is highly recommended. The use of digital platforms can be a solution to overcome time constraints, subjective biases, and logistical challenges faced in the assessment of speaking skills. For future research, it is recommended to use an experimental design with a control group and extend the duration of the intervention to get a more comprehensive picture of the long-term effectiveness of using technology in language learning.

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