The Effect of The TED-Ed Application on Students Word Recognition in Listening at SMPN 47 Bekasi

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ABSTRACT

The objective of this research was to investigate the effect of using the TED-Ed application on students' word recognition in listening skills. This study employed a pre-experimental method with a one-group pre-test and post-test design. The population consisted of all eighth-grade students of SMPN 47 Bekasi, totaling 210 students, while the sample of 35 students was selected through purposive sampling. The instrument used was a multiple-choice word recognition test administered before and after the treatment. Data analysis was conducted using the Shapiro-Wilk test for normality and the Wilcoxon Signed-Rank Test for hypothesis testing due to the data being not normally distributed. The results revealed a significant difference between students' pre-test and post-test scores after being taught with the TED-Ed application, as shown by an Asymp. Sig. (2-tailed) value of $p < 0.001 < 0.005$. This indicates that the use of TED-Ed positively influenced the improvement of students' word recognition in listening. These findings highlight the potential of technology-based learning media in enhancing English language teaching strategies, particularly in supporting students' listening comprehension, and suggest that interactive platforms like TED-Ed can serve as effective tools to create engaging and meaningful learning experiences.

Keywords: TED-Ed; Word Recognition; Listening; Interactive learning media

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INTRODUCTION

The ability to understand spoken language by listening is a very important skill in foreign language learning because this skill is the initial bridge for students to develop abilities in word recognition. However, in Indonesia many students have difficulty understanding listening material, especially in terms of identifying words used by native speakers. This has become a major problem in the context of learning English as foreign language (EFL), so listening skills are one of the biggest challenges faced by students in Indonesia, especially at the junior high school level.

Research by Izzah and Keeya (2019) indicates that listening comprehension difficulties for EFL students include speech distortion a weak lexical recognition, a low phonological sensitivity, visual complexity, and a high speech rate. Significantly, these factors affect word recognition, which is one of the key components in fully understanding written language.

According to linguistic theory, word recognition is a fundamental process that supports the success of listening comprehension. Ramli et al. (2019) stated that success in listening comprehension is determined by speech skills, word recognition comprehension, and metacognitive abilities. Thus, it is important to develop a listening learning strategy that can strengthen word recognition skills.

Over the past few years, technology use has emerged as an alternative method of overcoming difficulties in language learning, including difficulties with listening. One potentially useful type of technology is the use of interactive video media. Videos that are accompanied by images, text, and sound can help students connect words with meaning more fully.

TED-Ed is one of the educational video platforms that offers a variety of content in a single video format with English narration, complete with a transcript and interactive features. This platform is designed to facilitate conceptual understanding and discussion through high-quality instructional videos. In the context of listening instruction, TED-Ed can be a medium that provides authentic input with a visual context that enhances students' understanding.

Studies conducted by Merdianti, Santosa, and Dewi (2023) demonstrate that TED-Ed usage can significantly improve SMA students' listening skills. The experiment group using TED-Ed had an average score of 80.03 in the study, while the control group only reached 75.49. According to the results, using interactive videos can increase students' skills.

Supporting how important the use of Ted-Ed videos as a medium for listening practice, research by Obari and Lambacher (2020) proves that the application of shadowing with Ted-Ed videos can significantly develop the sound perception and pronunciation accuracy of EFL student.

However, some of these research focuses still do not specifically examine word recognition in listening among junior high school students, most of the research is conducted at the senior high school and university level.

To illustrate the process of increasing understanding through the use of videos such as TED-Ed, Paivio's dual coding theory (1986) might be applied. This theory states that information that is presented both verbally and visually will be easier to understand and more appealing than information that is presented only verbally. Accordingly, it is believed that listening comprehension exercises in audiovisual sizable formats such as TED-Ed, will significantly increase students' listening comprehension.

The use of TED-Ed application in listening learning can be an alternative solution to overcome word recognition challenges. Nevertheless, there is not much empirical evidence that evaluates the extent to which the use of this application has an impact on word recognition in the context of listening learning for junior high school students, especially in Indonesia.

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Therefore, this research is important to find out whether the use of the TED-Ed application has a significant effect on word recognition in the listening skills of junior high school students, especially at SMPN 47 Bekasi. Using a pre-experimental design, this study investigates the effectiveness of TED-Ed by comparing students' pre-test and post-test scores within a single group after the treatment.

Theoretically, this research is expected to enrich the literature on technology-based listening learning strategies, especially in the context of EFL at the junior high school level. This research can also contribute to developing a theoretical framework regarding the relationship between audiovisual input and the process of word recognition in listening skills.

Practically, this research is expected to provide alternative listening learning strategies that are more interesting and effective for junior high school teachers, as well as increasing student motivation and involvement in the English learning process.

Thus, the main purpose of this study is to determine the effect of using the TED-Ed application on word recognition in junior high school students' listening skills. This research is also expected to provide theoretical and practical benefits for the development of English language learning in Indonesia, especially in mastering listening skills at the basic education.

METHODS OF RESEARCH

This study applied a quantitative approach using a pre-experimental design, specifically a one-group pre-test and post-test design, to measure the effect of the TED-Ed application on students' word recognition in listening. In this design, students first completed a pre-test to assess their initial ability, received treatment through listening activities with TED-Ed videos combined with an interactive game, and finally took a post-test to evaluate improvement. According to Sugiyono (2016), experimental methods aim to examine the effect of a treatment on variables, while Fraenkel, Wallen, and Hyun (2012) note that the one-group pre-test and post-test design is effective in educational research to determine changes in learning outcomes. Although it lacks a control group, this design is practical and relevant for field conditions with limited time and access, still enabling the identification of causal relationships between treatment and outcomes.

The treatment in this study used TED-Ed videos as listening material supported by the Whisper Challenge Game, an offline interactive game that fosters listening focus and word recognition. Students worked in groups where the first member listened to an audio word, whispered it to the next, and the last student matched it with written word choices. This activity encouraged cooperation, concentration, and active learning. Brown (2001) emphasizes that communicative and meaningful tasks enhance listening, while Harmer (2007) and Richards (2008) highlight the role of audio-visual media and authentic materials in improving engagement and comprehension. Anderson and Lynch (2003) further describe listening as an active process involving recognition, interpretation, and meaning construction. Thus, combining TED-Ed with interactive games is considered effective to strengthen word recognition and support listening comprehension in junior high school students.

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RESULT AND DISCUSSION

This study aims to determine the effect of using the TED-Ed video entitled " How Some Friendships Last – and Others Don't" and Whisper Challenge activities on word recognition skills in students' listening skills. Data is obtained from the test results given before (pre-test) and after (post-test) treatment.

Table 4.2 Descriptive Statistics of Pre-test and Post-test Values

		Mean	N	Std. Deviation	Std. Error Mean
		Paired Samples Statistic			
Pair 1	PRE TEST	57.86	35	12. 561	2.123
	POST TEST	93.71	35	7. 509	1.269

Based on the table above, the mean value of the students pre-test was 57.86, while the mean value of the post-test increased to 93.71. The standard deviation of the pre-test was 12.561, showing a greater variation in scores compared to the post-test which had a standard deviation of 7.509. This shows that after the treatment, students scores not only increased on average but also became more evenly distributed.

Normality Test

The normality test is carried out to determine whether the research data is normally distributed or not. Testing was carried out with the Shapiro-Wilk test because the number of samples was less than 50. The results of the normality test are shown in Table 4.3 below.

Table 4.3 Normality Test
Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PRE TEST	225	35	<,001	853	35	<,001
POST TEST	313	35	<,001	770	35	<,001

a. Lilliefors Significance Correction

Based on Table 4.3, it is known that the Sig. value in the Shapiro-Wilk test for the pre-test is 0.001 and for the post-test is 0.001. Both values are smaller than the significance level of 0.05, so it can be concluded that the data is not normally distributed. Therefore, hypothesis testing was carried out using the non-parametric Wilcoxon Signed Rank Test.

Hyphothesis

Hypothesis testing was conducted using the Wilcoxon Signed Rank Test since the normality test showed that both pre-test and post-test data were not normally distributed. This test aimed to examine the difference in students' word recognition ability in listening after treatment using the TED-Ed video *"How Some Friendships Last – and Others Don't"* and Whisper Challenge activities.

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Table 4.4 Hypothesis Test Summary

Hypothesis Test Summary

Null Hypothesis	Test	Sig. a,b	Decision
The median of differences between PRE TEST and POST TEST equals 0.	Related-Samples Wilcoxon Signed Rank Test	< .001	Reject the null hypothesis.

a. The significance level is .050.
b. Asymptotic significance is displayed.

Table 4.5 Wilcoxon Signed Rank-Test Results

Related-Samples Wilcoxon Signed Rank Test Summary

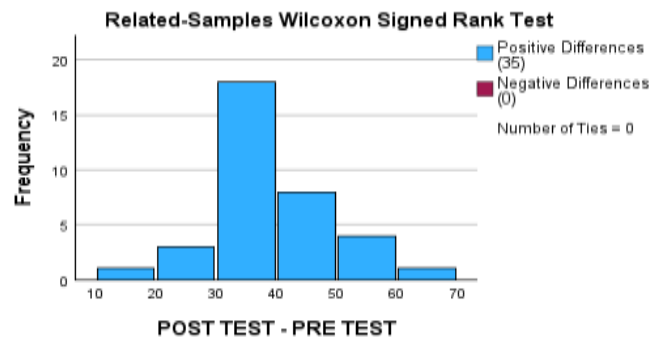| Total N	35
Test Statistic	630.000
Standard Error	60.738
Standardized Test Statistic	5.186
Asymptotic Sig. (2-sided test)	< .001

Figure 4.1 Histogram of Wilcoxon Signed Rank Test Results

Based on the results in Table 4.4, the significance value (Sig.) of <0.001 is smaller than α = 0.05. Thus, the null hypothesis stating that there is no difference between the pre-test and post-test scores is rejected. This means that there is a significant difference between the pre-test and post-test results students.

Discussion of Research Results

Based on the results of data analysis using the Wilcoxon Signed Rank Test, a significance value of <0.001 (<0.05), which means there is a significant difference between the pre-test and post-test scores of word recognition ability in students listening skills. These results indicate that the treatment in the form of

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using the TED-Ed video entitled "How Some Friendships Last – and Others Don't" and the Whisper Challenge activity contributed positively to improving students ability to recognize word heard.

The increase in the average score from 57.86 in the pre-test to 93.71 in the post-test indicates very significant progress. This finding is in line with multimedia learning theory Mayer (2009) which states that learning that combines audio-visual elements can strengthen understanding and retention of information. The TED-Ed video used in this study provides authentic language exposure, clear visual context, and structured narrative, thus helping students process information more effectively.

In addition, Whisper Challenge activities provide opportunities for students to practice active listening and concentration interactively. This is accordance with Communicative Language Teaching (CLT) theory which emphasizes the importance of interaction in language learning. Through this game, students are not only engaged cognitively, but also emotionally, which can increase learning motivation and reduce anxiety in understanding English materials.

The results of this study are consistent with the findings of previous research, for example research by Putri (2020) which found that the use of educational video media can significantly improve students listening skills. Similarly, research by Ahmad (2019) proves that communication-based game activities can strengthen word recognition skills in foreign languages.

Thus, the results of this study prove that the use of a combination of modern learning media (educational videos) and game-based learning activities is effective in improving word recognition skills in listening learning for secondary school students.

CONCLUSION

This conclusion is compiled based on the results of data analysis and discussion in Chapter IV. This study aims to determine the effect of using the TED-Ed video entitled *" How Some Friendships Last and Others Don't"* and Whisper Challenge activity on word recognition ability in listening skills of eighth-grade SMPN 47 Bekasi students.

Based on the results of statistical using the Wilcoxon Signed-Rank Test, it was found that the significance value (p-value) is smaller than $\alpha = 0.05$, so it can be concluded that there is a significant effect of using the learning media on improving students' word recognition skills. The increase in mean scores from pre-test to post-test shows that the learning media used is effective in helping students recognize words heard in an English context.

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