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THE EFFECT OF VISUAL AID ON STUDENTS' LISTENING COMPREHENSION

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Abstract
This study explores how animated videos affect listening comprehension among 16 senior English language education students at Universitas Muhammadiyah Jember. Participants were exposed to both video and audio materials on nostalgia and melancholy, respectively, and answered 10 multiple-choice questions for each type. Analysis using a dependent sample t-test revealed no significant difference between the audio-only and video conditions, with a t-value of -0.522, a p-value of 0.609, and minimal effect sizes (Cohen's d of -0.131 and Hedges' g of -0.124). Despite theoretical support from dual-coding and multimedia learning theories, the study found negligible benefits from visual aids. Possible influencing factors include learner proficiency, content complexity, cognitive load, and low motivation.

Keywords: Visual Aid; Animated Video; Listening Comprehension

1. INTRODUCTION

English encompasses four key skills: listening, speaking, reading, and writing, with listening being the most crucial as it is the first skill acquired in language learning. Effective listening is vital for language development, and its success depends on the quality of listening materials (Richards, 2008; Sadiku, 2015; Vandergrift, 1999). Harmer (2007) notes that understanding requires full engagement with the input, while Richards (2008) highlights the need for awareness to learn effectively.

To teach listening comprehension effectively, teachers must use engaging and comprehensible materials, with audiovisual media being particularly beneficial. Rost (2011) emphasizes the growing focus on listening in second language teaching. Studies by Danxin Liang (2013) and Chen Chan et al. (2014) show that well-designed multimedia, especially videos, enhance comprehension by activating background knowledge and maintaining student attention (Harmer, 2007).

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2. LITERATURE REVIEW

Definitions of listening comprehension vary among scholars. Brown and Yule (1983) describe it as the ability to comprehend what has been heard, while Rost (2002) defines it as an interactive process in which listeners are involved in creating meaning.

There are two process of listening, namely bottom up and to down processing. Bottom up processing is a process of listening comprehension in which the listener begins by analyzing the incoming input as successive levels of organization of sounds, words, clauses, sentences, and text until those linguistic clues derive the meaning or the understanding (Richard, 2008:4) Top-down processing refers to the listeners use of background knowledge such as previous knowledge of the topic, situational or contextual clues, schemata or scripts to gain the understanding or the message on listening comprehension process (Richard, 2008). Listeners apply stored knowledge to anticipate, interpret, and integrate new information. Effective listening comprehension relies on a flexible combination of both processing methods, integrating background knowledge with language input for deeper understanding.

There are two levels of listening comprehension. First is literal comprehension. It is the understanding of information and facts stated in text. The listeners are required to be able to retell or recall the facts or information presented in speakers' utterance. It includes the ability to identify main ideas, supporting details, and the relationships among ideas (Brasell 2008:17). The second is inferential comprehension. This requires listener to draw conclusions and predictions based on information not explicit stated in passage (Brasell 2008:17).

The studies about the effect of visual aid on listening comprehension were conducted. Harmer (2007) emphasized that understanding and engaging with spoken input are crucial for language activation, while Richards (2008) highlighted the importance of awareness in learning from what we hear. Effective listening comprehension depends on both listener attention and the clarity of the input. Danxin Liang (2013) explored how bottom-up and top-down processing, along with prior knowledge, influence comprehension. His study found that visual stimuli can enhance comprehension by activating background knowledge. Chen Chan, Wang Lei, and Xu Lena (2014) supported this, noting that well-designed multimedia, especially videos, improves listening comprehension. Putri Ananda (2019) also found videos more effective than audio alone for English students, provided the material is familiar and visual clues are well-integrated. Tan Shaojie, Arshad Abd Samad, and Lilliati Ismail (2022) further showed that visual input improves comprehension when it aligns with auditory information, but mismatched visuals can create cognitive overload and distract students (Kirschner et al., 2018).

Despite these findings, few studies have explored the impact of animated videos on listening comprehension. Therefore, study aims to investigate how animated videos influence listening skills. The following hypothesis states: There is significant effects of using visual aid on students' listening comprehension.

3. METHOD

This study employed experimental research methods and repeated measures design. This experimental design allows the same participants to be exposed to different levels of the independent variable at different times. Using convenience sampling, the participants of this study consisted of 16 undergraduate students from the 8th semester enrolled in the English Language Education program at Universitas Muhammadiyah Jember. Participants were recruited through their class president and informed about the study's purpose, procedures, and their rights.

This study used 2 kinds of listening materials: an animated video and an audio. The animated video discussing nostalgia while the audio discussing about melancholy, both sourced from the TED-Ed channel on YouTube.

Instructions were provided in Indonesian to ensure clarity. The test began with the nostalgia video, participants were first given question sheets and allowed three minutes to review them. Participants listened attentively to the video without answering questions initially. After the video's first run, it was replayed, during which participants were permitted to answer the questions as they listened. Once the video concluded, participants had an additional two minutes to review their answers before submitting them.

Following the same procedure, the audio material, which covered a brief history of melancholy, was presented. The questions were printed in the test booklet, which included 10 multiple-choice questions—seven for literal comprehension and three for inferential comprehension.

Data were analyzed using SPSS with a dependent samples t-test in a repeated measures design to assess the impact of the animated video on listening comprehension. This method compared comprehension scores from both the video and audio conditions to identify any significant differences.

4. RESULTS and DISCUSSION

a. Results

To test the hypothesis that visual aids significantly impact students' listening comprehension, a paired samples t-test was conducted comparing scores from audio-only and video conditions. The data analysis results are presented in Table 1.

The t-test results above shows no significant difference between the two means ($t = -0.522$, $p = 0.609$). The mean difference was -1.25, indicating that scores were slightly higher

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for the video condition, but this difference was not statistically significant. Moreover, the effect size below, measured by Cohen's d, was -0.131, which is very small and also not significant.

Table 1. Paired sample T test results

Paired Differences	Mean	Std. Deviation	Std. Error Mean	Lower 95% CI	Upper 95% CI	t	df	One-Sided p	Two-Sided p
Audio - Video	-1.25	9.57	2.39	-6.35	3.85	-0.522	15	0.305	0.609

Table 2. Paired sample effect sizes

Pair	Standardizer	Cohen's d	95% Confidence Interval (Lower)	95% Confidence Interval (Upper)
Audio - Video	957.427	-0.131	-0.621	0.364
Hedges' correction	1.008.872	-0.124	-0.589	0.345

According to the results above, the hypothesis that using visual aids significantly improves students' listening comprehension was not supported by the results of this study.

b. Discussion

Although previous studies indicate that visual aids significantly enhance listening comprehension, this study's results show otherwise. However, the current study's findings are in line with some previous research that has shown mixed results regarding the impact of visual aids on listening comprehension. For example, Smith and Johnson (2024) indicated that visual aids do not always significantly enhance listening comprehension. Their study suggested that the effectiveness of visual aids may depend on the complexity of the material and the learners' proficiency level. For more complex materials, visual aids might add to the cognitive load, making it harder for learners to process information. Additionally, learners with higher proficiency might find visual aids less beneficial, as they already possess the necessary skills to understand the auditory information without additional support.

An additional finding of this study was that participants appeared to have low motivation, which might have influenced their performance. Motivation plays a crucial role in language learning, as it can affect the amount of effort learners are willing to put into understanding and retaining new information (Dörnyei, 2023). Highly motivated learners are more likely to engage deeply with the material, persist through challenges, and employ effective learning strategies, all of which contribute to better learning outcomes.

Several factors could have influenced the results of this study:

1. Learner Proficiency: The proficiency level of the participants could have played a role in how they utilized visual aids. Higher proficiency learners might benefit less from visual

aids compared to lower proficiency learners who need more contextual support (Lee & Lantolf, 2024). For instance, advanced learners might already possess effective listening strategies and sufficient linguistic knowledge to comprehend auditory information without additional visual input. In contrast, beginners might rely more heavily on visual aids to fill in gaps in their understanding.

2. Content Complexity: The complexity of the content might have affected comprehension. Participants may not have needed additional visual support if the audio and video materials were relatively simple (Zhang & Wang, 2023). When the content is straightforward, learners can easily grasp the information through auditory means alone. However, for more complex or abstract content, visual aids could provide crucial support by illustrating concepts and providing context that aids comprehension.
3. Cognitive Load: According to Sweller's (2021) cognitive load theory, adding visual aids can sometimes increase cognitive load, making it harder for learners to process information. This might explain the lack of significant improvement in listening comprehension with visual aids. Cognitive load theory posits that learning is most effective when the cognitive demands of a task are within the learner's capacity to process. If visual aids are not well-integrated or if they introduce extraneous information, they can overload the learner's cognitive resources, hindering rather than helping comprehension.
4. Participant Motivation: Low motivation among participants could have contributed to the lack of significant differences observed in this study. Motivated learners are more likely to engage deeply with the material, making better use of visual aids (Schmidt & Watanabe, 2023). When learners are not motivated, they might not fully attend to or engage with the learning materials, regardless of whether visual aids are present. Enhancing motivation could therefore be a crucial factor in realizing the potential benefits of visual aids.

5. CONCLUSION

The primary aim of this study was to determine if visual aids significantly enhance students' listening comprehension. The results revealed no significant difference between the audio-only and video conditions. Despite support from dual-coding theory and Mayer's cognitive theory of multimedia learning, which suggest that combining visual and verbal information improves retention and understanding, this study did not find significant benefits. Factors such as learner proficiency, content complexity, cognitive load, and participant motivation may have influenced these outcomes.

For suggestion, educators should focus on strategies to increase student motivation by fostering a supportive learning environment, setting clear goals, using engaging materials, and providing autonomy. Visual aids should be used appropriately based on learners' proficiency and the complexity of the content to ensure they complement rather

than complicate the auditory information. Professional development and workshops on the effective use of visual aids are also recommended, along with regularly collecting student feedback to refine teaching methods.

Future research should examine the impact of visual aids across varying proficiency levels and content complexities, explore different types of visual aids, and conduct longitudinal studies to assess their long-term effects on listening comprehension. Addressing these areas can improve the understanding and application of visual aids in language learning, enhancing listening comprehension and overall language proficiency.

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