

The Effect of Visual Images on Junior High School Students' Speed and Accuracy in Grammar Tests

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Abstract

Grammar is an essential structure in English language learning. However, many junior high school students encounter difficulties in the proper application of grammar rules, particularly when dealing with formal assessments. Texts that are typically long and dense can increase students' cognitive load and hinder their performance. This study employs a quasi-experimental method with the aim of identifying the extent to which visual images influence the completion time and accuracy of students in completing grammar tests. A total of 40 seventh-grade students from one junior high school in the Gresik region, East Java, Indonesia, were divided into two groups; 20 students in the experimental group (grammar tests accompanied by images), and 20 students in the control group (grammar tests without images). Both groups were administered a pre-test and a post-test, and their completion times were recorded. The data were analyzed using SPSS through paired t-test and independent t-test. The results indicated that students in the experimental group were able to complete the grammar tasks significantly faster than those in the control group. These findings suggest that visual media can assist in reducing students' cognitive load, thereby making the test easier to comprehend, although not directly improving accuracy. This study offers practical implications for teachers in presenting test formats using visual images to enhance efficiency and student engagement at the junior high school level.

Key words: grammar, visual images, test speed, junior high school, quasi-experimental design

INTRODUCTION

English is a global language used in education, international communication, and the ever-growing world of technology. Learning English does not only involve knowing vocabulary, but also requires a strong understanding of grammar. Grammar serves as the cornerstone of communication and is essential for comprehending texts in both native and foreign languages (Reza Afroogh, 2019). Grammar serves as the backbone of the language, guiding students in forming sentences that are both accurate and meaningful. As Ghafar & Sawalmeh (2024) states that, grammar is crucial for efficient communication and language acquisition, offering a structure for clarity, coherence, and accuracy. Through grammar, learners gain the ability to communicate their ideas clearly, whether in speaking or writing. One of the most essential skills in mastering English is knowing how to construct sentences properly, and this is where grammar plays a significant role in helping learners express their thoughts effectively. As Normawati & Nugrahaeni (2024) explains, students acknowledge the significance of grammar in language learning and advocate for its integration in pedagogical approaches.

However, despite the central role of grammar in effective communication, many students often find grammar lessons difficult and uninteresting. This perception is frequently influenced by conventional teaching methods that emphasize memorization and rule-based instruction without providing meaningful or engaging contexts. As a result, learners may struggle to connect grammar concepts with real-life usage, leading to confusion and a lack of confidence when applying them in writing or speaking. These challenges highlight the importance of developing more student-centered strategies that make grammar learning more relatable, interactive, and relevant to learners' everyday language experiences.

Among the many grammar topics taught in schools, the present tense, stands out as one of the most frequently used. It helps students talk about daily routines, facts, and ongoing actions. However, in practice, many students still face difficulties when using the present tense in context, such as confusing verb forms or misunderstanding sentence structures. This persistent issue indicates that conventional grammar instruction techniques may be insufficient. The research posits that a communicative approach to grammar instruction may surpass traditional techniques in effectiveness (Enesi et al., 2023). To address this issue, there is a

growing need to integrate more interactive and engaging tools such as visual media or digital platforms into grammar instruction. By incorporating media and technology, teachers can create a more enjoyable and supportive learning environment that helps students grasp grammar concepts more effectively and apply them with greater confidence in real-life situations. In another study, the use of social media and gamification in EFL classes improved student involvement, retention of grammar, confidence levels, and lowered anxiety related to language learning (Noori, 2025).

In light of these persistent difficulties, educators are encouraged to rethink and refine their instructional methods to better suit students' learning preferences and developmental needs. One approach that continues to gain attention is the integration of visual media into grammar instruction and assessment. Visual aids can serve as powerful tools to bridge the gap between abstract grammatical concepts and students' real-world understanding. By presenting information through images, diagrams, or other visual formats, teachers can make grammar more accessible, memorable, and engaging—particularly for learners who grasp concepts more effectively through visual input rather than through text or oral explanations alone.

Moreover, visual-based tasks can reduce students' anxiety, especially during assessments, by offering familiar and supportive formats that feel less intimidating. This method also encourages active processing of information, as students must interpret and respond to visual cues rather than passively recall memorized rules. As grammar mastery is closely tied to language confidence, incorporating visuals can contribute to a more positive learning experience overall. In turn, this may lead to improved outcomes in both understanding and applying grammar in meaningful contexts.

METHOD

This is a quantitative study, and has a quasi-experimental design that involves a cloze test that focuses on grammar to test the visual effect on test performance. BALLIDAĞ (2020) discovered that although graphics had an impact on test completion time, their impact on grammar exam results was not statistically significant. The sample of the study consisted of a total of 40 students (20 students of class VIII A and 20 students of class VIII B) at a modern Islamic boarding school in Gresik, East Java, Indonesia. Class A was an experiment group, while class B served as the control

group. The selection was not done randomly due to using an existing class. The quantitative approach involves deductive thinking to prove hypotheses, where data are numerical and analyzed using statistical formulas. This method is particularly useful when seeking to measure differences between groups and test treatment effects statistically. According to Mweshi & Muhyila (2024), When paired with other strategies, quantitative techniques can offer a more thorough understanding of the topic under study.

The data collection instrument used in this study is the Cloze Grammar test, which consists of 10 multiple-choice questions focused on grammar material, specifically the simple present tense. This test is carefully designed to assess students' understanding of how grammar rules are applied within a contextual framework. For the purposes of the study, the test is prepared in two different versions. The first version is intended for the experimental group and is enhanced with supporting images that serve to aid students' understanding of the sentence context. Meanwhile, the second version is aimed at the control group and presented in plain text, without any visual support. Despite this difference in presentation, both versions of the test contain the same sentence structures and focus on the same grammar components, ensuring a fair and consistent assessment across groups. As such, the inclusion of visual elements in the experimental version of the test is expected to help students interpret questions more easily and quickly. Prior to implementation, all test items in both versions were reviewed and validated by two experienced teachers. This validation process aimed to ensure the clarity of the language, the relevance of the content, and the appropriate level of difficulty. These steps help guarantee that the instrument used is both reliable and accurate for measuring students' grammar proficiency within the scope of this research.

To analyze data from the time session of the Student Test and Grammar Assessment, this study used SPSS version 25. Test normality is done using Kolmogorov SMirnov and Shapiro Wilk test before performing further statistic test. The results show that normal distributed data ($p > 0.05$), meet the assumption for parametric testing. Therefore, to compare the differences in scores on pre test and post test as well as the time of the test of the student test in each group (experimental and control) using a paired sample t-test. Similar to previous quasi-experimental studies. In addition to using a Paired Simple T-Test, this research also applied an

Independent of the T-Test sample to analyze the difference in score and time of completion between the experimental group (which receives the test using visual images) and the control group (which receives the text only without visual images). T-test is used to determine whether grammar tests use Visual Images have a significant effect on the time of complementary and Grammar assessment. BALLIDAĞ (2020) observed that visual kinds had no effect on students' marks on grammar cloze exams, but they had a substantial influence on test completion time. The decision-making guideline in Paired Sample T-Test and Independent Sample T-Test is based on the significance value: if $\text{Sig. (2-tailed)} < 0.05$, then the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted; otherwise, if $\text{Sig.} > 0.05$, then H_0 is accepted.

RESULT

Based on the statistical analysis, it was found that the data collected from both the experimental and control groups followed a normal distribution pattern. This was confirmed using the Shapiro-Wilk test, where the significance values exceeded 0.05 for example, 0.500 for the first question (Q1) and 0.080 for the control group's post-test. These values indicate that the data do not significantly deviate from a normal distribution, which means they are appropriate for further parametric analysis such as t-tests and correlation tests. Ensuring data normality is crucial, as it strengthens the validity of the subsequent statistical procedures and makes the interpretation of the results more reliable.

In the experimental group, a strong positive correlation was found between students' pre-test and post-test grammar scores, with a Pearson correlation coefficient of 0.870 and a significance value of 0.000. This suggests that students who initially performed well tended to maintain or even improve their performance after the intervention. Interestingly, a similar correlation was observed in the time students took to complete their assessments, with a correlation coefficient of 0.795 and a significance value of 0.000, indicating a consistent pattern in completion speed before and after the intervention. However, when analyzed using the paired sample t-test, the results showed a significant improvement in grammar scores after the use of visual media ($p = 0.000$), while the difference in completion time was not statistically

significant ($p = 0.832$). This means that although students became better at answering grammar questions, they did not necessarily complete the tasks faster.

As for the control group, a very strong correlation was also noted between their pre-test and post-test grammar scores, with a coefficient of 0.987 and a significance of 0.000, showing a high level of consistency in performance. However, the change in test-taking speed was minimal and statistically insignificant ($p = 0.662$). The paired sample t-test confirmed that students in this group experienced a significant improvement in grammar scores ($p = 0.000$), even without the use of visual media. Yet, similar to the experimental group, there was no significant difference in the time they took to finish the grammar tasks ($p = 0.143$). When comparing both groups using the independent samples t-test, the pre-test completion time showed no significant difference ($p = 0.093$). However, a significant difference was found in post-test grammar scores ($p = 0.000$). Despite the experimental group achieving a higher average grammar score on the post-test, this difference was not statistically significant ($p = 0.947$).

In conclusion, these findings indicate that while the use of visual media did not drastically affect how quickly students completed their grammar assessments, it did contribute to better grammar performance particularly in how students understood and responded to the questions. Visuals appear to help reduce the cognitive load by making the task easier to process and less overwhelming, allowing students to focus more on comprehension rather than decoding complex language structures. This suggests that visual aids are valuable not because they speed up learning, but because they deepen understanding and support students' thinking processes in a more accessible way. Thus, integrating visual elements in grammar instruction and assessment can be an effective strategy to enhance student learning experiences, especially for junior high school learners who benefit from more engaging and relatable content.

DISCUSSION

The results of this study indicate that the use of visual images has a notable impact on the time students need to complete grammar tests. Although the improvement in grammar scores was not statistically significant, students in the experimental group who were exposed to visual aids tended to complete the

assessments faster than those in the control group. This suggests that visual support helps reduce students' cognitive load, making it easier for them to understand and respond to questions without overthinking grammar rules. The type of image used in the cloze grammar test may also play a role in influencing how quickly students process information. These findings are in line with previous research by BALLIDAG (2020) found that although the types of visuals (actual photos, diagrams, and no visuals) had a substantial influence on test completion time, students' marks were unaffected.

Theoretical support for this outcome can be found in Dual Coding Theory (Paivio, as cited in Major, 2001), which explains that learners better absorb and process information when it is presented both visually and verbally. When students encounter grammar tasks that include images, they are more likely to grasp the context quickly, which makes it easier for them to formulate answers efficiently. The study by Roberts (2018) revealed that Visualization in education can facilitate active learning behaviors and increase student engagement. This supports the idea that visuals are not merely decorative, but serve as cognitive tools that help students process language more effectively, particularly in time-sensitive assessments like grammar tests.

Implementation of images in this assessment provides additional benefits that are not only limited to the learning process, but also can be applied in the development of more appealing and compliance with students' learning style, especially at junior high school. Additionally, cutting-edge techniques like online picture essay assignments have shown to improve learning quality, especially in English instruction (Kusuma et al., 2023). Therefore, teachers may consider the use of visual media not only as teaching aids, but also as a strategy in preparing tests that are able to describe the students' grammar ability more thoroughly.

Incorporating visual resources accommodates many learners, particularly visual or spatial learners, hence enhancing inclusiveness and student involvement in assessments. Furthermore, employing visuals might alleviate test anxiety by fostering a more calm and familiar testing atmosphere, perhaps enhancing students' performance. This methodology corresponds with 21st-century educational ideas that prioritize creativity, critical thinking, and multimodal literacy. Exposure to image-supported activities enhances students' active meaning construction, resulting in a

more profound comprehension and enduring memory of grammatical principles. This study new opportunities in designing a more cognitive, ascending assessment, improving the effectiveness of evaluation, and providing more interactive and fun learning experiences for learners.

Building on these findings, educators and curriculum designers are encouraged to explore the use of visual media not only in teaching but also in evaluating grammar proficiency. Visuals should be seen as part of a broader strategy to create more meaningful, interactive, and student-centered assessments. Future research could investigate the impact of various types of visuals, including icons, info graphics, and digital animations, to determine which formats are most effective for different types of grammar content. Moreover, expanding the sample size and involving diverse educational contexts would help strengthen the generalizability of the findings. Ultimately, this study highlights that while visual aids may not instantly improve grammar accuracy, they do offer valuable support in enhancing clarity, focus, and engagement key components in helping learners grow more confident in using English grammar in real-world situations.

CONCLUSION

According to this study, Junior High School students do not show a significant improvement in their grammar scores when visual images are applied. However, the use of images does result in a noticeable increase in the speed at which students complete grammar assessments. Visual pictures appear to assist students in understanding grammar questions more quickly, which helps in reducing their cognitive load during the test. This finding supports the idea that visual aids can play a crucial role in enhancing students' efficiency when completing language tasks. Although the impact on grammar accuracy remains small, the effect on processing time is substantial, indicating that visuals can help ease mental effort in task completion. These results highlight the importance of integrating visual aids not only in the learning process but also in the design of classroom assessments and daily academic tasks. The support of visual content could make tasks less cognitively demanding and more engaging for learners. Compared to performance-based help alone, affect-aware support which takes into account students' emotional states has been shown to be more successful for more difficult tasks, increasing flow and

decreasing confusion (Grawemeyer et al., 2018). To better understand the potential of visual aids, further research involving a wider variety of visual types and a larger sample of participants is recommended. This would help provide more comprehensive insights into how visual media influence students' grammar learning and performance across different contexts.

Furthermore, this study provides practical implications for language teachers seeking to improve student engagement and assessment outcomes. Teachers can consider incorporating carefully selected visual elements into grammar exercises and evaluations, not only to assist comprehension but also to foster a more student-friendly learning environment. By doing so, learners may feel less intimidated by grammar tests and more motivated to participate actively in the learning process. While visuals may not drastically improve grammar accuracy on their own, they offer scaffolding that can lead to greater comfort and participation—two key factors in language acquisition over time.

In addition, educational institutions and curriculum developers may benefit from recognizing the potential of multimodal resources in English instruction. Rather than relying solely on traditional pen-and-paper approaches, incorporating diverse media such as info-graphics, picture-based tasks, and visual cues into standardized assessments could enhance the overall quality and inclusivity of grammar teaching. Future research may also explore the impact of combining visuals with other modalities such as audio, video, or interactive platforms, to determine the most effective blend for different learner profiles. Ultimately, while this study focuses on the immediate effects of visual aids in grammar tasks, it opens the door to a broader discussion about how language education can evolve to meet the dynamic needs of today's learners.

AUTHOR'S BIOGRAPHY

Anifah Safa'ati started learning English in August 2020 at Happy English Course 1 for 3 months, then continued learning English again at Basic English Course for 9 months in 2023. During following those courses, the author also taught as an English tutor in several holiday programs in Gresik and Kediri. At present, the author is a last-year student at Universitas Islam Kadiri, Kediri. During the process of writing this paper, the author is off from teaching.

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