

Improving Students' Contextual Vocabulary Mastery Through Wordwall.net with Teacher's Guidance

¹Lulus Uvi Cahyaningtyas, ¹*Anita Fatimatul L, ¹Henri Fatkurochman

¹English Education Study Program, Faculty of Teacher Training and Education, Universitas Muhammadiyah Jember. Jalan Karimata No. 49, Kec. Sumbersari, Jember, Indonesia

*Corresponding Author e-mail: anitafatimatul@unmuhjember.ac.id

Received: December 2025; Revised: February 2026; Accepted: March 2026; Published: June 2026

Abstract

The objective of this study is to enhance students' comprehension of contextual vocabulary in learning procedural texts through the implementation of Wordwall.net in conjunction with teacher guidance. Contextual vocabulary mastery imperative for comprehending procedural texts, as students must be able to interpret action verbs, tools, and sequential instructions that directly impact their academic performance. Preliminary observations suggest that some students encounter challenges in interpreting the meaning of words within the context of tasks, leading to reliance on their peers for clarification. This study employed a quantitative approach with a Classroom Action Research (CAR) design, conducted in two cycles, each comprising planning, action, observation, and reflection. The instrument used was an image-based vocabulary test developed directly by the researcher through the quiz feature on Wordwall.net. results showed improvement in students' vocabulary mastery and learning independence from the first to the second cycle. . This finding contributes to the extant literature by demonstrating that the integration of interactive digital visual media with structured teacher guidance can enhance contextual vocabulary learning in technology-supported classroom. Practically, the integration of Wordwall.net with guided visual vocabulary tasks has been demonstrated to be an effective teaching strategy for the instruction of procedural texts.

Keywords: Contextual vocabulary; Teacher guidance; Procedure text; Vocabulary mastery; Wordwall.net

How to Cite: Cahyaningtyas, L.U., Fatimatul, A.L., & Fatkurochman, H. (2026). Improving Students' Contextual Vocabulary Mastery Through Wordwall.net with Teacher's Guidance. *Journal of Language and Literature Studies*, 6(2), 909-919. doi: <https://doi.org/10.36312/jolls.v6i2.3966>



<https://doi.org/10.36312/jolls.v6i2.3966>

Copyright© 2026, Cahyaningtyas et al.

This is an open-access article under the [CC-BY-SA](#) License.



INTRODUCTION

Numerous high-quality meta-analyses demonstrate that the integration of technology into education consistently yields a moderate positive effect on learning outcomes (Wu, 2024). According to (Nurmatova, 2024) English teachers are committed to integrating media technology into English language teaching (ELT) classes, and this approach aims to enhance student motivation, integrate language skills, and foster an independent learning environment. In the contemporary educational landscape, numerous media technologies have emerged to assist English teachers in addressing the diverse needs of students in the classroom. Examples include Wordwall.net, Kahoot, Quiziz, and others. Various types of media can be used to teach vocabulary, and Wordwall.net is a valuable tool that can be used in this regard (Okta Darma et al., 2023).

Based on initial classroom observations at senior high school in Jember, class X students showed low attention and engagement when vocabulary was taught mainly through traditional lecture methods. This phenomenon contributes to a decline in student engagement and suboptimal outcomes in vocabulary acquisition. A multitude of studies have demonstrated that learners who employ visual contexts in their vocabulary acquisition experience more significant gains in vocabulary knowledge compared to those

who engage with written text. When students are taught vocabulary with visual context support, they remember more words than when the vocabulary is taught separately (Teng, 2023). To address and prevent low student participation and vocabulary learning outcomes, an approach is needed that not only presents vocabulary visually and contextually but also increases student participation through interactive activities accompanied by the teacher. This challenge is further compounded in procedural text learning, where students must not only discern the meaning of words individually but also comprehend vocabulary within the sequence of steps and the context of actions. In the absence of visual context support and teacher guidance, students frequently encounter challenges in associating vocabulary with its intended function and meaning in procedural text.

Wordwall.net is a digital media platform that can address these needs. Wordwall is a new tool that allows teachers to incorporate media into their instruction to enhance student learning (Swari, 2023). Wordwall.net is a fun and educational platform that offers games to help develop vocabulary, which can be played both individually and collaboratively (Çil, 2021). These games include picture matching, information matching, quizzes, wheels, fortunes, puzzles, and other similar activities. The games available on this website are created by teachers using ready-made templates and supplemented with their own content, including words and pictures. These games may also be user-created content, such as games developed by other teachers (Swari, 2023). Wordwall.net offers a variety of visual features, including images directly linked to answer choices, that help students understand vocabulary in a more concrete context (Irdiyansyah & Gusnadi, 2024). Additionally, the interactive quiz mode promotes student engagement. Interactive features such as games and quizzes in wordwall.net have successfully increased learner motivation and shown greater interest in the learning process (Yuliana Ichسانی et al., 2023). However, previous studies primarily used Wordwall.net as a standalone digital game or vocabulary practice tool, without integrating it into a specific text context or combining it with direct teacher guidance during learning activities (Hayati & Marhum, 2025). Consequently, the potential of this approach in supporting contextual vocabulary learning in procedural text teaching remains to be fully investigated.

Previous studies have examined the effectiveness of using digital media and game based platforms, such as Wordwall.net, to improve vocabulary acquisition and student engagement in language classes. Several studies report that Wordwall activities and digital games improve vocabulary acquisition, motivation, and interactive learning experiences when learning English as a foreign language (EFL) (Diah Anggreini et al., 2023) (Abidah et al., 2023). One study used Wordwall.net as an interactive digital learning platform to teach vocabulary to seventh grade students using internet-based game templates, such as matching, quizzes, and word games, on thematic topics (e.g., time, family members, and verbs) (Haviza et al., 2024). Another study used wordwall.net as an interactive web based learning medium developed with the ADDIE model through educational activities such as quizzes, matching, pairs, anagrams, scrambled words, word search and grouping on the material of introducing body part names, functions, and care methods in Indonesian (Rusmiyanti & Hermanto, 2025). However, few studies have examined the integration of Wordwall-based visual vocabulary learning with structured teacher guidance in teaching procedural texts. Therefore, this study addresses this gap by investigating how wordwall-based contextual vocabulary tasks combined with teacher guidance can improve students' mastery of vocabulary in procedural text learning.

This wordwall.net activity is insufficient for students to complete alone, teacher assistance is required to help students understand word meanings. According to (Erni Ratna Dewi et al., 2024) effective teacher professional development is essential for updating teachers' knowledge and improving their ability to guide and support students

throughout the learning process. Teachers who actively accompany students, providing timely feedback and guidance, have been shown to result in higher levels of understanding and engagement (Ghazi Khan Ghulam Muftaba Yasir et al., 2023). Teacher presence is crucial in tailoring teaching to meet students' diverse needs and learning styles, thereby improving learning outcomes (Çakar Özkan, 2022). Although teacher guidance is widely recognized as important in the learning process, few studies have looked into how it interacts directly with digital game-based media like Wordwall.net to support contextual vocabulary acquisition.

The implementation of a contextual approach has been shown to enhance students' proficiency in English vocabulary usage (Ghonivita et al., 2021). This approach also fosters greater student engagement and comprehension of vocabulary in authentic learning environments (Gulbegim, 2023). Teachers have a significant role in the learning process as motivators, facilitators, inspirers, and innovators (Wulandari & Mustika, 2023). With dedicated support, educators can facilitate a deeper comprehension of the subject matter, enhance student motivation, and offer specialized guidance to those who require additional support (Mokoagow, 2021). Previous studies have primarily utilized Wordwall.net as an individual vocabulary game or as text-based digital practice, excluding integration into procedural text learning or combination with active teacher guidance. However, there is currently limited evidence to support this claim. Addressing this gap, the present study integrates image-based Wordwall.net quizzes into procedural text learning with active teacher guidance. The objective of this study is to enhance the contextual vocabulary proficiency of grade X students by leveraging the Wordwall.net platform within the framework of procedural text instruction. As a result, the research question for this study is: How does incorporating Wordwall.net based quizzes into procedural text learning, along with teacher guidance, improve students' contextual vocabulary mastery?

METHOD

Research Design

This research is a Classroom Action Research (CAR), the objective of which is to enhance students' proficiency in English vocabulary by leveraging the Wordwall.net media platform in conjunction with the learning procedure text. The author selected CAR as a suitable approach to address learning problems that arise in the classroom, characterized by its direct and systematic nature. Classroom Action Research (CAR) was selected over experimental or quasi-experimental designs because the primary objective of this study was not to compare treatments, but rather to enhance existing teaching practice within the researcher's own classroom. The cyclical nature of CAR enables researchers to identify learning problems, implement targeted teaching actions, observe student response, and refine teaching strategies in the subsequent cycle. This iterative process enables ongoing enhancement in vocabulary instruction, leveraging authentic classroom feedback. As delineated by (Ary & Jacobs, 2019) CAR is implemented by educators within their instructional settings with the objective of enhancing educational methodologies. This classroom action research design is modeled after the Kemmis and McTaggart model (Siregar et al., 2025) which includes four stages in each cycle: planning, acting, observing, and reflecting. This research was conducted in two cycles, each consisting of one meeting. The second cycle was conducted to correct and improve the results of the first cycle, according to the principle of reflection in class action research. The data obtained from the first cycle, including student test result and classroom observations, were analyzed to identify any remaining difficulties, such as limited contextual understanding and dependence on classmates. In light of this analysis, learning support and guidance

strategies were enhanced in the second cycle to foster student autonomy and contextual vocabulary comprehension.

Research Site and Participants

The subjects in this study were class X students in one of the cities of Jember, totaling 27 students, and following English subjects in the even semester of the 2024/2025 school year. The determination of the subject was carried out through a purposive sampling technique, which involves choosing the class where the researcher teaches as well as the location where the learning problems are found. This technique is according to (Ary & Jacobs, 2019) which states that purposive sampling is carried out intentionally by data collectors based on certain characteristics that are relevant to the research objectives. Students in the class where the researcher teaches are between 15-17 years old and have diverse backgrounds of English language skills, but most of them still have difficulty in understanding English, especially in the context of vocabulary. In the classroom, initial observations suggest that many students have limited vocabulary knowledge and experience difficulty understanding the meaning of words in the context of procedural texts. They tend to rely on memorization rather than contextual understanding, which affects their level of engagement during vocabulary learning activities. Therefore, this class was chosen as the research subject because it is in accordance with class action research, which is to improve the learning process that takes place directly in the classroom where the researcher teaches.

Instrument and Data Collection

The main instrument in this study was a set of vocabulary multiple-choice questions presented with images. All questions were independently developed by the researcher using the quiz feature on Wordwall.net. These questions are designed to assess students' vocabulary mastery related to procedural text, both in terms of word recognition and contextual understanding. Each item represents key vocabulary frequently found in procedural texts, such as action verbs, tools, and materials. Images are selected to visually represent the procedural context, enabling students to understand the meaning of words through visual cues and text. To ensure content validity, the instrument was first reviewed by the English subject teacher and the supervisor lecturer to match the learning indicators and the students' ability level. This research was conducted in two cycles. Each cycle commenced with a pre-test to ascertain students' initial mastery, followed by action in the form of vocabulary learning using Wordwall.net in both classical and interactive modes. Individual pre-tests were administered before each cycle's learning intervention to assess students' initial vocabulary mastery. During the intervention phase, students completed Wordwall.net quizzes in a traditional classroom setting, guided by a teacher. Post-tests were given at the end of each cycle in a similar format to assess learning improvement following the intervention. The cycle concluded with a post-test to assess the improvement of learning outcomes. During the implementation of the Action, the researcher provides oral guidance to students, helping them understand the meaning of words based on pictures and procedural contexts. Activities were conducted in the classroom in groups with guided discussions so that students could learn actively and meaningfully.

Research Procedure

The research procedure involved vocabulary learning activities based on procedural texts, integrated with Wordwall.net quizzes, and guided by the teacher. First, the teacher helped the students understand the content of the procedural text and identify key vocabulary related to the steps (e.g., bread, lettuce, spread, slice, and press). Once the students comprehended the context of the text, the teacher displayed the Wordwall.net quiz via a projector and explained the rules of the game. The students proceeded to respond to the question in class, with the teacher providing guidance as needed. For instance, the teacher

posed the following question: “look at the picture. Is it lettuce, onion, or tomato?” the students respond verbally or by pointing to the choice. In this activity, students do not work on the quiz independently. Instead, they receive direct guidance from the teacher. The teacher clarifies the meaning of words based on the pictures and the context of the procedural text that has been learned. This procedure is applied in each cycle before the post test is administered to measure the improvement in students' vocabulary mastery.

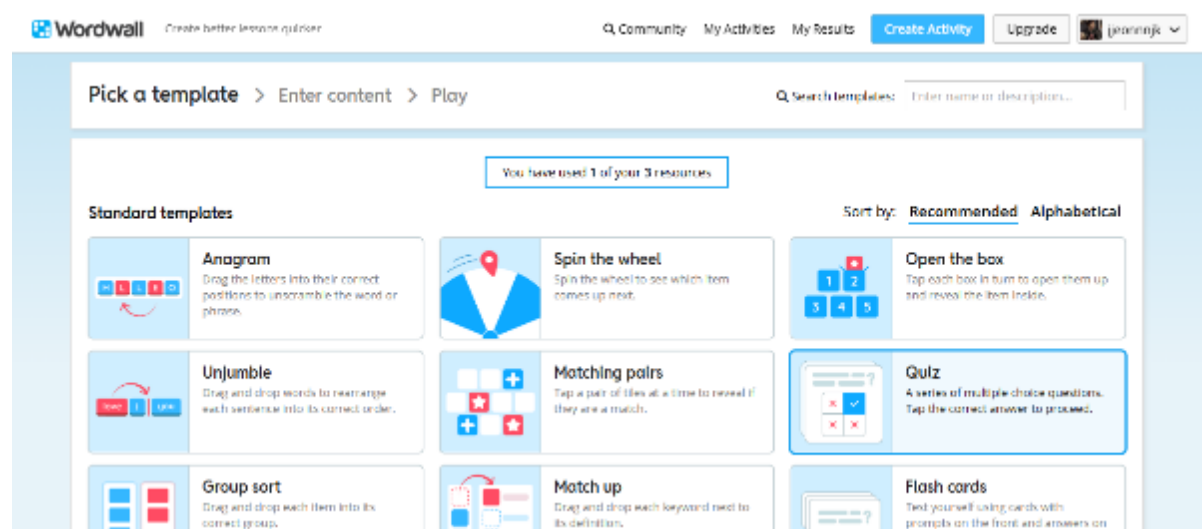


Figure 1. Several game features available on the Wordwall.net platform.

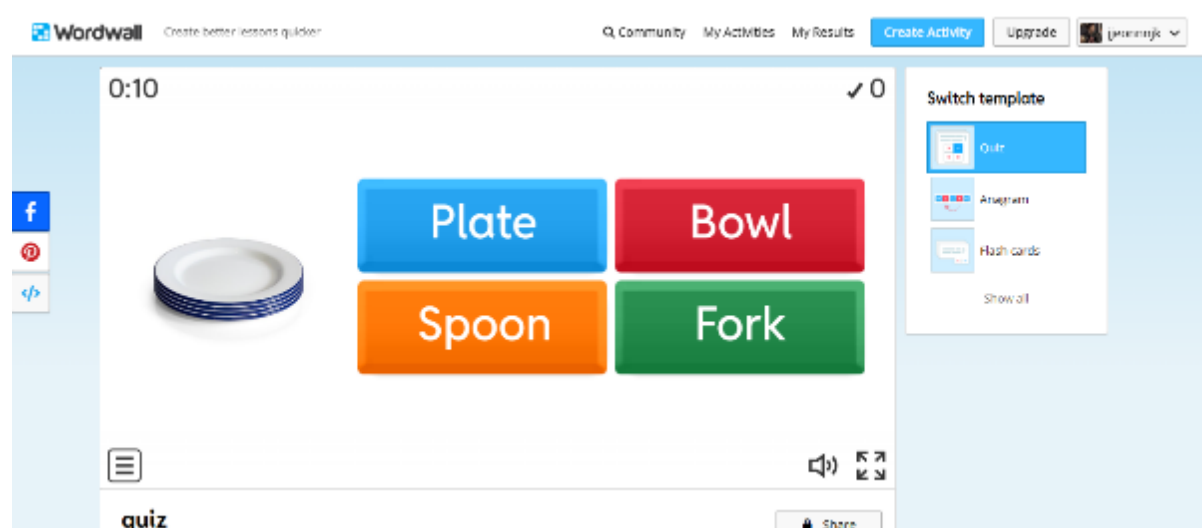


Figure 2. The quiz feature in Wordwall.net used for the vocabulary activity in this study

Data Analysis

The data in this study were analyzed quantitatively using descriptive statistics. The analysis was conducted by calculating the mean, the percentage of minimum competency achievement, and comparing the pre-test and post-test scores in each cycle. Although the pre-test results showed that some students had almost achieved scores above the KKM, Wordwall.net, with teacher assistance still had a positive impact, as seen from the increase in the mean score on the post-test, even though it was relatively small. According to (Ary & Jacobs, 2019), a quantitative approach allows researchers to explain changes in learning outcomes objectively through numbers, so that the data obtained remains meaningful even if the improvement is not significant. This analysis technique aligns with the objectives of

classroom action research, which is to assess the impact of actions taken on enhancing or sustaining the quality of learning. The results of this comparison, including average scores, score distribution, and percentage increase between the initial and final tests throughout of wordwall.net with teacher guidance resulted in an increase in contextual vocabulary mastery, as stated in the research objectives.

RESULTS AND DISCUSSION

Results

This section presents the results of data analysis obtained from students' pre-test and post-test scores. The data was analyzed using descriptive statistics to determine the average, minimum, maximum, and percentage increase after the implementation of Wordwall.net with teacher guidance.

Table 1. Descriptive Statistics of Students' Vocabulary Scores in Pre-Test and Post-test

Statistic	Pre-test	Post-test
Mean	73.5	90.31
Minimum	62	85
Maximum	82	96
Standard Deviation	6.16	3.54
Improvement (%)	-	22.87%

Table 1 presents the descriptive statistics of students' vocabulary test scores in the pre-test and post-test after the implementation of wordwall.net with teacher guidance. The mean pre-test score was 73.5, which increased to 90.31 in the post test, indicating an improvement of 22.87%. the minimum score improved from 62 to 85, and the maximum score increased from 82 to 96, it is recommended that progress be observed among both lower- and higher- performing students. The standard deviation decreased from 6.18 to 3.54, indicating that the scores became more consistent after intervention. A comprehensive analysis of the descriptive data revealed a substantial enhancement in the vocabulary scores of the student following the implementation of the learning intervention.

In comparison to the first cycle, students in the second cycle demonstrated increased autonomy, improved comprehension of contextual vocabulary, and elevated levels of active engagement. In the first cycle, some students still relied on their peers and had difficulty interpreting the meaning of words in the context of procedural texts. After a review of the first cycle, it was determined that the second cycle would provide more structured teacher guidance and clearer contextual explanation. As a result, students demonstrated increased confidence and proficiency in completing vocabulary tests with minimal assistance. Classroom interactions became more effective and engaging, demonstrating increased learning autonomy during vocabulary learning activities. The study findings demonstrate that the implementation of wordwall.net with teacher guidance has a positive impact on improving students' vocabulary mastery. This improvement is evident not only from higher average scores, but also from students' learning behavior, as they became more independent, active, and engaged during vocabulary activities. . These findings show that the integration of interactive media and the role of teachers in guiding students has an important contribution to the success of contextual vocabulary learning in procedural text instruction.

Discussion

The scientific findings from this study demonstrate that the integration of image-based wordwall.net with teacher guidance significantly students' contextual vocabulary mastery. In addition to increasing average scores, this intervention also made students' learning outcomes more consistent, as seen from the decrease in score variation on the

post-test. A key factor contributing to this enhancement was the implementation of the wordwall quizzes following the students' study of the procedure text. This sequencing allowed students to encounter vocabulary that was already embedded in a familiar procedural context. As a result, visual cues in Wordwall.net do not function as separate images; rather, they represent actions, tools, or steps from procedural text, allowing students to connect word forms with meaningful procedural concepts. The interactive quiz format further reinforces this mapping process by requiring repeated recognition and selection, which strengthens retention and contextual understanding. Additionally, ongoing teacher guidance ensures that students who struggle with instructions or contextual meaning receive immediate clarifications. The combination of visual representation, procedural context, interactive engagement, and teacher support explains both the increase in average scores and the narrowing of score dispersion observed in Table 1.

This study's findings align with those of (Diah Anggreini et al., 2023), who found that using Wordwall.net in learning can help students improve their vocabulary mastery. The results of this study demonstrate a clear correlation between the increase in students' scores from the first cycle to the second cycle and the increase in student engagement during the learning process. However, it should be noted that this study has several important differences. First, the previous study employed Wordwall.net in general, whereas this study used image-based quiz elements to help students learn word meanings through visual support. Second, this study delivered vocabulary in the context of a procedure text, which allowed students to evaluate words more contextually. Third, this study emphasized the role of teacher guidance during activities, such as offering direction, clarification, and direct feedback to students. Furthermore, this study's data analysis includes descriptive statistics (mean, minimum, maximum, and standard deviation), which provide a more quantitative picture of improvement. These differences suggest that our study adds value, particularly in terms of visual, text context, and teacher guidance.

Furthermore, the results of this study are consistent with those of a study by (Abidah et al., 2023) that evaluated the effectiveness of digital game-based learning in enhancing the vocabulary mastery of vocational students. In a similar vein to this study, they found that the use of game-based media, including Wordwall.net, can improve student learning outcomes and make learning more interesting. However, this study differs from Abidah et al.'s in that it utilised a Classroom Action Research (CAR) approach, focusing on enhancing the learning process through two cycles, whereas Abidah et al.'s study employed a quasi-experimental design and compared experimental and control groups. Furthermore, Abidah et al.'s study assessed the effectiveness of digital games without emphasising the role of teacher assistance, whereas this study shows that the increase in scores and consistency in learning outcomes was influenced by both Wordwall.net media and direct teacher guidance during activities. This study provides an additional perspective that digital media will be more effective when combined with active teacher guidance, especially in the context of contextual image-based vocabulary mastery.

This study lends further support to the findings of (Sasse et al., 2025), which confirms that the quality of guidance, both planned and spontaneous, can improve student focus and understanding during the learning process. While both emphasize the significance of the teacher's role, the context of this study differs. Sasse et al. examined teacher guidance in science learning through an experimental approach that compared structured inquiry and guided inquiry patterns. This study emphasises teacher guidance in the context of language learning, specifically vocabulary mastery improvement through the image quiz-based Wordwall.net media in Classroom Action Research (CAR) design. These differences in context and design demonstrate that the effectiveness of teacher guidance is not limited to certain subjects but is also relevant and significant in digital media-based language learning.

The findings of this study align with those of (Olena Kholodniak, 2024) study, which confirms that the use of context, whether visual, narrative, or cultural, can enhance vocabulary comprehension and retention. The study's findings indicate that participants exposed to visual and narrative contexts demonstrated an enhancement in their real-life vocabulary application skills. These results align with the findings of this study, which demonstrated that the use of images on Wordwall.net facilitated a more meaningful understanding of words among students, as opposed to merely memorizing them. The key distinction lies in the emphasis placed on specific areas and the methodological approach employed: Kholodiyak's review of the context encompassed a wide range of sources and cultural backgrounds. This study placed particular emphasis on simple visual context in procedure texts and integrated it with teacher guidance through CAR. While the two studies differ in scope, they both emphasize the efficacy of context-based learning in enhancing vocabulary comprehension and fostering students' confidence in applying words to real-life situations.

The study's findings align with the principles of multimedia learning (Makransky & Mayer, 2022), which states that the incorporation of visual media and interactive activities can enhance students' comprehension and long-term memory. In this study, the use of Wordwall.net with image-based quizzes provided similar visual support, helping students to understand the meaning of vocabulary more quickly and accurately. These results demonstrate a commonality in the visual elements play an important role in strengthening the comprehension process. However, this study is distinct from research in multimedia learning, which is more general in scope and focuses on information processing theory. This study emphasises practical application through a specific digital platform and is supported by direct teacher guidance in the context of vocabulary learning. Therefore, the results of this study demonstrate that multimedia learning theory is both supported and applicable in real classroom settings.

These research findings can also be explained through the perspective of the Dual Coding theory proposed by Clark & Paivio, which emphasizes that student understanding improves when information is presented through a combination of visual and verbal representations. Studies conducted thus far on the dual coding principle have demonstrated that integrating images and text can enhance information processing. This is due to the fact that the material is processed through two cognitive channels simultaneously (Li et al., 2022). The results of this study demonstrate a comparable trend, indicating that the implementation of image-based Wordwall.net facilitates students' association of word forms with visual representations, consequently enhancing vocabulary retention and mastery. However, this study expands the application of Dual Coding by incorporating teacher guidance in game-based activities and the classroom Action Research (CAR) context. This provides an overview that visual multimedia becomes more effective when accompanied by direct guidance during learning.

In addition to improving scores, the observation also showed positive changes in student engagement and learning behavior. In the first cycle, some students continued to rely on their friends, lacked confidence, and struggled to understand the meaning of vocabulary in procedural text. However, in the second cycle, students became more independent, active in answering questions, and capable of understanding the meaning of words without much assistance from the teacher. These changes were influenced by the use of picture quizzes, which made learning activities more engaging, and guidance from teachers who provided direction when students encountered difficulties. These findings suggest that integrating digital game-based learning can increase student participation while strengthening their understanding of the material. Therefore, the observation data support the quantitative results that the use of Wordwall.net with teacher guidance has a positive impact on students' vocabulary mastery and learning behavior.

The present study corroborates the hypothesis that the incorporation of Wordwall.net digital media with teacher guidance is an effective strategy for enhancing students' vocabulary mastery. The primary contribution of this study is the implementation of game-based media in the context of vocabulary learning based on procedural text and direct teacher guidance. This provides a concrete example of how technology and the role of teachers can complement each other. These findings underscore that learning technology does not replace the role of teachers; rather, it strengthens the process of facilitating and understanding students. Therefore, this study offers practical guidance for educators in maximizing the use of digital media to support more meaningful learning. These findings also suggest that the implementation of contextual vocabulary instruction, augmented by interactive digital media and teacher guidance, may be applicable to other language skills and subject areas that necessitate terminology learning. Such subject areas may include scientific procedures or technical instructions. Future studies may look into how different types of teacher guidance (such as verbal prompts, feedback timing, or scaffolding levels) interact with digital media features to improve vocabulary learning in technology-enhanced classrooms.

CONCLUSION

The present study demonstrates the efficacy of integrating image-based activities from Wordwall.net in conjunction with teacher guidance in enhancing students' contextual vocabulary mastery in procedural text learning. Interactive visual media has been demonstrated to facilitate meaningful connections between words and meanings, while teacher guidance has been shown to promote focused engagement and support the development of independent learning. These findings underscore the broader implication that technology-supported vocabulary instruction is most effective when digital tools are used with pedagogical guidance rather than independently.

However, the study is not without its limitations. These include a small sample size, the absence of a control group, and relatively high pre-test scores. These limitations reduce the generalizability of the results and suggest the need for further refinement of the assessment tool. Future research should involve a greater number of participants, a wider range of participants in terms of demographics, extended intervention periods, varying levels of digital task difficulty, and controlled experimental comparisons. Such research could also further explore the manner in which different types of teacher guidance interact with digital media features to optimize vocabulary learning outcomes. Practically, teachers are advised to integrate wordwall.net into procedural text teaching by combining visual-based vocabulary tasks with structured guidance, feedback, and contextual explanations to maximize student vocabulary mastery.

DECLARATION OF USING AI TOOLS

The authors acknowledge the limited use of artificial intelligence (AI) tools during the preparation of this article, particularly to support language refinement, improve sentence clarity, and enhance the organization of ideas. The use of AI was conducted responsibly and ethically, without replacing the authors' intellectual contribution, critical analysis, interpretation of findings, or academic judgment. All research concepts, data analysis, arguments, conclusions, and final decisions regarding the content of the article remain the full responsibility of the authors. Therefore, the use of AI tools did not affect the originality, validity, or integrity of this scholarly work.

REFERENCES

- Abidah, L., Asih, R. A., & Widodo, E. (2023). Digital Game-Based Learning as a Strategy to Expand Vocational Students' Vocabulary: A Mixed Methods Approach. *Journal of Education Technology*, 7(3), 419–428. <https://doi.org/10.23887/jet.v7i3>
- Ary, D., & Jacobs, L. (2019a). *Introduction to Research in Education*, 10th ed. (Donald Ary, Lucy Cheser Jacobs).
- Ary, D., & Jacobs, L. C. (2019b). *Introduction to Research in Education*, 10th ed. (Donald Ary, Lucy Cheser Jacobs).
- Çakar Özkan, E. (2022). Scaffolding as Teachers' Guidance Role in the Context of Constructivist Learning Approach. *Journal of Educational Issues*, 8(1), 399. <https://doi.org/10.5296/jei.v8i1.19690>
- Çil, E. (2021). The Effect of Using Wordwall.net in Increasing Vocabulary Knowledge of 5th Grade EFL Students. *Language Education & Technology (LET Journal)*, 1(1), 21–28. <http://langedutech.com>
- Diah Anggreini, N., Wirawati, B., & Surjowati, R. (2023). Using Wordwall.net As A Media To Improve Students Vocabulary Mastery At The Eighth Grade Of SMP Negeri 40 Surabaya. *Journal English Education*. <https://erepository.uwks.ac.id/15818/11/JURNAL.pdf>
- Erni Ratna Dewi, A., Cahyani Kalil, N., Rahayu Juniati, S., Islam Makassar, U., Muhammadiyah Tanjung Redeb Berau Kalimantan Timur, S., Muslim Nusantara Al-Washliyah, U., & Muhammadiyah Sinjai, U. (2024). Creative Commons Attribution-ShareAlike 4.0 International License: <https://creativecommons.org/licenses/by-sa/4.0/> Jurnal of Pedagogi: Jurnal Pendidikan Exploring the Relationship between Teacher Professional Development and Student Learning Outcomes. *Jurnal Pendidikan*, 1(5). <https://doi.org/10.62872/k3d5gd27>
- Ghazi Khan Ghulam Mujtaba Yasir, D., Andleeb, N., & Ajmal, M. (2023). Analyzing the Role of a Supportive Classroom Environment through Effective Feedback at Ghazi University. In *Voyage Journal of Educational Studies (VJES)* (Vol. 3, Number 1).
- Ghonivita, Y., Pahamzah, J., Murti, S., Wijayanti, A., & Ageng, S. (2021). Improving Students' Listening Skill And Vocabulary Masteryn Through Contextual Teaching And Learning (Ctl) By Using Online Learning For Senior High School. *International Journal of English Language and Linguistics Research*, 9(4), 45–55. <https://ssrn.com/abstract=3866515>
- Gulbegim, J. (2023). Exploring The Impact Of Contextual Vocabulary Teaching Approaches On Uzbekistan Students' English Language Proficiency: Insights From Tashkent English Language Teachers' Perspectives. *American Journal of Pedagogical and Educational Research*. www.americanjournal.org
- Hayati, M., & Marhum, M. (2025). Gamification Vocabulary Learning: The Use Of Wordwall.Net In Junior High School. *Exposure Journal*, 491(2), 491–502. <https://journal.unismuh.ac.id/index.php/exposure>
- Irdiyansyah, S., & Gusnadi, I. (2024). The Influence of Digital Game-Based Learning on Student Vocabulary Enrichment: Baamboozle and Wordwall Implementation Apps. In *Asshika: Journal of English Language Teaching & Learning. Pages* (Vol. 1, Number 2).
- Li, W., Yu, J., Zhang, Z., & Liu, X. (2022). Dual Coding or Cognitive Load? Exploring the Effect of Multimodal Input on English as a Foreign Language Learners' Vocabulary Learning. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.834706>
- Makransky, G., & Mayer, R. E. (2022). Benefits of Taking a Virtual Field Trip in Immersive Virtual Reality: Evidence for the Immersion Principle in Multimedia

- Learning. *Educational Psychology Review*, 34(3), 1771–1798. <https://doi.org/10.1007/s10648-022-09675-4>
- Mokoagow, S. (2021). Peran Guru Pendamping dalam Meningkatkan Motivasi Belajar Siswa The Role of Companion Teachers in Improving Student Learning Motivation. *Journal of Elementary Educational Research*, 1(1), 20–26. <https://doi.org/https://doi.org/10.30984/jeer.v1i1.39>
- Nurmatova, H. (2024). Integrating Technology In English Language Teaching. *European Scholar Journal (ESJ)*. <https://doi.org/10.19080/GJAA.2019.11.555801>
- Okta Darma, H., Prima Dewi, M., Safitri, L., Safitri, W., & Islam Negeri Sjech Djamil Djambek Bukittinggi, U. M. (2023). The Effect Of Word Wall Media On Students' Vocabulary Mastery At The 7th Grade Of SMPN 3 Kec. *Atmosfer: Jurnal Pendidikan, Bahasa, Sastra, Seni, Budaya, Dan Sosial Humaniora*, 1(2). <https://doi.org/https://doi.org/10.59024/atmosfer.v1i2.68>
- Olena Kholodniak. (2024). The Role of Contextual Clues in Enhancing Vocabulary Acquisition in ESL Learners. *ESIC2024*, 8, 1. <https://doi.org/https://doi.org/10.70082/esiculture.vi.943>
- Sasse, H., Weber, A. M., Reuter, T., & Leuchter, M. (2025). Teacher Guidance and On-the-Fly Scaffolding in Primary School Students' Inquiry Learning. *Science Education*, 109(2), 579–604. <https://doi.org/10.1002/sc.21921>
- Siregar, T., Ali, S., Ahmad, H., & Padangsidempuan, A. (2025). Classroom Action Research-Based Learning Innovations: Kemmis and McTaggart Models. *Zenodo* 2025, 1(3), x–x. <https://doi.org/https://doi.org/10.5281/zenodo.17693570>
- Swari, N. K. T. A. (2023). Wordwall As A Learning Media To Increase Students' Reading Interest. *JPBII*, 11(1), 2615–4404. <https://doi.org/10.23887/jpbi.v11i1.1572>
- Teng, M. F. (2023). The effectiveness of multimedia input on vocabulary learning and retention. *Innovation in Language Learning and Teaching*, 17(3), 738–754. <https://doi.org/10.1080/17501229.2022.2131791>
- Wu, X. Y. (2024). Exploring the effects of digital technology on deep learning: a meta-analysis. *Education and Information Technologies*, 29(1), 425–458. <https://doi.org/10.1007/s10639-023-12307-1>
- Wulandari, P., & Mustika, D. (2023). The Role of Teachers as Learning Motivators for Pekanbaru Elementary School Students. *Scaffolding: Jurnal Pendidikan Islam Dan Multikulturalisme*, 5(2), 870–887. <https://doi.org/10.37680/scaffolding.v5i2.2997>
- Yuliana Ichسانی, A., Adelia, A., Hardoko, A., & Profesi Guru, P. (2023). Implementasi Media Wordwall Dan Partisipasi Peserta Didik Dalam Pembelajaran Pkn. *Prosiding Seminar Nasional PPG Universitas Mulawarman*, 2023. <https://doi.org/https://doi.org/10.30872/semnasppg.v4.3034>