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A Digital Learning Approach to Improve Students Vocabulary in Language Teaching: Utilizing Google Sites

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ABSTRACT

The digital transformation era has revolutionized education, emphasizing the need for innovative teaching methods. This study explores the integration of Google Sites as a platform for delivering vocabulary course instructions to address challenges such as demotivation, inefficiency, and lack of accessibility in traditional methods. Conducted with 36 undergraduate students from teaching training and education faculty at Nusa Cendana University, the research employed pre-test and post-test evaluations to measure the impact of the platform. Key features of the developed Google Site include multimedia elements, interactive quizzes, and collaborative tasks tailored to enhance engagement and learning outcomes. Results indicate a significant improvement in students' vocabulary proficiency, as evidenced by a statistically significant difference in pre-test and post-test scores (t=-9.6152, p less than 0.05. A large absolute value signals a very strong effect. The findings highlight the potential of Google Sites to transform vocabulary instruction by fostering motivation, accessibility, and effective learning.

Keywords: *Google Site, Vocabulary Instruction, digital transformation, language learning*

INTRODUCTION

The digital transformation era has brought significant transformations in education, driven by advancements in technology and the increasing demand for innovative teaching methods. Among the many areas influenced by these changes, vocabulary instruction stands out as a crucial component of language learning. Effective vocabulary teaching is fundamental for language proficiency, as it is a basic skill for improving reading, writing, speaking, and listening skills. The integration of technology into teaching practices has become not just a trend in the classroom but a necessity in the industrial revolution 4.0. However, traditional approaches to vocabulary instruction often rely on rote memorization and static materials, which may not resonate with today's learners who are accustomed to dynamic and interactive digital environments.

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Based on the preliminary studies with first-semester students, several issues have been identified regarding the vocabulary course. Firstly, the demotivation of students is an issue. Factors contributing to student demotivation include an unstimulating classroom environment and learning activities (Ahmad, 2021), limited vocabulary, and learning contents or materials. Repetitive and monotonous activities can lead to a lack of interest and enthusiasm, significantly hindering the learning process. Secondly, classroom efficiency is challenge associated with traditional, paper-based exercises. Distributing physical materials, collecting assignments, and providing feedback can consume valuable instructional time that could otherwise be spent on meaningful interactions and practice. Additionally, the rigidity of paper-based resources limits their adaptability; once printed, materials cannot easily be updated to reflect student needs or evolving curriculum objectives. This inefficiency can burden educators and reduce the overall effectiveness of the teaching process.

The distribution of materials often poses logistical challenges, particularly in large or diverse classrooms. Ensuring that all students receive and retain the necessary resources can be problematic, leading to inequities in access. Students who miss classes can create gaps in their learning. This lack of consistent access to materials undermines the cohesion of the learning experience and can exacerbate existing disparities among students.

To address these challenges, the use of technology has become indispensable in modern education. One such technological tool that holds immense potential for vocabulary instruction is Google Sites. As a free and user-friendly platform, Google Sites allows educators to create interactive, engaging, and accessible teaching materials (Jusriati, J., et al ,2021). By integrating multimedia resources such as videos, audio, images, and interactive quizzes, Google Sites provides a comprehensive environment where learners can explore vocabulary concepts in meaningful and contextually rich ways. Google site is its user-friendly interface and versatile features, Google Sites offers an ideal platform for creating customized, accessible, and interactive learning experiences. By incorporating multimedia elements, quizzes, and collaborative tools, educators can design resources that are not only engaging but also adaptable to diverse learning styles.

This initiative aims to address several challenges in vocabulary instruction, such as sustaining learner motivation, providing individualized support, and fostering real-world application of vocabulary skills. The function of vocabulary instruction is to save time, allowing lecturers to focus more on their role as facilitators, serve as a source for assessments, provide guidelines for teaching, and make the learning process

Vol 2, No. 2, 2025 pp.74-83
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significantly more effective (Kosasih, 2021).By exploring the potential of Google Sites, we seek to usher in a new era of teaching materials that enhance both teacher effectiveness and student success in vocabulary acquisition. Digital tools enhance learner engagement and motivation by providing visually appealing and interactive content (Dudeney and Hockly, 2012). Similarly, Nation (2013) emphasizes that vocabulary acquisition is most effective when learners are exposed to varied contexts and opportunities to practice. Google Sites, with its ability to combine diverse content types, offers such a platform, enabling students to engage actively with vocabulary rather than passively memorizing word lists.

Moreover, Google Sites promotes accessibility and inclusivity in learning. As an online platform, it allows students to access materials anytime and anywhere, breaking the barriers of time and location. This is particularly advantageous in diverse classroom settings where learners may have varying paces and styles of learning. By customizing materials to suit individual needs, educators can ensure that each student receives the support necessary for effective vocabulary acquisition. The platform also facilitates collaborative learning by allowing students to interact and share ideas through embedded discussion boards and shared tasks, fostering a sense of community and teamwork. Wicaksono, V. D., & Paksi, H. P. (2023) states that another significant advantage of Google Sites is its potential for teacher efficiency and resource management, 24/7 accessibility, and fostering self-paced learning by the students. Creating and updating teaching materials on Google Sites is straightforward, enabling educators to adapt content in response to student feedback or curriculum changes quickly. Furthermore, the platform's integration with other Google Workspace tools, such as Google Drive and Google Forms, streamlines the process of incorporating assessments, tracking progress, and providing feedback. These features align with the principles of modern pedagogy, which emphasize adaptability, continuous improvement, and data-driven instruction.

In addition to its practical benefits, the adoption of Google Sites aligns with educational theories that advocate for technology-enhanced learning. For instance, Mayer's (2009) Cognitive Theory of Multimedia Learning posits that learners understand and retain information better when presented with a combination of verbal and visual elements. The development of interactive learning media on Google Sites can enhance motivation and the achievement of learning outcomes (Saputra et al., 2023). Google Sites facilitates this by enabling educators to design content that integrates text, images, and videos seamlessly, catering to diverse cognitive preferences and enhancing comprehension. Therefore, a web-based teaching material

Vol 2, No. 2, 2025 pp.74-83
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ISSN 3031-9439

reference is needed to assist students in independent learning (Alvin, 2004). The integration of Google Sites into vocabulary instruction represents a paradigm shift in how teaching materials are developed and delivered. By offering a versatile, interactive, and learner-centered platform, Google Sites addresses the limitations of traditional methods and meets the demands of modern learners. This approach not only enhances vocabulary acquisition but also equips students with digital literacy skills essential for success in the 21st century. As educators continue to explore and adopt innovative tools like Google Sites, the future of vocabulary teaching promises to be more engaging, inclusive, and effective than ever before.

METHOD

This study employed quantitative method which gathered the result through the test. The participants in this study included 36 undergraduate students and enrolled in vocabulary course at English education study program, teacher training and education faculty at Universitas Nusa Cendana in academic year 2024/2025.

The procedure of this study, Google Sites integrated into the course as the primary platform for delivering instructional materials, exercises, and assessments. The site included the interactive features such as multimedia content, self-paced quizzes, and collaborative tasks.

Data collection focused on determining the improvement in students' English vocabulary learning outcomes by comparing scores from the pre-test and post-test assessments

RESULT AND DISCUSSION

Result

The development of the Google Site for vocabulary instruction involved a systematic process to ensure its effectiveness and alignment with learning objectives. This process included surveys and observations with the vocabulary teaching team and students to pinpoint specific learning needs, challenges, and preferences. The study investigated the impact of integrating Google Sites into a vocabulary course for undergraduate students. Data was collected through pre-test and post-test assessments, and the results were analyzed to determine the effectiveness of the Google Site platform on students' vocabulary proficiency.

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ISSN 3031-9439

a. Stages of development Google site

Here are some stages of development vocabulary instruction in Google site as follows:

- Selection topics and content design

This stage was a significant component to develop website, as it ensures that the materials were pedagogically, engaging, and aligned with the goals. The content was structured to align with standard curriculum and learning objectives were clearly defined for each module. First, vocabulary topics were meticulously selected to align with the existing English Education Study Program curriculum, ensuring that the site directly supported and enhanced classroom instruction. For each module within the site, clear and measurable learning objectives were established, providing students with a transparent framework for their learning. Second, the design of the content was guided by established vocabulary acquisition principles. This included a focus on contextualization, presenting vocabulary in meaningful contexts to aid comprehension and application, as well as strategic use of frequency and repetition to reinforce learning. To maximize student engagement and motivation, the site incorporated a variety of interactive elements. Multimedia components such as images, audio, and video were integrated to cater to different learning styles and add dynamism to the learning process. Interactive quizzes and games were included to provide students with opportunities for active practice and self-assessment, while collaborative tasks were designed to promote communication and teamwork. Finally, accessibility and inclusivity were key considerations in the design process. Content was structured to be clear and concise, utilizing visuals to support understanding, and aiming to be adaptable to the diverse needs of learners within the classroom.

- Developing platform structure and design

This stage was dedicated to building a Google Site that effectively supported vocabulary learning through a well-structured and engaging online environment. The primary goals were to establish a platform that was functional, user-friendly, and visually appealing to maximize student engagement and learning outcomes. Functionality was achieved by centralizing course materials, assignments, and communication tools within the site, streamlining the learning process. User-friendliness was emphasized through intuitive navigation, clear labeling, and a logical organization of content. Visual appeal was incorporated through the use of appropriate design elements to create a stimulating and modern learning space. To ensure ease of access, the site's information architecture was carefully planned, and

Vol 2, No. 2, 2025 pp.74-83
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ISSN 3031-9439

a main navigation menu was implemented, comprising sections such as Home, About the Course, Topics, Test, WhatsApp Group, and References

The development vocabulary instruction is designed to enhance students' knowledge and skills in mastering vocabulary. It includes various materials and organizes compressively. In addition, the platform also allows students to do assignment, test and access material. It helps lecturer to monitor and manage student's assignment easily.

b. Pre-test and Post-test Analysis

To evaluate the impact of the Google Site intervention, a paired t-test was conducted on the pre-test and post-test scores of the 36 student participants. The paired t-test is appropriate for comparing the means of two related groups, in this case, the same students' scores before and after the intervention. The figure 2. presenting the distribution of students' scores highlights this improvement, demonstrating the effectiveness of the treatment. The pre-test and post-test are detailed in the following figure.2

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        Paired t-test

data:  pretest and posttest
t = -9.6152, df = 35, p-value = 2.343e-11
alternative hypothesis: true mean difference is not equal to 0
95 percent confidence interval:
 -32.16236 -20.94875
sample estimates:
mean difference
      -26.55556
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Figure 2. The result of paired t-test of pre-test and post-test

This figure paired t-test statistics reflected students' performance in a pre-test and post-test after the implementation of Googles Site in a vocabulary course. The negative t-value (-9.6152) indicates that the mean score of the post-test was significantly higher than the mean score of the pre-test. The magnitude of the t-value suggests a substantial difference between the two sets of scores. In the test, the degrees of freedom (df = 35) reflect the number of participants minus 1, which is standard for a paired t-test with p-value (2.343e-11). It means that is far below the conventional significance level of 0.05. This result indicates that the observed difference in scores is statistically significant, meaning it is highly unlikely to have

Vol 2, No. 2, 2025 pp.74-83
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occurred by chance. The mean difference of -26.55556 represents the average improvement in scores from the pre-test to the post-test.

From the figure 2. the t-value is calculated as -9.6152 which indicated a large difference between the means of pre-test and post-test scores and showed that a strong effect of using Google Site on the students' vocabulary scores. Furthermore, the platform had a significant positive impact in the class. The paired t-test results further validate the platform's effectiveness, revealing a significant difference in scores before and after its implementation. The statistical analysis demonstrates a significant positive impact of the Google Site intervention on students' vocabulary proficiency.

Discussion

The implementation of Google Sites as a platform for vocabulary instruction yielded significant improvements in student engagement and learning outcomes, as evidenced by the paired t-test results ($t = -9.6152$, $p < 0.05$). This statistically significant result indicates that the use of Google Sites had a positive impact on students' vocabulary proficiency. The effectiveness of Google Sites in this context aligns with Mayer's (2009) Cognitive Theory of Multimedia Learning. This theory suggests that learning is enhanced when information is presented through a combination of verbal and visual channels. Google Sites facilitates this by allowing for the integration of text, images, audio, and video, which caters to different learning styles and optimizes cognitive processing. The platform's multimedia capabilities likely contributed to the observed improvements in vocabulary acquisition by providing students with varied and engaging ways to interact with the material.

Moreover, the study's findings directly address the key challenges identified in traditional vocabulary instruction: demotivation, inefficiency, and accessibility. (1) Demotivation, Google Sites' interactive features, such as quizzes, collaborative tasks, and multimedia elements, likely increased student motivation and engagement. Dudeney and Hockly (2012) emphasize the role of digital tools in enhancing learner engagement through visually appealing and interactive content. The platform's ability to provide a dynamic and stimulating learning environment may have countered the passivity and boredom often associated with traditional rote memorization methods. (2) Inefficiency, the use of Google Sites streamlined the delivery of materials, assignments, and feedback, addressing the inefficiencies of traditional paper-based methods. The platform's features, such as easy distribution

Vol 2, No. 2, 2025 pp.74-83
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ISSN 3031-9439

of materials and online submission of assignments, saved valuable instructional time, allowing educators to focus on more interactive and personalized instruction. (3) Accessibility, Google Sites' online accessibility ensured that students could access learning materials anytime and anywhere, overcoming the limitations of traditional classroom settings. This is particularly beneficial for students with diverse learning needs or those who may miss classes. The platform's flexibility promotes inclusivity and equitable access to educational resources.

The success of Google Sites in this study also underscores its alignment with constructivist learning and blended learning models. Constructivism, as advocated by Vygotsky (1978), emphasizes the active role of learners in constructing their own knowledge through social interaction and collaborative activities. Google Sites supports this by enabling collaborative tasks and discussions among students. Additionally, the platform's flexibility facilitates blended learning approaches, which combine online and face-to-face instruction, providing a more dynamic and student-centered learning experience. Bergmann & Sams (2012) highlight the benefits of flipped classroom models, where students can access content online at their own pace and use class time for more interactive activities. Google Sites can be a valuable tool for implementing such approaches.

In conclusion, the findings of this study suggest that Google Sites is a valuable tool for enhancing vocabulary instruction. Its ability to address key challenges in traditional methods and align with effective pedagogical theories makes it a promising platform for promoting student engagement, learning outcomes, and equitable access to education.

CONCLUSION

The integration of Google Sites into vocabulary instruction offers a transformative approach to language learning, addressing key challenges such as student demotivation, inefficiency in traditional teaching methods, and accessibility limitations. By leveraging the platform's user-friendly design, multimedia capabilities, and interactive features, educators can create an engaging and adaptable learning environment that caters to diverse student needs. The study conducted with 36 undergraduate students demonstrates the effectiveness of Google Sites in improving vocabulary acquisition, as evidenced by significant differences in pre-test and post-test scores. The platform's ability to facilitate self-paced learning, collaborative tasks, and real-time feedback ensures a more inclusive and efficient educational experience. However, the study also highlights areas for further exploration, such as scaling the

Vol 2, No. 2, 2025 pp.74-83
DOI: https://doi.org/10.52620/jls.v2i2.185
ISSN 3031-9439

platform for larger, more diverse groups and integrating advanced analytics tools for personalized learning. Future research could investigate long-term impacts on student performance and explore similar applications for other aspects of language learning. By fostering active participation and independent learning, Google Sites equips students with both vocabulary proficiency and essential digital literacy skills, preparing them for success in the 21st century. Google Sites represents a practical and innovative solution for modern vocabulary instruction, paving the way for more effective and engaging language learning methodologies. Future research could expand on these findings by exploring its application to other areas of language learning and assessing its long-term impact on student outcomes. For the future studies could scale to multiple instruction because 36 participants may not generalize to broader populations and add the integrations of AI tools such as chatbots for vocabulary practice.

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