

## THE EFFECT OF WORD SEARCH PUZZLE GAME AS MEDIA TO TEACH VOCABULARY FOR STUDENTS GRADE 11<sup>th</sup> MAJOR TKR OF SMK MUHAMMADIYAH KAJEN

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### ABSTRACT

*This study investigates the effectiveness of integrating Word Search puzzles as a pedagogical tool to enhance vocabulary acquisition among 11th-grade students majoring in Automotive Engineering (TKR). The research employed a quasi-experimental design with a non-equivalent control group, involving 60 students divided into experimental and control groups. Pre-test and post-test assessments were conducted to measure vocabulary proficiency before and after the intervention. The experimental group engaged in structured activities using Word Search puzzles to reinforce vocabulary learning, while the control group received traditional instruction. The result of this research revealed a significant difference between the experimental and control groups in their post-test scores, with a calculated t-value of 8.050 and a p-value (Sig. 2-tailed) of 0.000, which is below the significance level of 0.05. This indicates that employing Word Search puzzles as a teaching tool had a substantial impact on improving vocabulary learning outcomes compared to traditional instructional methods. From these results, English teachers are encouraged to adopt effective teaching techniques, particularly employing the Word Search Puzzle Game, given it demonstrated positive impact on vocabulary instruction. Future researchers are encouraged to expand upon this study by exploring additional vocabulary topics.*

**Key Words** : Teaching Media, Word Search Puzzle, Game, Teaching Vocabulary

### INTRODUCTION

English, a global lingua franca, is mandatory for students in Indonesia. Permana (2020) highlights that proficiency in both oral and written English signifies successful language mastery, encompassing speaking, writing, listening, and reading skills. Effective language learning requires developing both receptive (reading and listening) and productive (speaking and writing) skills. Vocabulary acquisition, a challenging yet essential aspect of language learning, forms the foundation of communication (Dakhi & Fitria, 2019).

Rasulva (2023) underscores the critical role of vocabulary in language learning, essential for communication and text comprehension. However, observations in a 11th-grade TKR (Automotive Engineering) class at SMK Muhammadiyah Kajen reveal that students struggle with vocabulary retention due to pronunciation difficulties and inadequate teaching methods. Current methods involve basic oral question-and-answer sessions, lacking emphasis on vocabulary retention and student engagement. To address these issues, this research explores the use of engaging media, specifically Word Search puzzles, in vocabulary instruction. Defined by the Cambridge Dictionary as a game where players find hidden words in a grid, Word Search puzzles offer a low-stress, enjoyable method for vocabulary learning. Word Search puzzles can help students expand their vocabulary in a fun and challenging way, enhancing their focus and exposing them to procedural text vocabulary relevant to the TKR major. Their simplicity and accessibility allow students to practice anytime, improving vocabulary skills. This research aims to motivate TKR students to engage in vocabulary learning through Word Search puzzles, ultimately enhancing their language proficiency.

## METHOD

### Design

A research design outlines the overall plan, structure, and strategy for conducting research. This research employs a quasi-experimental design, specifically the non-equivalent control group design. In this design, participants are divided into two groups: an experimental class and a control class. Both groups will participate in a pre-test to assess their initial vocabulary comprehension. The experimental class will then receive the intervention, which involves the use of Word Search puzzle games, while the control class will not receive any treatment. Following the intervention, both classes will take a post-test to evaluate vocabulary improvement.

**Table 1.1** Research Design

Class	Pre-test	Treatment	Post-test
A	O <sub>1</sub>	X	O <sub>2</sub>
B	O <sub>1</sub>	-	O <sub>2</sub>

- Experimental Class: Takes a pre-test (O<sub>1</sub>), receives the Word Search puzzle game treatment (X), and takes a post-test (O<sub>2</sub>).
- Control Class: Takes a pre-test (O<sub>1</sub>), receives no treatment (-), and takes a post-test (O<sub>2</sub>).

This design facilitates a comparison of vocabulary gains between the experimental and control groups, allowing for the assessment of the effectiveness of Word Search puzzle games in enhancing vocabulary comprehension.

### Subject

The population for this research consists of the entire cohort of 11th-grade students from classes TKR 3 and TKR 5 at SMK Muhammadiyah Kajen. These classes collectively encompass a total of 60 students, with each class comprising 30 students. The selection of this particular population is based on the relevance and applicability of the research to their curriculum and learning needs. TKR, or Teknik Kendaraan Ringan is a specialized field within the vocational school that focuses on automotive engineering skills. Given the technical nature of their studies, these students often encounter challenges in mastering English vocabulary specific to their field. By focusing on these two classes, the research aims to provide a comprehensive analysis of the impact of Word Search puzzle games on vocabulary acquisition within a context that directly relates to the students' academic and professional aspirations.

### Research Instruments

Research instruments for this research involves three stages: pre-test, treatment, and post-test. Initially, a pre-test assesses students' baseline vocabulary knowledge before treatment with Word Search puzzles. The researcher explains the research's purpose and conducts the pre-test in both control and experimental groups.

The treatment phase includes two meetings for the experimental group. In the first meeting, students receive worksheets with Word Search puzzles, find and shade vocabulary words, determine their meanings, and use them in sentences. The class then discusses the results together. In the second meeting, students work in groups on similar worksheets, exchange their work with other groups, and correct it collectively.

After the treatment, a post-test is administered to both groups to measure vocabulary acquisition. Comparing pre-test and post-test results evaluates the effectiveness of the Word Search puzzles,

highlighting any significant differences in vocabulary improvement between the treated and untreated groups.

### **Data Analysis Technique**

In this research, data will be collected and analysed using primarily quantitative methods, focusing on pre-test, post-test, and interview data. These data sources are pivotal in addressing the research questions effectively. The process of data analysis will unfold through several methodical steps designed to derive meaningful insights.

Initially, the analysis will involve a detailed examination of the pre-test and post-test scores obtained from both the experimental and control groups. By comparing these scores, the research aims to assess the initial and subsequent levels of vocabulary mastery among students before and after the intervention with Word Search puzzles.

Next, the mean scores for both the experimental and control groups will be calculated. This step is crucial in determining whether there exists a statistically significant difference between the groups that received the Word Search puzzle treatment and those that did not. According to Arikunto's formula:

$$\bar{X} = \frac{\sum X}{n}$$

Where:

$\bar{X}$  = Mean score

$\sum X$  = Sum score

n = The total number of students

Following the calculation of mean scores, the analysis will proceed to employ T-test statistical calculations. This statistical method will be utilized to quantitatively evaluate the differences in outcomes between students who were taught vocabulary using Word Search puzzles and those who were not. The T-test will help ascertain whether any observed differences in vocabulary acquisition are statistically significant, providing robust evidence of the effectiveness of the teaching method.

By meticulously applying these data analysis techniques, the research aims to provide a comprehensive evaluation of the impact of Word Search puzzles on students' vocabulary acquisition. This approach not only quantifies the effectiveness of the instructional intervention but also offers insights that can inform future educational practices aimed at enhancing vocabulary learning outcomes in similar educational settings

## **RESULT AND DISCUSSION**

The results and discussion of this research illuminate the impact of using Word Search puzzles as a teaching tool to enhance vocabulary acquisition among 11th-grade TKR students. Through an analysis of pre-test and post-test scores, along with statistical tests, the research reveals compelling insights into the effectiveness of this instructional method. This subsection examines the findings in detail, beginning with an overview of the pre-test and post-test outcomes, followed by a discussion on the statistical analysis that highlights significant differences between the experimental and control groups. These insights contribute to a deeper understanding of how innovative teaching strategies can positively influence language learning outcomes in specialized educational contexts.

The analysis of pre-test and post-test scores revealed significant findings regarding the effectiveness of using Word Search puzzles in teaching vocabulary to 11th-grade TKR students. Initially, the pre-test

results showed that the experimental group had a mean score of 47.3, ranging from 15 to 70, while the control group had a mean score of 56.6, with scores ranging from 30 to 80. These scores established a baseline for comparing the groups' initial vocabulary proficiency.

Following the treatment, the post-test results demonstrated considerable improvements. The experimental group achieved a mean post-test score of 94.3, ranging from 80 to 100, indicating substantial enhancement in vocabulary comprehension. In contrast, the control group's mean post-test score was 79.5, ranging from 60 to 90. This disparity in post-test scores suggested varying levels of vocabulary retention and acquisition between the groups.

To ascertain the statistical significance of these findings, a T-test was conducted using SPSS 26. The results indicated a significant difference between the experimental and control groups in their post-test scores ( $t = 8.050$ ,  $df = 58$ ,  $p < 0.001$ ). Levene's Test for Equality of Variances confirmed equal variances ( $F = 0.846$ ,  $p = 0.361$ ), allowing for the use of results assuming equal variances. The mean difference between the groups was 14.833 (95% CI: 11.145 - 18.522), with the experimental group outperforming the control group.

Further examination of the average post-test scores provided additional insights. The experimental group had a notably higher mean score of 94.33, with a lower standard deviation of 6.397 and a standard error of the mean of 1.168. In contrast, the control group had a lower mean score of 79.50, accompanied by a higher standard deviation of 7.804 and a slightly higher standard error of the mean at 1.425. These statistics suggest that the experimental approach, using Word Search puzzles, effectively enhanced vocabulary acquisition compared to traditional methods employed with the control group.

In conclusion, the findings from this research indicate that the use of Word Search puzzles as a teaching tool significantly improves vocabulary learning outcomes for 11th-grade TKR students. The experimental group demonstrated higher post-test scores and lower variability in performance, suggesting a more consistent impact of the intervention. These results underscore the effectiveness of integrating interactive and engaging activities like Word Search puzzles into language instruction to enhance student learning and comprehension in specialized fields such as automotive engineering.

## **CONCLUSION AND SUGGESTION**

In conclusion, this research has demonstrated the effectiveness of using Word Search puzzles as a tool for enhancing vocabulary acquisition among 11th-grade TKR students. The significant improvements observed in the experimental group, as evidenced by higher post-test scores and a clear mean score difference from the control group, underscore the positive impact of this interactive teaching method.

Moving forward, teachers can benefit from integrating similar interactive activities into their curriculum to foster engagement and improve learning outcomes. This approach not only enhances vocabulary retention but also cultivates students' interest and participation in language learning. Furthermore, professional development programs should emphasize innovative teaching strategies, including the integration of games and puzzles, to equip teachers with effective methods for diverse classroom environments.

For future research, exploring the long-term effects of using Word Search puzzles on vocabulary retention and assessing their applicability across different educational settings would provide valuable insights. Additionally, investigating the specific mechanisms through which interactive activities influence learning outcomes could further enhance educational practices.

In summary, this research highlights the importance of employing creative and engaging instructional techniques like Word Search puzzles to enhance language learning outcomes. By adopting these suggestions, teachers can create dynamic learning environments that foster both academic achievement and student enthusiasm for learning)

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