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# Keyword Technique as a Strategy for Vocabulary Development

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***Abstract*** *Vocabulary acquisition is fundamental to language proficiency, yet retention remains a persistent cognitive challenge for students. Conventional rote-learning strategies often fail to facilitate long-term recall. This study examines the effectiveness of the keyword technique in improving students' vocabulary mastery. Employing a quantitative quasi-experimental design, the research involved 48 students selected through cluster random sampling. The samples were separated into two groups: an experimental group of 26 students (taught by using the keyword technique) and a control group of 22 students (taught by using conventional strategy). Data were collected using a validated multiple-choice vocabulary test administered before and after the treatment. This result validates a notable difference in outcomes where the experimental group demonstrated better performance; consequently, the alternative hypothesis (Ha) is accepted, leading to the rejection of the null hypothesis ($H_0$). These findings confirm that the Keyword Technique significantly enhances vocabulary mastery by leveraging acoustic and imagery associations. Consequently, this strategy is recommended to foster more effective vocabulary retention.*

***Keywords****: Keyword Technique, Memory, Rote-Learning, Teaching Strategy, Vocabulary*

## 1. INTRODUCTION

Language is the most powerful tool for expressing our thoughts, intentions, and purposes clearly to others (Apriyanto, 2020). To effectively fulfill this fundamental communicative role, English has emerged as the dominant international language across key global sectors, including education, commerce, scientific research, and technology (Crystal, 2003). The curriculum mandates that learners demonstrate mastery across the four core English competencies: reading, writing, listening, and speaking. The effective development of these skills is fundamentally dependent on adequate vocabulary knowledge, which serves as the essential foundation for all language abilities (Nation, 2013). Since vocabulary knowledge underlies every aspect of language performance, its mastery significantly affects both productive and receptive skills.

However, restricted vocabulary frequently impedes the precise and comprehensive articulation of ideas within an academic context (Taye & Mengesha, 2024). This limitation is particularly critical given that vocabulary is widely regarded as the essential foundation for all language abilities, enabling learners to achieve clarity in both conceptual comprehension and expression. However, the insufficiency of a learner's vocabulary stock often manifests as a constellation of specific linguistic difficulties. These challenges commonly include observable errors such as mispronunciation, orthographical errors (misspelling), and a pronounced inability to infer meaning from context when reading or listening (Afzal, 2019; Juliana &

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Wulandari, 2021). These problems result in poor academic performance and hinder language development.

Given these challenges, teachers need to apply appropriate strategies that can make vocabulary learning more engaging and effective. One technique that has gained attention is the keyword technique, a mnemonic-based method that helps learners associate unfamiliar English words with familiar sounds or images (Thornbury, 2002). For example, Nation (2014) illustrates how Indonesian learners might remember the English word parrot by linking it to the Indonesian word parit (ditch) and imagining a parrot lying in a ditch. This mental association strengthens memory retention and facilitates recall.

Several studies have been carried out to explore the enhancement of students' vocabulary acquisition through the use of the keyword technique. Studies by Hy (2019); Nissa et al (2021); Susana (2017) conducted a Classroom Action Research (CAR)'s study aimed at improving and observing students' vocabulary mastery through the implimentation of the keyword technique. From these studies, it was consistently revealed that students' vocabulary knowledge showed improvement following the implementation of this technique. However, most of these studies employed classroom action research (CAR), leaving a gap for further investigation through quantitative approaches. Consequently, this study seeks to examine the effect of keyword technique in fostering vocabulary development among eighth-graders. Ideally, the outcomes of this study will assist instructors in selecting impactful pedagogical approaches for vocabulary instruction. Additionally, the study is expected to empower students to utilize this tool independently for better language mastery.

## 2. RESEARCH METHOD

A quasi-experimental design was applied within a quantitative method in this study to measure how well the keyword technique impacts students' ability to retain vocabulary. The samples consist of 48 eighth-grade students distributed into two groups: an experimental group (26 students, exposed to keyword technique) and a control group (22 students, exposed to conventional pedagogical strategies). To maintain data integrity, a vocabulary proficiency assessment was utilized as the primary instrument, conducted as both a pre-test and post-test. Prior to deployment, the instrument underwent rigorous psychometric assessment, confirming its validity and reliability as an adequate measurement tool for the research objectives.

Quantitative data analysis was conducted using IBM SPSS Statistics. Preliminary assumption testing, comprising normality and homogeneity checks, was performed to ensure the suitability of the dataset for parametric statistics. Subsequently, an Independent Samples

T-test was conducted as hypothesis testing to examine notable disparities in post-test results between the two groups. Complementing this, a Paired Samples T-test was utilized to measure the magnitude of improvement (pre-test vs. post-test) within each group, thereby providing a comprehensive evaluation of the intervention's effectiveness.

## 3. FINDINGS AND DISCUSSION

### Findings

#### 1. Descriptive Statistics

The researcher obtained the data from both groups by conducting a pre-test and a post-test. Before administering the treatment, students underwent a pre-test during the initial meeting to assess their initial vocabulary proficiency. Following the treatment, a post-test was administered during the final meeting to evaluate the enhancement in students' vocabulary proficiency. The data are outlined in the table provided below.

**Table 1.** Descriptive Statistics.

| Class Type | N | Min. | Max. | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Pre-Test Experimental Class | 26 | 10 | 70 | 41.15 | 12.752 |
| Post-Test Experimental Class | 26 | 40 | 80 | 65.96 | 10.101 |
| Valid N | 26 | | | | |
| Pre-Test Control Class | 22 | 20 | 60 | 41.82 | 10.97 |
| Post-Test Control Class | 22 | 40 | 75 | 56.82 | 9.946 |
| Valid N (listwise) | 22 | | | | |

Table 1 illustrates a notable enhancement in the performance of both the experimental and control groups. Pre-test scores from experimental group ranged from 10 to 70, which subsequently improved to a range of 40 to 80 in the post-test. Notably, the mean score of the experimental group demonstrated a substantial increase of 24.81 points, elevating from 41.15 in the pre-test to 65.96 in the post-test.Concurrently, the control group also experienced gains, with pre-test scores spanning from 20 to 60, followed by post-test scores ranging from 40 to 75. The mean score for this group rose from 41.82 to 56.82, reflecting a 15-point increase.These

comparative results suggest that while both interventions were beneficial, the experimental group exhibited a significantly greater mean score increase. The results demonstrate the effectiveness of the Keyword Technique in improving students' vocabulary skills in contrast to the traditional method employed in the control group.

**2. Normality Test**

A preliminary normality assessment was conducted to determine whether tha data followed a normal distribution, which is a crucial requirement for utilizing the t-test. The Shapiro-Wilk test was specifically employed for this analysis, a choice justified by the relatively small sample size (fewer than 50 samples) utilized in the study.The decision rule for interpreting the test results is based on the significance value. If Sig. > 0,05 or p-value > α, we accept the $H_0$.

**Table 2.** Normality Test of Experimental Group.

| **Statistics** | **Pre-Test** | **Post-Test** |
|---|---|---|
| **Sample Size (N)** | 26 | 26 |
| **Average (x)** | 41.153846 | 65.961538 |
| **Median** | 40 | 67.5 |
| **Sample Standard Deviation (S)** | 12.752074 | 10.101409 |
| **Sum of Squares** | 4065.384615 | 2550.961538 |
| **p-value** | 0.793348 | 0.126091 |

The initial Shapiro-Wilk test was performed to verify if the data conformed to the assumption of a normal distribution, a necessary condition for the following t-test. As evidenced by Table 2, the data for the experimental group successfully fulfilled this requirement. More precisely, the pre-test results demonstrated a significance value of 0.793, while the post-test results revealed a significance value of 0.126. Since both p-values (0.793 and 0.126) were greater than the alpha level ($\alpha = 0.05$), the null hypothesis ($H_0$) was retained. This result clearly demonstrates that the data pertaining to the experimental group exhibited a normal distribution in both the pre-test and post-test conditions.

**Table 3.** Normality Test of Control Group.

| **Statistics** | **Pre-Test** | **Post-Test** |
|---|---|---|
| **Sample Size (N)** | 22 | 22 |
| **Average (x)** | 41.818182 | 56.818182 |

| | | |
|---|---|---|
| **Median** | 42.5 | 55 |
| **Sample Standard Deviation (S)** | 10.970247 | 9.945740 |
| **Sum of Squares** | 2527.272727 | 2077.272727 |
| **p-value** | 0.413187 | 0.148518 |

The Shapiro-Wilk test was also applied to the data from the control group to verify the assumption of normality. As indicated in Table 3, the results confirmed that the data for the control group were normally distributed in both test conditions. Specifically, the pre-test yielded a significance value of 0.413 ($p > 0.05$), while the post-test resulted in a significance value of 0.148 ($p>0.05$). Since both p-values exceeded the predetermined alpha level ($\alpha = 0.05$), the null hypothesis of non-normality was rejected. So, the data from both groups satisfied the normality assumption.

### 3. Homogeneity Test

Subsequent to the normality verification, the study proceeded to test for homogeneity to ensure that the variances within the post-intervention data of the experimental and control classes were comparable. The Levene's test was used specifically for this purpose. According to the decision rule, if the significance value exceeds 0.05 ($p > 0.05$), the null hypothesis (H0) stating equal variances is upheld, indicating homogeneity of variances. The specific outcome of this homogeneity test is shown in the table below.

**Table 4.** Homogeneity Test of Variance.

| **Students' Score** | **Levene Statistic** | **df1** | **df2** | **Sig.** |
|---|---|---|---|---|
| Based on Mean | .079 | 1 | 46 | .780 |
| Based on Median | .029 | 1 | 46 | .866 |
| Based on Median and with adjusted df | .029 | 1 | 45.508 | .866 |
| Based on trimmed mean | .078 | 1 | 46 | .785 |

Based on the table above, the significance value (Sig.) based on the mean was 0.780 (p > 0.05), indicating that the post-test variances of both groups were homogeneous.

**4. T-Test**

The researcher employed an independent samples t-test to evaluate if a significant disparity in vocabulary proficiency existed between the experimental group and the control group. The t-test was utilized to analyze the comparative data. The criterion for establishing statistical significance was set at a p-value (Sig. 2-tailed) less than 0.05 (p < 0.05), indicating the presence of a real and substantial distinction between the mean of the post-test scores of the two groups.

**Table 5.** Independent Samples Test.

| | | Levene's Test for Equality of Variances | | t-test for Equality of means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of the Difference | |
| | | f | Sig. | T | df | Sig.(2-tailed) | Mean Difference | Std. Error Differences | Lower | Upper |
| Students' Score | Equal variances assumed | .079 | .780 | 3.147 | 46 | .003 | 9.1433 | 2.9057 | 3.29448 | 14.99224 |
| | Equal variances not assumed | | | 3.151 | 44.915 | .003 | 9.14336 | 2.90186 | 3.29840 | 14.98832 |

Table 5 illustrates the results of the independent samples t-test, revealing a significant statistical difference in the mean of the post-test performance between the two groups. Specifically, the calculated p-value (Sig. 2-tailed) was 0.003. Since this value is less than the significance level (α = 0.05), the null hypothesis was rejected, confirming a significant variation in vocabulary mastery outcomes between the two groups.

**Table 6.** Paired Samples Test.

| **Levene's Test for Equality of Variances** | **f** | **Sig.** | **t-test for Equality of Means** | **Sig.(2-tailed)** | **95% Confidence Interval of the Difference** |
|---|---|---|---|---|---|
| **Students' Score** | Equal variances assumed | .780 | T | .003 | Mean Difference |
| | Equal variances not assumed | .003 | 9.1433 | 2.9057 | 3.29448 |
| | 3.151 | | df | 46 | Std. Error Difference |
| | | | Mean Difference | 9.14336 | 2.90186 |
| | | | Upper | 14.98832 | |

| | | |
|---|---|---|
| | Lower | 3.29840 |

Table 6 showed the analysis of the experimental group's performance utilizing the paired samples t-test. The primary objective of this test was to assess the internal efficacy of the intervention by determining whether the keyword technique itself yielded a significant improvement in the experimental group. The analysis revealed a notable and statistically significant disparity in the scores from the pre-test to the post-test. Specifically, the p-value (Sig. 2-tailed) was found to be 0.000. Since this p-value is less than the established significance level ($\alpha = 0.05$), the null hypothesis ($H_0$) of no effect is decisively rejected. The findings constitute strong evidence showing that the Keyword Technique improved the experimental group's vocabulary mastery with a statistically significant positive effect.

**5. Hypothesis Test**

The t-test definitively established a significant and noteworthy difference between the experimental and control groups. Specifically, the calculated t-value (3.147) exceeded the critical t-table value (2.01) at the 0.05 significance level. Furthermore, the p-value (Sig. 2-tailed) was 0.003, which is substantially lower than the 0.05 alpha level. Based on these compelling statistical indicators, the null hypothesis ($H_0$) was rejected, leading to the acceptance of the alternative hypothesis (Ha). This result offers compelling empirical proof that the use of keywords technique is successful in enhancing students' grasp of vocabulary to a significant extent.

**Discussion**

This research demonstrates that employing the Keyword Technique yielded a marked improvement in learners' proficiency in vocabulary compared to conventional instruction. The higher mean score gain in the experimental group indicates that associating new words with meaningful verbal or visual cues strengthened students' retention and recall. This finding was consistent with Al-khawaldeh & Al-khasawneh (2019); Mutmainnah (2021); Sofeny & Muamanah (2021); Taheri & Davoudi (2016)'s studies. Their studies revealed that learners who were provided with consistent keyword training obtained a reliable benefit in vocabulary learning when compared to those instructed by the traditional memory-loaded approach.

Moreover, employing the right mnemonic strategies during learning allows students to maximize their brain's encoding and retrieval mechanisms, which improves memory retention (Siagian et al., 2023). A study by Lubis & Syahputri (2022) found that keyword technique is the most preferable compare to the other menemonic types such as rhyme-keys, acronym, peg word system and loci method because students were easy to remember something that near

from their daily language or something iconic in their language. The Keyword Method is highly effective at minimizing the difficulties learners face when acquiring and retaining new words in a second language (L2) (Davoudi & Yousefi, 2016). Furthermore, The implementation of the keyword technique, when combined with retrieval practice for long-term learning, constituted a significant advantage (Chiu & Hawkins, 2023).

Therefore, the significant improvement found in this study demonstrates that the keyword technique is not only effective for vocabulary learning but also valuable for fostering long-term retention and learner engagement in EFL classrooms.

## 4. CONCLUSION

This study's findings clearly indicate that the Keyword Technique is significantly more effective for vocabulary acquisition than conventional methods. Although samples in both the experimental (Keyword Technique) and control (conventional strategies) groups showed improvement after the intervention, statistical analysis validated the superior results achieved by the group utilizing the Keyword Technique. These findings robustly confirm that the intervention, grounded in mnemonic associations, provides a distinct advantage over conventional rote learning, effectively validating the research hypothesis that using keyword technique significantly improve students' vocabulary mastery.

Beyond statistical significance, these results offer critical pedagogical implications for EFL instruction. The study suggests that vocabulary retention is markedly improved when learners engage in the cognitive processing of acoustic and visual links, rather than relying solely on mechanical memorization. Consequently, the Keyword Technique is highly recommended as a strategic instructional tool for educators aiming to foster deeper cognitive engagement and overcome persistent vocabulary retention challenges in language learning contexts.

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