THE EFFECT OF ANAGRAM ON STUDENTS' SPELLING PROFICIENCY: AN EXPERIMENT ON ELEMENTARY STUDENTS OF WIN INSTITUTE PAMEKASAN

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Abstrak
Penelitian ini menyelidiki dampak dari strategi pembelajaran berbasis anagram terhadap kemampuan mengeja siswa, untuk menjawab pertanyaan penelitian apakah strategi ini dapat meningkatkan kemampuan mengeja dibandingkan dengan sebelum dan sesudah perlakuan. Untuk menilai hal ini, data kuantitatif dikumpulkan melalui penilaian ejaan standar dan metrik kinerja yang diberikan sebelum dan sesudah penerapan latihan anagram di ruang kelas. Temuan tersebut mengungkapkan peningkatan yang signifikan secara statistik dalam skor ejaan di antara siswa yang terlibat dalam kegiatan berbasis anagram, yang menunjukkan bahwa strategi ini tidak hanya mendorong keterlibatan yang lebih besar dalam proses pembelajaran tetapi juga mengarah pada peningkatan retensi pola dan aturan ejaan. Hasil penelitian menunjukkan bahwa nilai Sig. (2-tailed) adalah 0,00 yang lebih rendah dari 0,05. Hal ini berarti bahwa ada pengaruh positif dari anagram terhadap kemampuan mengeja siswa. Selain itu, signifikansi peningkatan kemampuan mengeja lebih jauh lagi. Dengan meningkatkan kemampuan mengeja siswa melalui metode yang efektif dan interaktif seperti latihan anagram, penelitian ini memberikan kontribusi wawasan berharga yang dapat menginformasikan desain instruksional dan pendekatan pedagogis dalam dunia pendidikan.
Kata Kunci: Anagram, kemampuan mengeja

Abstract
This research investigates the impact of anagram-based learning strategies on students spelling abilities, addressing the critical research question of whether these strategies can enhance spelling proficiency compared to before and after treatment. To assess this, quantitative data were collected through standardized spelling assessments and performance metrics administered before and after the implementation of anagram exercises in the classroom setting. The findings reveal a statistically significant improvement in spelling scores among students who engaged with anagram-based activities, suggesting that these strategies not only foster greater engagement in the learning process but also lead to enhanced retention of spelling patterns and rules. The result of the research shows that Sig. (2-tailed) is 0.00 that lower than 0.05. It means that there is positive effect of anagram on students spelling proficiency. Furthermore, the significance of improved spelling abilities extends beyond. By enhancing student spelling capabilities through effective and interactive methods such as anagram exercises, the study contributes valuable insights that may inform instructional design and pedagogical approaches in educational settings.
Keywords: *Anagram, Spelling proficiency*

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The Effect OF Anagram On Students' Spelling Proficiency: An Experiment On Elementary Students

INTRODUCTION

In recent years, there has been a growing recognition of the importance of effective instructional strategies in enhancing students' literacy skills, particularly in spelling, which serves as a foundational component of language acquisition and communication. The increasing prevalence of spelling difficulties among students, often attributed to inadequate teaching methodologies, necessitates innovative approaches to instruction that engage learners and promote retention of spelling patterns and rules. Spelling is a fundamental component of literacy skills that significantly contributes to academic success(Lazarus & Audu, 2023) and effective communication. However, in recent years, many students have been struggling with spelling, often due to the use of ineffective teaching methods. Traditional approaches such as rote memorization tend to fall short in fostering long-term understanding of spelling rules and patterns. As a result, there is a growing need for more engaging and effective instructional strategies.

One promising approach in spelling instruction is the use of **anagram-based activities**, which involve rearranging letters to form meaningful words. This strategy is not only cognitively stimulating but also enjoyable for learners, making it a potentially effective method to enhance students' phonological awareness and morphological understanding. Several studies have indicated that using interactive learning can improve spelling proficiency, especially when implemented in interactive and multimodal learning environments(Al Ghaithi et al., 2025)

From a theoretical standpoint, anagram-based learning aligns with several educational theories. It reflects Piaget's cognitive development theory that emphasizes learning through play, supports behaviorist views that highlight repetition and reinforcement, and is consistent with Bandura's social-cognitive theory, which underscores the importance of collaborative learning environments(Erawati & Adnyana, 2024).

Despite the recognized importance of spelling in language proficiency and academic achievement, many students continue to experience difficulties in mastering correct spelling. Traditional teaching methods, which often rely on rote memorization and mechanical drills, tend to be disengaging and ineffective for long-term retention. Although anagram-based learning has been suggested as a more interactive and stimulating alternative, there is a lack of empirical research examining its effectiveness in the classroom context. This study addresses the following research objectives: the first is Examine the impact of anagram-based strategies on students' spelling performance. The second is to test how significan is the effect of anagram on students spelling proficiency.

Previous research has done by many researchers. Most of them discover the effect of anagram on students' vocabulary mastery. Such as research conducted by Indrawati and Resty, their research found that the implementation of anagram was successful in improving students' vocabulary mastery, it was proven by the value of t-obtained was 3.488 which was higher than t-table 2.03 (at the significant level p<0,05 in two tailed testing with degree of freedom 70)(Indrawati & Resti, 2020). Another research also done by Kartikasari et al, their research was conducted in junior high school and the finding showed that anagram game was be able to improve students vocabulary mastery(Kartikasari et al., 2021). The others study was discovered by Sihombing et al they study about anagram on students' vocabulary mastery in senior high school and the results are not much different from the two previous studies (Sihombing & Pricilia, 2020).

From the previous research the researcher finds novelty or gab tobe discovered in this study namely using anagram to improve students spelling proficiency. Most previous researches trying anagram to improve vocabulary mastery but in this research the researcher focus on improving students' spelling proficiency by using anagram. Dealing with this gab the elementary students of WIN Institute pamekasan get difficulties in mastering spelling. Therefore, this study aims to investigate the effectiveness of anagram-based learning strategies in improving students' spelling skills, and to measure how significant the improvement. It is hoped that this research will provide both theoretical insights and practical implications for developing innovative, engaging, and sustainable literacy teaching strategies.

METHOD

This research uses a quantitative approach with a pre-experimental design where one group is tested twice, namely the pretest and post test(Ary et al., 2019). Then the treatment is given in the middle.The design is as follow

Table 1. **One-Group Pretest-Posttest Design**

Pre-test	Independent	Post test
Y1	X	Y2

Y1   : pre-test

X   : treatment

Y2   : post test

The subject of this research is elementary students in non formal education namely Win Institute Pamekasan. The number of the students is 15. The instrument to collect the data the researcher uses test. The number of the test is 10 question. Then for analysing the data SPSS 20 is used to know the effect of Anagram on students spelling ability especially paired t-test. Meanwhile, to find out that the sample is normally distributed, the normality test is treated. To test this, researchers used the Shapiro Wilk test in SPSS 20.To check validity and reliability of the data the researcher uses Pearson product moment for validity

and Cronbach Alpha for reliability test. To check both the researcher uses SPSS 20 to analyse the data.

RESULT AND DISCUSSION

The treatment was conducted twice but before it the pretest was given to know the students prior knowledge about students spelling ability. After treatment given the post test was conducted to test the influence. The table bellow is the result of the pre test and post test.

Table 1. Result of pretest and posttest

Name	Pre-test	Post test
RE	50	65
LA	60	70
AL	57	72
FE	58	64
SA	62	65
SE	65	70
LE	70	70
AI	58	60
SI	62	65
FA	67	72
N: 15	874	972

From the table above we can read that the total number of the sample is 15 students. The higher score is 70 for the pretest and 72 for post test. And the low score for pretest is 50 and 60 for posttest. None of the students experienced a decrease in score after receiving treatment. There was only one student who did not experience a change in score after receiving treatment.

Table 2. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	58.27	15	6.088	1.572
	posttes	64.80	15	4.945	1.277

The table above showed that the mean score of the pretest was 58.27, while the posttest mean increased to 64.80, indicating an improvement in participants' performance after the intervention. With 15 participants involved, the standard deviation decreased from 6.088 in the pretest to 4.945 in the posttest, suggesting that scores became more consistent

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after the intervention. Additionally, the smaller standard error of the mean in the posttest (1.277 compared to 1.572) indicates a more precise estimate of the posttest average. Overall, the data suggest a positive effect of the intervention, though a paired samples t-test is needed to determine if the difference is statistically significant.

Table 3. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	pretest & posttes	15	.699	.004

Table 3 presents the correlation between the pretest and posttest scores. The correlation coefficient is **0.699**, which indicates a **strong positive relationship** between the two sets of scores. This means that participants who scored high on the pretest also tended to score high on the posttest. The significance value (**Sig. = .004**) is less than 0.05, which means the correlation is **statistically significant**. In other words, there is a meaningful relationship between the pretest and posttest scores, suggesting consistency in participants' performance over time.

Table 4. Paired Samples Test

| | Paired Differences | | | | | | | |
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	95% Confidence Interval of the Difference Upper	t	df	Sig. (2-tailed)
Pair 1 pretest - posttes	-6.533	4.406	1.138	-8.973	-4.094	-5.743	14	.000

Table 4 shows the results of the paired samples t-test comparing pretest and posttest scores. The mean difference between the two tests is **-6.533**, indicating that posttest scores were higher than pretest scores. The t-value is **-5.743** with **14 degrees of freedom (df)**, and the **p-value (Sig. 2-tailed)** is **.000**, which is **less than 0.05**, meaning the difference is **statistically significant**. The 95% confidence interval for the difference ranges from **-8.973 to -4.094**, confirming that the true mean difference is not zero. These results suggest that the improvement in scores from pretest to posttest is significant and unlikely to be due to chance. It can be said that anagram exercise effect the students spelling proficiency.

From the finding above, anagram-based instruction significantly improves students' spelling proficiency compared to before and after the treatment. The paper employs a pre-experimental design using pre- and post-tests to measure learning outcomes, aiming to provide empirical support for this claim. From the defender's perspective, the study offers a compelling initial argument in favor of using anagrams as a teaching tool. They assert that the methodology is appropriate for classroom settings, especially where randomization

is not feasible, and point to the observed statistically significant improvement as evidence of the intervention's effectiveness.

Supporting this position, the study's quantitative results show an increase in the mean score from **58.27** (pretest) to **64.80** (posttest), with a standard deviation reduction from **6.088** to **4.945**, suggesting improved performance and reduced variability among students. The paired samples t-test reveals a **mean difference of -6.533**, a **t-value of -5.743**, and a **p-value of .000**, indicating that the improvement is statistically significant. Moreover, the paired samples correlation is **0.699** (p = .004), suggesting a strong positive relationship between pretest and posttest scores. These results lend initial quantitative support to the claim that anagram-based instruction has a positive effect on students' spelling outcomes.

CONCLUSION

The insights gained through this study have revealed significant findings regarding the impact of anagram-based learning on students' spelling abilities. A **pre-experimental design** was employed to assess the effectiveness of this innovative pedagogical approach, utilizing pre- and post-intervention testing to measure spelling proficiency. The results indicate that engaging students in anagram exercises led to statistically significant improvements in their spelling skills, thereby addressing the central research problem of how alternative strategies could enhance spelling proficiency among learners. The implications of these findings are noteworthy, as they suggest that integrating anagram-focused activities into the curriculum could provide educators with a valuable tool to foster deeper cognitive engagement and literacy development in. Practically, this research underscores the necessity for instructional approaches that move away from traditional rote memorization towards more interactive and stimulating methods of teach (Hijjatul Qamariah & Sri Wahyuni, 2018). Moreover, the enhanced spelling performance observed among participants reinforces the concept that learning through play and creativity can yield substantial educational benefits(Elimelech & Aram, 2019). In light of these findings, future investigations should explore the long-term effects of anagram-based learning, specifically its application across diverse age groups and populations to confirm the efficacy of such interventions in varying educational contexts. The examination of individual differences among learners, such as cognitive styles and prior knowledge, could also enrich the understanding of how best to apply anagram-based approaches in classrooms. Furthermore, longitudinal research could provide valuable insights into the sustained impact of anagram exercises on spelling and overall literacy development. Ultimately, the findings present a compelling case for reconsidering traditional educational paradigms and suggest pathways for more effective teaching methodologies that embrace the evolving nature of learning. Such initiatives are crucial to optimizing educational outcomes and preparing students for success in an increasingly complex linguistic landscape. This research enriches the existing literature on spelling acquisition and emphasizes the value of alternative instructional strategies in fostering student engagement and learning. Therefore, future researchers are encouraged to delve deeper into the

unexplored potential of anagram-based methodologies to unlock further advancements in literacy education.

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