



Effects of Semantic-Mapping and Scrabble-Game Strategies on English Spellings and Pronunciations among Secondary School Students in Okene, Kogi State, Nigeria

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Abstract

Students' failure in external examinations has been attributed to their poor vocabulary base, exacerbated by teachers' poor instructional strategies. This study therefore, examined a comparative effect of semantic-mapping, scrabble-game and the combination of both semantic-mapping and scrabble-game on vocabulary achievement of secondary school students in Okene, Nigeria. The objectives were to find out: (i) the general achievement of secondary school students in English spelling and pronunciation in Okene, Nigeria; (ii) the effect of scrabble-game, semantic-mapping and combination of both on the achievement in spelling; (iii) the effect of scrabble-game, semantic-mapping and combination of both on the achievement in pronunciation in Okene, Nigeria. The study adopted a quasi-experimental design of pre-test, post-test and control group using four by two by two factorial design (4x 2), involving three experimental groups and one control group. Four public secondary schools and all the students in JSS II intact classes served as the sample for this study using stratified random sampling technique. An achievement test on vocabulary was adapted from the National Examinations Council and state examinations past questions as instrument for this study. Percentage, Mean and Standard Deviation and Analysis of Covariance (ANCOVA) were used to answer and test the research questions and hypotheses respectively. The findings of the study indicated the general achievements in vocabulary of the students to be low before the treatment (pre-test) but increased averagely after treatment (post-test). Significant effects existed among scrabble-game, semantic-mapping and combination of scrabble and semantic-mapping on students' achievement in spelling, but not favoring semantic mapping as a single technique; Scrabble-game, semantic-mapping and combination of both had effect on secondary school students' achievement in pronunciation, The study therefore, recommended that teachers should make use of the combination of Semantic-mapping and Scrabble-game strategy to facilitate effective English vocabulary learning.

Key words: Achievement, Language Teaching, Scrabble-game Semantic-mapping, Vocabulary

Introduction

Vocabulary as the foundation on which communication is built could be considered very key to language learning without which it might be difficult to express ideas, emotions, or feelings appropriately, especially within and outside the classroom environment. Vocabulary is important to English Language learners (ELLs) because it forms the foundation of communication. Learners of English as a second language need a robust vocabulary to express their thoughts, ideas, and feelings effectively in English, both in oral and written. Insufficient vocabulary would make learners struggle to pass their messages across accurately and clearly (Nation, 2001). Vocabulary learning covers linguistic elements such as, spelling, pronunciation, morphological structure, lexico-syntax and lexico-semantic which all serve as the rubrics upon which vocabulary thrives. On the one hand, ability to spell enhances word recognition, recall and comprehension; on the other hand, good pronunciation aids in auditory recognition of vocabulary which enable learners to process spoken words effectively (Ehri, 2005; Darcy, 2018). Learners' vocabulary knowledge would become robust, enabling them to develop both receptive (listening/reading) and productive (speaking/writing) skills of English Language. Schmitt (2010) and Folse (2006) further asserted that the ability to comprehend spoken and written English depends heavily on vocabulary knowledge. Students need to understand vocabulary in context to comprehend conversations, lectures, readings, and instructions across different subjects and situations. This will impact their academic performance; proficiency in English vocabulary is closely connected to academic achievement (Adeniyi-Egbeola, 2006).

Basic education remains the foundation upon which learning opportunities for continuous education is laid. Students' poor performance at the basic level of education, especially in English language has led to public outcry among educators, thereby, making scholars redirect efforts towards identifying factors responsible for the students' performance trend and



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by paying attention to probable solutions. The importance of vocabulary in English language learning might have accounted for the special attention the Federal Government of Nigeria (FGN) paid to it by advancing the purpose of its inclusion in the National English curriculum. The curriculum spells out the objectives of learning vocabulary at the junior secondary level to cover effective use of vocabulary. The expectation is that at the completion of basic education, effective understanding and utilizing of the language skills would have been achieved. However, despite its importance, it cannot be said that secondary school students have good mastery of vocabulary. Lack of this knowledge might be responsible for students' poor performance in WASSCE over the years (WAEC, 2023). To achieve effective teaching and learning of English vocabulary, good teaching strategies should be adopted. If not, learning of vocabulary becomes less interesting to the students. There are a lot of strategies that teachers could be employed to teach vocabulary. These include contextual learning, repeated exposure, multisensory approach, word parts, meta-cognitive approach, semantic-mapping and scrabble-game among others. For instance, semantic-mapping is one of the strategies used by teachers of language to teach concepts through graphics representation. Khoii and Sharifafar (2013) stated that semantic-mapping is a visual strategy that enhances vocabulary development. Scrabble-game, on the other hand, is a game of word letter tiles used by the player to create words on a game board. Each of the players pulls tiles randomly from a pool and takes turns placing them on the board to form words. The tiles have different point values, and the aim is to maximize points by intentionally placing tiles on bonus squares and creating longer or higher-scoring words. The game typically consists of a 15x15 grid game board, but variations with different board sizes exist. Players can only create words that are valid based on an agreed dictionary, and they must connect their words to existing ones on the board. The game continues until all tiles have been drawn and one player uses up all their tiles or no more valid words can be formed (Klimova, 2015). Olajide, Adeniyi-Egbeola and Badru (2020) explained that there is no technique or strategy of teaching that is all-encompassing, and that all the different strategies have their advantages and disadvantages. Therefore, a blended strategy may be required in order to bring about effective teaching and learning, since the advantage of one strategy can be used to address the shortcomings of the other. How all these techniques influence Secondary School students' vocabulary achievement in Okene, Nigeria is of both social and academic importance

Purpose of the Study

The general purpose of this study is to find out the comparative effects of semantic-mapping, scrabble-game and the combination of both semantic-mapping and scrabble-game on English vocabulary achievement of secondary school students in Okene, Nigeria. Specifically, the research attempted to find out:

1. The general achievement of secondary school students in English vocabulary (spelling, pronunciation) in Okene, Nigeria;
2. The effect of scrabble-game, semantic-mapping and combination of scrabble-game and semantic-mapping on the achievement in spelling among secondary school students in Okene, Nigeria.
3. The effect of scrabble-game, semantic-mapping and combination of scrabble-game and semantic-mapping on the achievement in pronunciation among secondary school students in Okene, Nigeria.

Research Questions

1. What is the general achievement of secondary school students in English vocabulary (spelling, pronunciation in Okene, Nigeria)?
2. What is the effect of scrabble-game, semantic-mapping and combination of scrabble-game and semantic-mapping on secondary school students' achievement in spelling in Okene, Nigeria?
3. What is the effect of scrabble-game, semantic-mapping and combination of scrabble-game and semantic-mapping on secondary school students' achievement in pronunciation in Okene, Nigeria?

Research Hypotheses

The following null hypotheses were formulated and tested in this study.

H₀₁: There will be no significant effect of scrabble-game, semantic-mapping and combination of scrabble-game and semantic-mapping on the achievement of secondary students' spelling in English in Okene, Nigeria.

H₀₂: There will be no significant effect of scrabble-game, semantic-mapping and combination of scrabble-game and semantic-mapping on the achievement of secondary school students' pronunciation in English in Okene, Nigeria.



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H₀₃: There is no significant interaction effect of scrabble-game, semantic-mapping, combination of scrabble-game and semantic-mapping and gender on secondary school students' English vocabulary (spelling, pronunciation, morphological structure, lexico-syntax and lexico-semantics) achievements in Okene, Nigeria.

Methodology

This study is an experimental design which aimed at examining the comparative effects of semantic-mapping, scrabble game and the combination of both semantic-mapping and scrabble game on English vocabulary achievement of secondary school students in Okene, Nigeria. The population for this study was all the Junior Secondary School Students in Okene, Nigeria. The target population for this study consisted of all the Junior Secondary Two (2) students (JSS II) in Okene, Nigeria. The study adopted a quasi-experimental design of pre-test, post-test and control group design using a four by two factorial design (4 × 2) involving three experimental groups and one control group. Stratified random sampling technique was used to select four public secondary schools in Okene, Nigeria. Also, all the students of one of the JSS II intact classes from the selected schools served as the sample for this study. An achievement test on vocabulary titled: Students Achievement Test in Vocabulary Development (SATVOD) was adapted from the National Examinations Council's and state examinations past questions as instrument for this study. The gathered data was graded using a prepared marking scheme. Percentage, Mean and Standard Deviation and Analysis of Covariance (ANCOVA) were used to answer and test the research questions and hypotheses respectively.

Descriptive Statistics

Table 1: Distribution of the Respondents According to Gender

Quasi-experimental Group	Gender		
	Male	Female	Total
Control Group	28 (52.8%)	25 (47.2%)	53 (100%)
Treatment Group I (Scrabble-Game)	15 (38.5%)	24 (61.5%)	39 (100%)
Treatment Group II (Semantic-Mapping)	24 (39.3%)	37 (60.7%)	61 (100%)
Treatment Group III (Scrabble-Game and Semantic-Mapping)	26 (43.3%)	34 (56.7%)	60 (100%)
Total	93 (43.7%)	120 (56.3%)	213 (100)

The table 1 above shows the frequency distribution of the participants based on gender.

Answering Research Questions

To answer all the research questions raised in this study, table 2 was used to draw inferences on students achievement in the test conducted.

Table 2: Inference for Students Achievement Levels

Achievement Levels	Scores Description
High	70 and above
Average	45 – 69
Low	0- 44

Research Question 1: *What is the general achievement of secondary school students in English vocabulary in Okene, Nigeria?*

Table 3: General Achievements in English Vocabulary by Secondary School Students in Okene, Nigeria

	Mean	Standard Deviation	Inference
Vocabulary (Pre-test)	37.80	9.87	Low
(Post Test)	58.18	15.08	Average

Table 3 above shows the means and standard deviations of the respondents' general achievement in vocabulary.

Research Question 2: *What is the achievement of secondary school students in spelling in English in Okene, Nigeria?*

Table 4: Achievements in English Spelling by Secondary School Students in Okene, Nigeria

Aspect of Vocabulary	Mean	Standard Deviation	Inference
Spelling (Pre-test)	56.62	21.63	Average
(Post-Test)	64.36	19.53	Average

Table 4 above shows the mean and standard deviation of the respondents' general achievement in English spellings. T



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Research Question 3: *What is the general achievement of secondary school students in pronunciation in English in Okene, Nigeria?*

Table 5: General Achievements in English Pronunciation by Secondary School Students in Okene, Nigeria

	Mean	Standard Deviation	Inference
Pronunciation(Pretest)	37.37	16.90	Low
(Post-test)	48.40	18.46	Average

Table 5 above shows the mean and standard deviations of the respondents' general achievement in English pronunciation.

Hypothesis Testing

A total of three null hypotheses were formulated and tested in this study using an Analysis of Covariance (ANCOVA) statistical test. The critical value (α) for acceptance/rejection of null hypothesis in this study was 0.05.

Hypothesis One: *There is no significant effect of scrabble-game, semantic-mapping and combination of scrabble-game and semantic-mapping on the achievement of the secondary school students in spelling.*

Table 6: Analysis of Covariance Showing the Difference in the Achievement Level of Secondary School Students Taught with Scrabble-Game, Semantic-Mapping and Combination of Scrabble-Game and Semantic-Mapping and those taught with the Conventional Method on Spelling.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	4311.276	4	1077.819	2.929	.022
Intercept	103689.752	1	103689.752	281.824	.000
Pretest Spelling	.318	1	.318	.001	.977
Group	4246.030	3	1415.343	3.847	.010
Error	76528.161	208	367.924		
Total	963300.000	213			
Corrected Total	80839.374	212			

The table 6 above shows that there is a significant effect of scrabble-game, semantic-mapping and combination of scrabble-game and semantic-mapping on the achievement score of the participants in spelling because the p-value ($F_{3,212} = 3.847$, p-value = <0.05). Hypothesis one is therefore rejected. This implies that significant effects existed among scrabble game, semantic mapping and combination of scrabble-game and semantic-mapping on students' achievement in spelling. In order to ascertain the spread of effect, a post-hoc comparison of the post-treatment scores was carried out to identify the exact nature of the differences between the treatment groups and the results are presented in table 10 below.

Table 7: Post—hoc Analysis Showing the Post-test Mean Scores of the Quasi-experimental Groups in Spelling

Group	N	Subset for alpha = 0.05	
		1	2
Control group	53	60.1887	
Treatment group II (Semantic mapping)	61	60.3279	
Treatment group III (Combination)	60		68.0000
Treatment group I (Scrabble game)	39		70.7692

From the table 7 above, the mean scores of the participants in the scrabble group were significantly higher than the mean scores of the participants in the control group and semantic-mapping groups. However, it was not significantly different from the mean scores of the participants in the group with combination of both treatment one and two.

Hypothesis Two: *There will be no significant effect of scrabble-game, semantic-mapping and combination of scrabble-game and semantic-mapping on the achievement score of the participants in pronunciation.*



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Table 8: Analysis of Covariance Showing the Difference in the Achievement Level of Secondary School Students Taught with Scrabble-Game, Semantic-Mapping and Combination of Scrabble-Game and Semantic-Mapping and those taught with the Conventional Method on Pronunciation.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	25537.674	4	6384.418	28.424	.000
Intercept	83112.662	1	83112.662	370.025	.000
Pre-test_Pronunciation	61.587	1	61.587	.274	.601
Group	25537.488	3	8512.496	37.898	.000
Error	46719.603	208	224.613		
Total	571300.000	213			
Corrected Total	72257.277	212			

The table 8 above shows that there is a significant effect of scrabble-game, semantic-mapping and combination of scrabble-game and semantic-mapping on the achievement score of the participants in pronunciation because the p-value is less than 0.05 ($F_{3,212} = 37.898$, $p\text{-value} < 0.00$). Hypothesis two is therefore rejected. This implies that scrabble-game, semantic-mapping and combination of both do have effect on secondary school students' achievement in pronunciation. In order to specify the aspects of the effects, a post-hoc comparison of the post-treatment scores was carried out and the results are presented in table 9 below.

Table 12: Post—hoc Analysis Showing the Post-test Mean Scores of the Quasi-experimental Groups in Pronunciation

Group	N	Subset for alpha = 0.05		
		1	2	3
Control group	53	35.811		
Treatment group II (Semantic-mapping)	61		40.000	
Treatment group I (Scrabble-game)	39		47.179	
Treatment group III (Combination)	60			65.333

From the table above, the mean scores of the participants in the control group were significantly lower than the mean scores of the participants in all of the treatment groups. However, the mean scores of the participants in the combination group was significantly the highest while the mean scores in the semantic-mapping and scrabble-game group did not significantly differ from each other. This implies that the combination of scrabble game and semantic-mapping have more significant effect on students' achievement in pronunciation than the two methods separately.

Discussion of Findings

General Achievement of Secondary School Students in English Vocabulary in Okene, Nigeria

The finding of this study indicated that the pretest results of students' achievement was low with 37.80% while the Post-test achievement was average with 48.18% which is still considered inappropriate for the knowledge of vocabulary generally, being a building block for language learning. However, the improvement recorded over the short period between the pretest and posttest proved that the teaching strategies would record higher impact if used continuously. At the spelling, pronunciation, the achievement was high with a mean score of 64.36%, 65.3%, respectively, favoring the combination of scrabble-game and semantic-mapping as the right teaching strategy. Semantic-mapping and the conventional strategies did not indicate significant effect as individual strategies. This implies that scrabble-game and combination of scrabble game and semantic-mapping strategies are good for the enhancement of students' general achievement in English vocabulary learning. This finding is supported by Umar and Ma'aji (2018) who explained that students taught with scrabble-based vocabulary instruction achieved better than their peers taught using other strategies in spelling. According to the scholars, this is because the game strategy encouraged visual learning, memory reinforcement, and teamwork, while enhancing vocabulary mastery. Also, Afolabi and Olagunju (2021) affirmed this finding by noting that scrabble game strategy is the most effective word games for vocabulary learning among primary school pupils. Furthermore, the finding is supported by Nnamani and Oyibe (2022) who posited that students' abilities to construct, pronounce, and explain new words more confidently are hinged on their exposure to vocabulary learning using scrabble-game instruction.



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Backing the complementary role of semantic-mapping in vocabulary learning, particularly when combined with scrabble game, Adeniyi-Egbeola noted it to be more effective in vocabulary achievement. Adeniyi-Egbeola (2006) supported this by stressing that the combination of two or more strategies goes a long way in enhancing vocabulary learning. She explained using multi-sensory and meta-cognitive approaches of teaching under-achieving secondary school students' vocabulary. To understand the contributory role of semantic-mapping when combined with scrabble game, Kholi and Sharifafar (2013) stated that semantic-mapping is a virtual strategy that enhances vocabulary development. Similarly, the finding is supported by Palma (2023) who pointed that the use of semantic mapping strategy is effective as a strategy to enhance vocabulary development and retention among learners of English Language. This finding is not far from the position of the proponents of schema, semantic field and componential analysis theories that are of the opinions that knowledge construction can be well aided by previous experiences in connecting the relationships among words. This is core to the use of semantic-mapping and scrabble-game as teaching strategies.

The Effects of Scrabble-game, Semantic-mapping and the combination of Scrabble-game and Semantic-mapping on the Achievement in Spelling of Secondary School Students in Okene, Nigeria

It was found in this study that significant effects existed among scrabble-game, semantic-mapping and combination of scrabble-game and semantic-mapping on students' achievement in spelling, with scrabble-game and combination of scrabble-game and semantic-mapping having significantly higher effect but not semantic-mapping as a lone. This finding corroborates the finding of Adeniyi-Egbeola's (2006) position that combining two strategies go a long way in enhancing effective vocabulary development. The finding also supports Beck, Mckeown and Kucan (2022) who explained that using combination of strategies to engage learners help them to retain words. However, the finding negates Palma's (2023) position that semantic-mapping as a separate teaching strategy makes students to be active in the classroom and enhances their achievement in vocabulary.

The Effects of Scrabble-game, Semantic-mapping and the combination of Scrabble-game and Semantic-mapping on the Achievement in Pronunciation of Secondary School Students in Okene, Nigeria

It was found from this study that scrabble-game, semantic-mapping and combination of both had effect on secondary school students' achievement in pronunciation. However, the combination of both scrabble-game and semantic-mapping had the most effect on pronunciation, although scrabble-game as a single strategy is equally very effective in the teaching of pronunciation. This affirms Lee's (2024) submission that interactions of strategies promote pronunciation in learners than using a single strategy. However, the finding negates Renata, Rija and Silva (2017) who pointed out that semantic-mapping strategy as an individual strategy could be appropriate for teaching pronunciation. This is also corroborated in the Constructivist theory which underscores social interaction as a basis for effective learning. So, since Scrabble game promotes discussion among students, improvement in pronunciation seems guaranteed.

Conclusion

This study examined the comparative effects of semantic-mapping and scrabble-game on English vocabulary achievement of secondary school students in Okene, Nigeria. From the findings of this study, it can be concluded that the general achievement of secondary school students in English Language vocabulary was average in Okene, Nigeria with 58.18% which is considered not good enough for the knowledge of vocabulary, being the building block for language learning. There is therefore a need for improved efforts on how vocabulary is taught to secondary school students, especially by activating students' schema to guide teaching. It can also be concluded from the findings of this study that scrabble-game and combination of semantic-mapping and scrabble-game have significant effect on the secondary school students' achievement in English vocabulary. However, semantic-mapping did not establish such an effect as a single strategy. At the vocabulary components level, it can be concluded that scrabble-game and combination of scrabble-game and semantic-mapping had significant effects on spellings and pronunciation, while semantic-mapping alone did not establish such effects.

Recommendations

1. Teachers and stakeholders should intensify efforts on how vocabulary is taught to secondary school students, especially by activating students' schema to guide teaching.
2. A combination of semantic-mapping and scrabble-game strategies should be encouraged in schools



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References

- Adeniyi-Egbeola, F. O. (2006). *Comparative effects of multisensory and metacognitive instructional approaches of English vocabulary achievement of under-achieving Nigerian secondary students*. (Unpublished Ph.D. Thesis) University of Ilorin, Ilorin, Nigeria
- Darcy, I. (2018). Powerful and effective pronunciation instruction: how can we achieve it? *The CATESOL Journal*, 30, 1, 13-45.
- Ehri, L. C. (2005). Learning to read words: theory, findings, and issues. *Scientific Studies of Reading*, 9, 2, 167-188.
- Folse, K. S. (2006). *Vocabulary myths: Applying second language research to classroom teaching*. Ann Arbor, MI, USA, University of Michigan Press, Michigan, USA.
- Khoo, R. & Shariff, S. (2013). Memorization versus semantic mapping in L₂ vocabulary acquisition. *Journal of Language Teaching and Research*, 2, 3, 45-55.
- Klimova, B. (2015). *Games in the teaching of English*. Brnenska, Czech. University of Hradec Kralove, Czech Republic
- Lee, R. (2024). The National Literacy Strategy and pupils with special educational needs. *British Journal of Special Education*, 31, 3, 133-139.
- Machelke, M. (2023). *Explicit vocabulary instruction using the POSSUM approach*. Retrieved from: <https://irrc.education.uiwa.edu>
- Nation, I.S.P. (2001). *Learning vocabulary in another language*. London: Cambridge University Press.
- Olajide, S. B., Adeniyi-Egbeola, F. O., & Badru, S. A. (2020). Teaching vocabulary. In R. A. Lawal (ed.). *Teaching Methodology in the Humanities*. Ilorin: Department of Arts Education, Faculty of Education, University of Ilorin, Nigeria
- Palma, J. L. (2023). Semantic mapping and its effect on vocabulary skill development of grade 10 students JESCAL. *International Journal of Advanced Multidisciplinary Studies (IJAMS)* 3, 3
- Renata, H. A., Rija, M., & Silva, P. G. (2017). The use of semantic mapping strategy in language learning. *Journal of Language Studies*, 12, 3, 45-60.
- Schmitt, N. (2010). *Vocabulary in language teaching*. London: Cambridge University Press.