

The Impact of Kahoot on Improving Compound Noun Usage Among Libyan Secondary Students: A Quasi- Experimental Study

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Keywords	Abstract
Compound Nouns, Kahoot, Quasi-Experimental Study, And Libyan Secondary Students.	The current study investigated the effect of Kahoot game on first secondary students' use of compound nouns and improve their writing. A class of forty 16 years old students were asked to participate in pre-post tests about compound nouns. The main aims were to investigate how Kahoot affect first secondary students' use of compound nouns and to explore the difficulties first-year students encounter when using compound nouns. Participants in this quantitative study were first secondary students in Alkhoms. The main conclusion was that students' ability to recognize and classify compound words had significantly improved (e.g., $p<0.0001$). According to the study, after using Kahoot, students' scores increased. As a result, the study's findings demonstrated that the students' writing abilities had improved. The majority of students were able to steer clear of the pre-test errors. They obviously learned more about compound nouns, and thanks to Kahoot game.

تأثير تطبيق « كاهوت » على تحسين استخدام الأسماء المركبة لدى طلاب المرحلة الثانوية الليبيين: دراسة شبه تجريبية
نجاح عبدالله البلعزي - قسم اللغة الإنجليزية - كلية التربية - جامعة المرقب - ليبيا

المخلص	الكلمات المفتاحية
يتناول البحث الحالي مدي تأثير لعبة كاهوت علي استخدام طلبة الصف الأول ثانوي للأسماء المركبة ودوره في تحسين كتابتهم. فصل دراسي من 16 طالب ليبي في المرحلة الثانوية بمدرسة محمد بن ابراهيم بكعام -الخمس شاركوا في الاختبار القبلي والبعدي حول الأسماء المركبة. هذا البحث يهدف الي معرفة مدي تأثير لعبة كاهوت في تحسين مستوي الطلاب. وكذلك كشف الصعوبات التي يواجهها الطلاب من خلال الاختبارين القبلي والبعدي. اعتمدت هذه الدراسة الكمية الشبه تجريبية علي منهج الاختبار القبلي و البعدي في جمع المعلومات. أظهرت النتائج تحسنا واضحا و ملحوظا لدي الطلاب من ناحية استخدامهم للأسماء المركبة حيث كانت القيمة الاحتمالية (>0.0001). كما أظهرت النتائج أيضا الصعوبات التي واجهها الطلاب في الامتحان القبلي والتي من خلال لعبة كاهوت تمكنوا من تجنبها في الاختبار البعدي.	الأسماء المركبة، الكاهوت، دراسة شبه تجريبية، طلاب المرحلة الثانوية بليبيا.

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1. Introduction

Learning English as a foreign language, or EFL, is crucial because it enables students to communicate in English in everyday contexts including travelling, working, studying, and interacting with foreigners. Developing EFL abilities can lead to new chances because English is widely utilized in international business, technology, and education. Additionally, it fosters personal development by boosting your self-esteem, expanding your knowledge, and enhancing your comprehension of world information. More significantly, acquiring EFL lays the groundwork for abilities like speaking, writing, listening, and reading, all of which contribute to more effective and transparent communication. Compound nouns are a prevalent and helpful aspect of English, therefore learning them is crucial. When two or more words combine to form a single meaning, a compound noun is created. EFL Libyan students encounter many difficulties in learning EFL in general, particularly compound nouns.

In the evolving landscape of education, engaging students through interactive platforms has become essential. Kahoot, a game-based learning platform, offers a dynamic way to enhance language skills, particularly in understanding compound nouns. Compound nouns, which combine two or more words to create a new meaning

(e.g., "toothbrush," "notebook"), are crucial for secondary students as they expand vocabulary and improve language comprehension. Integrating Kahoot into lessons on compound nouns can transform traditional teaching methods into an engaging experience.

Both teachers and students can benefit from using Kahoot in the classroom in a number of ways. First, due of its game-like structure, which draws students in and makes learning more fun and inspiring, it raises engagement. Second, Kahoot encourages active learning and self-evaluation by giving students instant feedback so they can see whether their answers were correct. Additionally, Kahoot promotes teamwork by allowing kids to play in groups, which fosters the development of cooperation and communication skills. Lastly, Kahoot is available on a variety of devices, enabling flexible learning at home and in the classroom. While the benefits of Kahoot game are well-documented, there is limited evidence on its long-term impact on students improvement on compound nouns.

2. Implementing Kahoot in Lessons

Teachers can create customized quizzes focused on identifying, defining, and using compound nouns. By incorporating multimedia elements like images and sounds, lessons become

more relatable and impactful.

Furthermore, utilizing Kahoot to teach compound nouns not only enhances students' understanding but also makes the learning process interactive and enjoyable. This approach prepares them to use language more effectively in both academic and real-world contexts.

3. Literature Review

Recent studies suggest that digital learning tools such as Kahoot can improve both student engagement and learning outcomes. Modern language education increasingly relies on a synergy between technological tools and interactive pedagogical strategies to enhance learner outcomes. Derakhshan, Salehi, and Rahimzadeh (2015) highlight the significant advantages of integrating Computer-Assisted Language Learning (CALL), noting that it fosters increased motivation and provides personalized, immersive environments for contextual practice. However, they caution that technology should not replace the human element, as an over-reliance on CALL can diminish teacher-student interaction and widen achievement gaps due to unequal access.

This need for a balanced, engaging approach is further supported by Asyiah (2017), whose research into vocabulary mastery emphasizes that

student perceptions and interactive methods—such as games—are crucial for success. By highlighting the role of classroom environment and teacher support, Asyiah reinforces the conclusion drawn by Derakhshan et al.: while innovative tools and strategies like CALL and gamified instruction are powerful, they are most effective when integrated into a supportive, traditional framework that prioritizes the psychological and contextual needs of the learner.

Technology-based vocabulary learning has also been examined through mobile applications. Gürkan (2018) used interviews and observations to study learners using a mobile vocabulary app. The findings indicated that the app improved vocabulary retention and increased engagement. Gürkan highlighted features such as accessibility, interactivity, and personalized learning experiences as key factors behind its effectiveness, suggesting that mobile-assisted language learning can improve student satisfaction and learning results. Similarly, Almanar (2019) investigated Kahoot as a game-based learning tool. Using a mixed-methods approach, the study found improvements in students' vocabulary acquisition, and it linked these gains to Kahoot's immediate feedback and motivating competitive format.

Beyond vocabulary, Kahoot has also shown positive effects on engagement and achievement in broader educational contexts. Wang, Zhu, and Sætre (2020) conducted a quantitative study in higher education to examine Kahoot's influence on participation and academic performance. They reported that Kahoot increased student engagement, reflected in higher participation and enthusiasm during lessons. The study also found a positive relationship between Kahoot use and better learning outcomes, leading the researchers to conclude that gamified tools can make learning environments more interactive and responsive. Similarity to Wang and Tahir (2020), Kahoot! often lowers student anxiety while improving learning performance, classroom dynamics, and student/teacher attitudes. Despite these advantages, the authors point out that pedagogical flaws, particularly the speed-based scoring system that might promote impulsive guesswork over in-depth contemplation, and technical problems, such as poor internet connectivity and trouble reading projected screens, can limit the platform's efficacy. In the end, even though the app is very efficient in increasing student engagement, its effectiveness depends on a robust infrastructure and the teacher's capacity to strike a balance between the demands of competition and relevant

instructional material. In a related study, Çil (2021) used a quasi-experimental design to compare Wordwall.net with traditional vocabulary instruction. The results showed that students using Wordwall.net achieved significantly higher vocabulary gains, reinforcing the value of digital tools in EFL vocabulary learning (Çil, 2021).

In conclusion, the literature supports using different platforms including Kahoot as an engaging educational game to improve learning. When teachers use Kahoot thoughtfully, they can create an interactive classroom environment that encourages cooperation, provides real-time feedback, and promotes active student participation. In particular, Kahoot may help secondary students strengthen their understanding and mastery of topics such as compound nouns by making practice more enjoyable and more engaging.

4. The Hypotheses of the Study

When developing hypotheses for a study on the effect of the Kahoot game on first secondary students' use of compound nouns, the teacher might consider the following:

- 1) **Hypothesis 1 (H1)** states that students who play Kahoot games will show a statistically significant gain in their capacity to recognize and utilize compound nouns in comparison to those who do not.

- 2) **Hypothesis 2 (H2):** Students' ability to use compound nouns in their writing will be positively correlated with how often they play the Kahoot game.
- 3) **Hypothesis 3 (H3):** Students' confidence in utilizing compound nouns in both spoken and written language will significantly rise as a result of using Kahoot.

These hypotheses provide a framework for investigating the educational impact of gamification, specifically by Kahoot, on language learning.

5. Significance of the Study

The significance of a study on the effect of the Kahoot game on first secondary students in improving their use of compound nouns can be outlined as follows:

1. Mastery of Language & Curriculum Impact

This study bridges the gap between interactive play and academic success by focusing on the specific mastery of compound nouns. By providing evidence of improved grammar skills, the research offers a foundation for curriculum designers to integrate game-based learning into formal language modules, ensuring that educational materials are both effective and modern.

2. Student Motivation & Gamification Research

The research reinforces the "gamification effect" by demonstrating how Kahoot boosts student engagement and motivation. By documenting these behavioral changes, the study adds valuable data to the growing body of research on educational games, proving that emotional investment is key to effective information retention.

3. Innovative & Inclusive Teaching

The findings advocate for a shift toward dynamic teaching methodologies that accommodate diverse learning styles. By showing how technology makes language learning more accessible and inclusive, the study encourages educators to move beyond traditional lectures and adopt strategies that meet the needs of all students.

4. Foundation for Future Inquiry

Finally, this study serves as a starting point for future exploration. It paves the way for researchers to investigate how other emerging technologies and digital tools can be applied to different areas of language acquisition and secondary education.

6. Problem and Questions of the Study

Most Libyan secondary students

do face difficulties in learning EFL in general but also in using the appropriate structure (compound-nouns) in their writing. Those students are unable to understand the meaning of compound nouns, and then they use them incorrectly. The researcher here found that Kahoot will be the perfect tool to apply in the classroom to improve the students' proficiency when they use compound nouns. There are several benefits to using Kahoot, and it may be a useful tool for learning in person as well as online. By using virtual learning environments, it improves student interaction. Most students are familiar with Kahoot and can sign up fast because it is already widely utilized in secondary and high school teaching. Additionally, it promotes global learning by enabling participation from students worldwide. Kahoot can also be used to record participation and motivate students to attend class in person. Zoom breakout rooms allow students to play together, and the platform can organize games for big gatherings. Lastly, because producing a quiz is comparable to preparing a Microsoft PowerPoint presentation, Kahoot is simple to use.

Kahoot does, however, have certain drawbacks. First of all, it is not always a good option for classes with a large number of asynchronous students because it is mostly beneficial for synchronous education. Second,

because Kahoot involves preparation, it can take a lot of time to create and utilize, which could cut into instructional time. Third, because Kahoot requires a consistent and dependable internet connection, accessibility may be difficult for certain pupils. Students may find it challenging to fully participate if they do not have reliable internet access.

The present study seeks to answer the following primary questions and prove whether Kahoot affect students' positively or not :

1. How does Kahoot affect first secondary students' use of compound nouns?
2. What are the difficulties that first-year students encounter when using compound nouns?

7. Research Scope

To accomplish the study's goals, a class of forty Libyan secondary students aging 16 at the first year in Emhemmed Ben Ebrahim school at Kaam, Alkhoms, who are studying EFL offered to participate in the experiment with the researcher. All the participants are males and their mother language is Arabic.

Choosing this sample was due to two main reasons; first, The English curriculum becomes considerably more difficult at the first secondary level. Students progress from basic sentence structures to more sophisticated

academic vocabulary. Compound nouns have a significant role in this shift. By selecting this group, the researcher can test the instrument precisely when the subject matter gets difficult. Second, This generation of students is fully immersed in digital culture. First secondary students are typically at the peak age for competitive engagement, in contrast to younger children (who could become sidetracked by the "fun" and forget the "learning") or older students (who might find basic gamification).

8. Methodology

1. Research Design

The current study was designed as a quasi-experimental study with the goal of investigating how Kahoot affects first secondary students' use of compound nouns and exploring the difficulties first-year students encounter when using compound nouns. The majority of quasi-experiments are carried out in field environments where random assignment is either impossible or very problematic. They are frequently carried out to assess how well a treatment-possibly a form of an educational intervention is working.

2. Research Instrument

The gotten data from an experiment served as the foundation for the study. This experiment aimed to measure the level of students before and after the experiment (the intervention),

and how Kahoot affect their achievements. This study also aimed to set the difficulties the students encounter throughout their use of compound nouns. These difficulties could be observed through the pre-post test prepared by the researcher.

3. Collecting Data

Pre-posttest experiment data collection entails several crucial steps. This is a methodical approach that was used to:

1. Determine the goal clearly state the experiment's objective.
2. Choose participants: Determine who the target audience is. Based on the needs of the study, the sample size was chosen.
3. Establish the experiment pre-test: a test was created that gauges the behaviors, abilities, or knowledge the researcher wants to evaluate prior to the intervention.
4. Intervent and organize the treatment or activity that will be used in between the pre-test and post-test.
5. Conduct the pre-test prior to the intervention; administer the pre-test to each participant. Ascertain that every participant experiences the same testing conditions.
- 6 Put the intervention into practice: Execute the planned intervention. Make certain that participants are regularly involved.
7. Conduct the post-test to gauge improvements in knowledge, abilities,

or behaviors following the intervention, conduct the same test or one that is comparable.

8. Gather and analyze data from the pre-test and post-test. To ascertain whether there were any notable changes, examine the data using statistical techniques.

4. Ethical Considerations

To reduce the bias and keep the quality and originality of the research, the researcher followed two main tips in choosing the participants and gathering the data for analysis:

1. Ensure ethical considerations are addressed, including informed consent.
2. Choose an appropriate study design (quasi-experimental design) because it affects participant selection and data timing.

9. Data Analysis

1. Interpreting the Results

After collecting the wanted data, the researcher started to interpret the data in line of the research aims as follows:

- To compare pre-test and post-test results to assess the impact of the intervention (Kahoot game).
- To consider the mistakes and difficulties the students might do and encounter.

2. Reporting the Findings

The findings were summarized in a clear and concise manner. Two tables and one chart were included if necessary to illustrate any change. Then, pre-post writing test scores were analyzed as quantitative data using the Excel with paired t-test. The quantitative data analysis was used to compare the scores of the pre-post tests.

Findings Regarding How Kahoot Affect First Secondary Students' Use of Compound Nouns

When comparing the pre-test and post-test, most students showed a marginally significant improvement in their scores. The pre-post test results and ratios (of the total score) are displayed in table 1.1:

Table1.1. Pre-Post Test Results with Ratios.

Students No	Pretest Grade	Ratio %	Posttest Grade	Ratio
Student 1	24	80%	25	83.3%
Student 2	21	70%	21	70%
Student 3	26	86.6%	28	93.3%
Student 4	23	76.6%	25	83.3%
Student 5	25	83.3%	22	73.3%
Student 6	4	13.3%	11	36.6%
Student 7	7	23.3%	21	70%
Student 8	9	30%	22	73.3%
Student 9	8	26.6%	21	70%
Student10	22	73.3%	26	86.6%
Student 11	4	13.3%	18	60%
Student 12	7	23.3%	27	90%
Student 13	3	10%	11	36.6%
Student 14	5	16.6%	26	86.6%
Student 15	11	36.6%	26	86.6%
Student 16	21	70%	29	96.6%
Student 17	22	73.3%	28	93.3%
Student 18	25	83.3%	26	86.6%
Student 19	23	76.6%	26	86.6%
Student 20	26	86.6%	27	90%
Student 21	18	60%	24	80%
Student 22	20	66.6%	26	86.6%
Student 23	25	83.3%	26	86.6%
Student 24	11	36.6%	18	60%
Student 25	10	33.3%	19	63.3%
Student 26	21	70%	23	76.6%
Student 27	14	46.6%	18	60%
Student 28	20	66.6%	23	76.6%
Student 29	22	73.3%	29	96.6
Student 30	25	83.3%	26	86.6%
Student 31	23	76.6%	28	93.3%
Student 32	20	66.6%	27	90%
Student 33	25	83.3%	30	100%
Student 34	26	86.6%	28	93.3%
Student 35	12	40%	20	66.6%
Student 36	10	33.3%	19	63.3%
Student 37	23	76.6%	30	100%
Student 38	8	26.6%	17	56.6%
Student 39	24	80%	29	96.6%
Student 40	21	70%	28	93.3%

The data from Table 1.1 demonstrates that the Kahoot game app intervention successfully improved student performance in using compound nouns. While individual progress varied ranging from slight improvements to achieving perfect scores, the entire class

Moreover, to calculate p-value for the total test (pre vs post), a paired t-test was used on the total scores (pre-post) across n=40 students. The following table explains this:

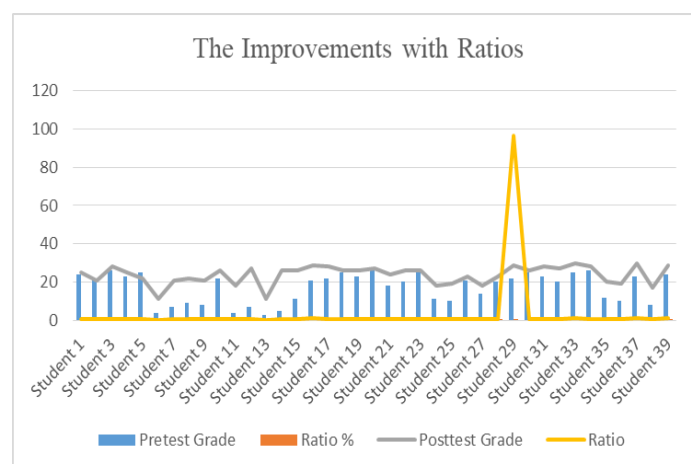
Table 1.2 Data Table with Calculated P-Value

Group	N	Mean Score	Std. Deviation	P-Value (Paired)
Pretest	40	18.03	7.61	--
Posttest	40	24.18	4.88	< 0.0001*

A p-value of less than 0.0001 is regarded as highly statistically significant. This suggests that the improvement from the pretest to the posttest was probably caused by the intervention or instruction given in between the two tests rather than by coincidence. It offers mathematical proof that the Kahoot game was the reason for the score shift.

The following graph shows how much the students' use of compound nouns improved with ratios:

showed a clear upward trend in their grades. By comparing pre-test and post-test results, the researcher confirmed that gamified learning tools effectively boost both individual achievement and overall classroom mastery.



The graph 1. 2. The improvement in some students' grades.

Findings Regarding the Difficulties Encountered by First-Year Students When Using Compound Nouns.

• A Descriptive Analysis

Most students faced the same difficulties when using compound nouns and this is what the researcher observed through the pre-test. According to the analysis of the pre-test and post-test, the students suffered from misunderstanding of the compound nouns. They translated the two words

separately because of their poor comprehension which led them make incorrect translation of the compound nouns, for example; the students did not know the real meaning of the compound words so that they made mistakes in the pretest. It was also because of their incapacity to combine the words correctly. Refer to table 1.2.

Table 1.2. The difficulties in the pre-post test.

Type of Difficulties	Pre-test	Post-test
Translation Literary	√	x
Translation first and second part separately	√	-
Misunderstanding	√	x

Three questions, each with ten items, make up the pre-posttest. According to the pre-test, students most frequently make mistakes on the first question (match). For instance, eleven students erred when they linked the word "tool" to the right response and instead linked it to the word "fly." The word "toolbox" is the right response. However, because of their limited vocabulary, thirteen students had confused the word "tool" with another word. Ten students made a mistake by connecting the word "thunder" with "coat" when the correct word is

"thunderstorm." Similarly, the word "rain" was connected to "storm" when it should have been "raincoat"

The second question (complete) follows, in which the response to the first question is connected to the response to the second. Some students used the first part of the compound nouns in this question, while other students found it difficult to use the compound nouns due to their literary translations. For instance, fifteen students made a mistake by using the word "coat" alone; the correct response is "raincoat." Eleven students made a mistake by using the compound noun "bedroom"; the correct response is "box tool." Eleven students made a mistake by using the word "heart" without the word "beat."

Creating a sentence with compound nouns is the subject of the third question. Many students struggled to form sentences because they did not understand the rules of grammar. For example, a student wrote this incorrect sentence: "She bought a toothbrushes, whereas "Toothbrushes" is plural; "a" should be used with a singular noun. Another student wrote, "He is a basketball player who plays in the court." but "Court" should be more specific, like "basketball court," to clarify the context.

When it comes to matching, completing and writing compound nouns, several common problems and

mistakes done by the students can arise:

1. **Ambiguity:** Some compound nouns can have multiple meanings depending on context, leading to confusion in matching.
2. **Hyphenation:** Variations in hyphenation (e.g., "mother-in-law" vs. "mother in law") can affect recognition and matching.
3. **Word Order:** The order of words in a compound noun can vary (e.g., "swimming pool" vs. "pool for swimming"), complicating matching tasks.
4. **Cultural Differences:** Different regions may use distinct compound nouns (e.g., "soccer" vs. "football"), leading to mismatches.
5. **Pluralization:** Determining whether to treat a compound noun as singular or plural can create issues (e.g., The **toothbrushes** are in the bathroom vs. The **tooth brush** is in the bathroom."
6. **Spelling Variations:** Variations in spelling (e.g., American vs. British English) can hinder matching.
7. **Compound Types:** Different types of compounds (closed, hyphenated, open) may require different handling in matching processes.
8. **Collocation:** Some compounds are more common in specific contexts, and using them inappropriately can lead to mismatches.

Addressing these issues by using gamification like Kahoot helped the students to understand the compound

nouns and gave careful attention to context and language rules. As result, it was discovered that most students performed better on the post test than on the pre-test.

10. Findings

The main conclusion was that students' ability to recognize and classify compound words had significantly improved. After using Kahoot, students' scores increased. As a result, the study's findings demonstrated that the students' writing abilities had improved. The majority of students were able to steer clear of the pre-test errors. They obviously learned more about compound nouns, and thanks to Kahoot.

Using Kahoot as a learning tool in the class for using compound nouns significantly enhanced student engagement and retention. The interactive and game-based format of Kahoot made the learning process more enjoyable, encouraging students to actively participate and collaborate.

By incorporating quizzes that focus on identifying and using compound nouns, the teacher could provide immediate feedback, allowing students to assess their understanding in real time. This approach did not only reinforce knowledge but also fostered a competitive spirit that could motivate the students. Overall, Kahoot served as an effective platform for reinforcing the concept of compound nouns in a

dynamic and interactive way. In addition, the above findings provide a robust validation of the initial research framework by demonstrating that gamified instruction directly correlates with both linguistic proficiency and student morale. The significant increase in test scores and the reduction of pre-test errors confirm **H1**, proving that Kahoot users achieved statistically superior recognition of compound nouns compared to their baseline. This success transitioned into the productive domain, as the students' improved writing abilities support **H2**, suggesting that the frequency and nature of the game-based practice effectively reinforced the practical application of grammar. Finally, While **H3** was not formally tested in this study, the high levels of student engagement and responsiveness to feedback suggest its validity. It is recommended to integrate interactive environments in future iterations to specifically target gains in student confidence."

10. Recommendation

Based on the findings regarding the effectiveness of gamification (Kahoot) and the specific linguistic hurdles students face, here are several recommendations for future educators and researchers:

1. Integration of Gamified Learning Regular Use of Kahoot/Quiz Platforms: Since the study proved Kahoot increases engagement and

retention, teachers should integrate it as a weekly review tool rather than a one-time intervention.

Immediate Feedback Loops: Use the "Real-time Feedback" feature of these apps to address misconceptions (like literal translation) the moment they occur during the game.

2. Targeted Linguistic Instruction

Focus on Non-Literal Meaning: Lessons should explicitly teach that compound nouns often have a unique meaning that is different from their individual parts (e.g., a "toolbox" is not just any "tool" plus a "box").

Grammar-Specific Drills: Creating targeted exercises for the most common errors found in this study:

Pluralization: Teaching that "toothbrushes" is correct while "teethbrush" is not.

Hyphenation: Providing a "cheat sheet" for when to use open, closed, or hyphenated forms.

Contextual Sentence Building: Move beyond simple matching. Encourage students to write "Context Clue" sentences to ensure they understand the specific environment a word like "basketball court" requires.

3. Peer Collaboration and

Competition

Team-Based Gamification: Instead of individual play, use Kahoot's "Team Mode." This encourages students to discuss the logic behind a compound noun before selecting an answer, which helps overcome individual vocabulary limitations.

Student-Created Quizzes: Have students design their own compound noun questions. This requires a deeper level of cognitive processing and helps them master word order and spelling.

4. Visual and Multimodal Aids

Visual Mapping: Using anchor charts or digital diagrams to show how two distinct objects combine to create a new concept.

Contrastive Analysis: For students prone to literal translation, side-by-side examples of the literal meaning should be provided versus the actual compound meaning to highlight the difference.

5. Expansion of Research

Long-Term Retention Studies: Future research could investigate whether the improvements seen in the post-test are maintained over several months or if they fade without consistent gamified reinforcement.

Comparison of Tools: Test whether other platforms (like Quizlet or Baamboozle) yield similar results to Kahoot to see if the success is due to the "game" aspect or the specific interface of the app.

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