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# Assessing the Effectiveness of "Kahoot!" in Enhancing Information Retention to Students at Young Achievers' School

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**Abstract**
Memory retention, specifically low information retention has always been a major problem in academic of learners, which causes low academic performance. And gamification in education has been utilized in many classroom settings and gained popularity through its interactive game-like features. However, studies about "Kahoot!" in improving information retention of senior high school STEM students has remained undiscovered. And by that, implementing gamified applications— particularly "Kahoot!" for learning, utilizing its practical features— this study aims to analyze the effectiveness of the "Kahoot!" program as a game-based learning tool in improving information retention of Grade 12 STEM students at Young Achievers' School of Caloocan, Inc. By utilizing quasi-experimental design, 30 students of the 3 sections of STEM strand were selected through stratified random sampling and were divided into two groups: one learned through traditional method and the other through Kahoot! Both groups completed pre-test and post-test to measure their levels. This has been analyzed using and independent t-test to determine their significance of the difference based on their gain scores. The results revealed that students who used Kahoot! attained higher post-test scores (M = 9.67, Sd = 0.89) compared to those in the traditional group (M = 5.80, Sd = 1.79), with a p-value of <0.001 which indicates significant difference. The features of Kahoot! based on the conceptual framework such as instant feedback and time quizzes were identified as most effective in improving information recall as well as engagement.

**Keywords:** Information Retention, Gamification, Kahoot!, Game Based-Learning, Grade 12 STEM Student

## Introduction

The use of educational technology has seen a rapid growth in recent years, especially in senior high school settings. One of the most commonly used tools is Kahoot! A game-based learning platform designed to make lessons more interactive and engaging with the use of competitive and interactive learning experience. Many teachers use it during reviews and class discussions, especially in STEM classes where complex topics are standard. However, as its popularity rises — there is still limited verification whether its effect truly benefits students in retaining information beyond the activity itself in regards to STEM strand. Few studies have investigated into how Kahoot! Affected memory retention of learners. A global review conducted by Wang (2022) looked at over 40 studies and found that while many students had fun using Kahoot!, only those who regularly utilized it appeared to have better memory retention and capable to apply what they have learned more efficient. In Asia, Ismail (2021) studied Malaysian science students and discovered that students who used Kahoot! Scored higher in tests after two weeks and remembered lessons far greater compared to those employed with static learning. In the Philippines, Reyes and Bernardo (2025) discovered students who used Kahoot! For eight consecutive weeks remembered far more vocabulary words than those who only used textbooks. These studies have shown it clearly - Kahoot! Can genuinely help with recollection if applied consistently, but there is still remains a limited number of studies focused on STEM students here in the Philippines. - it aims to scrutinize possible outcomes that can assist both students and teachers in their educational endeavors In STEM, where the lessons are usually detailed and complex, it is insufficient for students to just enjoy the activity, it is more

crucial for them to understand while retaining the information properly. This study aims to assess the effectiveness of Kahoot! In enhancing information retention of the STEM students. It will prioritize identifying whether the use of Kahoot! Has a significant impact on how well students recall and apply what they have learned. The findings of this study may help educators decide if integrating Kahoot! Into their teaching strategies are truly beneficial for academic performance and not just classroom engagement.

**Materials and Methods**

The researchers will utilize the quantitative method and use quasi-experimental design to determine the level of memory retention of the STEM students. This design will use to gather scores of pre-test and post-test about STEM subjects to measure memory retention and gather the crucial data needed for thestudy. The method involves collecting and analyzing numerical data to test hypotheses and measure relationships (NusingPitt, n.d.). Also, the standard measures (Likertscale surveys) will employ to collect, analyze, and summarize the level of memory retention of the STEM students. Thus, the researchers will use quasi-experimental quantitative research design which is a quantitative research method to collect measurable information. This study was conducted at Young Achievers School of Caloocan, a private educational school located in Bagumbong Caloocan City, Philippines. The school Young Achievers' School of Caloocan, Inc. (YASCI) is located at 7 Ramos Compound, in Bagumbong, Caloocan City in Barangay 171. We chose this because it is connected to our title and it is about the students at our school which is in Young Achievers School of Caloocan. Our target participants here are Grade 12 students in STEM strands who are enrolled at Young Achievers' in Caloocan, Inc. for the 2025-2026 school year. This school provides a suitable environment for the implementation of both traditional and technology-assisted learning methods, such as using Kahoot! as an interactive learning tool. This study will be conducted on the Grade 12 STEM students in Young Achievers' School of Caloocan during the School Year 2025-2026. The Grade 12 STEM students, which overallconsist of 132 students, resulted with the sample size of 30 participants for the overall number of STEM students (132). Each (3) sections of STEM will be divided into two groups, first assigned with Kahoot! while the other utilize the traditional teaching. The researchers will utilize the stratified random sampling on selecting respondent to validate the outcome of this study. stratified random sampling is a type of probability sampling where participants are chosen by dividing a large population to a smaller one known as strata or subgroups (Bisht, 2024). The researchers decided to employ stratified random sampling to ensure reliability of the data and avoid biases to collect data efficiently from the participants. In this study, the researchers aim to analyze the effects of utilizing Kahoot! in learning general chemistry topics. A survey questionnaire will also be useful for the researchers to know if Kahoot! really helps the students to learn and memorize general chemistry topics. To gather the information needed in this study, the researchers will use survey questionnaires that are used to survey the grade 12 STEM students at YASc to assess the students' enjoyment and motivation during the use of Kahoot! In the process of learning. The questionnaire consisted of ten (10) items. The respondents were asked to rate and answer the question using the following 5 Likert scale: strongly disagree, disagree, agree, strongly agree, and neutral. The like-rt scale was chosen for this study, to evaluate if this tool is effective for measuring the levels of motivation and engagement of the respondents. It allows simple and compatible capture of subjective experiences in quantitative data on students perceptions, it also helps respondents to express degree of agreement. This research instrument is easy to interpret, reliable and proven effective by gathering data on students' perceptions toward using Kahoot! in class. The researchers will also conduct pre-test and post-test to measure the effectiveness of Kahoot! in enhancing information retention in grade 12 STEM students from STEM 1 and STEM 2 before and after the utilization of game-based platforms. The researchers asked for help and assistance from their advisor to ensure accuracy and validity of the survey questionnaire. The said test was consulted by our teacher to review its relevance and alignment for the Department of Grade 12 STEM students. The pre-test was administered among the 30 Grade12 STEM students at Young Achievers School of Caloocan, inc. Before the quiz starts all respondents will be informed about research purposes, as well as their responses would remain confidential and their information will be kept. Kahoot quiz consists of 10 multiple choice questions and will use their gadgets to answer the following individually. Students' answers were recorded automatically by Kahoot! platform and data will proceed to statistical analysis and assistance from their advisor to ensure accuracy and validity of the survey questionnaire. The said test was consulted by our teacher to review its relevance and alignment for the Department of Grade 12 STEM students. The pre-test was administered among the 30 Grade12 STEM students at Young Achievers School of Caloocan, inc. Before the quiz starts all respondents will be informed about research purposes, as well as their responses would remain confidential and their information will be kept. Kahoot quiz consists of 10 multiple choice questions and will use their gadgets to answer the following individually. Students' answers were recorded automatically by Kahoot! platform and data will proceed to statistical analysis.

**Results and Discussion**

This chapter presents the results of the study titled “Assessing the Effectiveness of Kahoot in Enhancing Information Retention to Students at Young Achievers’ School of Caloocan.” The results are organized according to the pre-test and post-test performance of students in both the intervention group (Kahoot) and the traditional group, followed by the independent t-test analysis to determine if there is a significant difference in their performance.

**Conclusion**

The conclusions are based on the results of the data. The study concluded that the use of Kahoot! significantly improves STEM students information retention compared to those who used traditional methods. The results contradicts the null hypothesis which verified that game-based learning tools like Kahoot! are effective in learning outcomes. Therefore, Kahoot! is effectively an educational i0ol to assist STEM students, which highlights the importance of utilizing modem digital platforms in education to aid the essentials for 21st century learners.

**References**


1. Al Ghawail EA, Yahia SB. Using the E-learning gamification tool Kahoot! to learn chemistry principles in the classroom. Procedia Computer Science. 2022; 207:2667-2676. https://www.sciencedirect.com/science/article/pii/S1877050922012145
2. Badri Z, Amat R, Abd Rahim MA. Assessing the effectiveness of using Kahoot! to improve students' engagement during grammar lessons. Creative Practices in Language Learning and Teaching (CPLT). 2025; 13(1):105-117. https://ir.uitm.edu.my/id/eprint/115981/
3. Barba JF. Gamified e-learning platforms as strategy to increase student engagement. Department of Education, 2021. https://e-saliksik.deped.gov.ph/gamified-e-learning-platforms-as-strategy-to-increase-student-engagement
4. Cadet MJ. Application of a game-based learning platform such as Kahoot as a formative evaluation tool to assess students' learning. Clinical Simulation in Nursing. 2023; 72:41-44. Doi: https://doi.org/10.1016/j.ecns.2023.01.004
5. El Amrani S. The impact of Kahoot on vocabulary retention among Moroccan EFL learners. Journal of English Language Teaching and Applied Linguistics. 2023; 5(2):45-60. https://al-kindipublishers.org/index.php/jeltal/article/view/10634
6. Gonzales LA. Enhancing literary comprehension through interactive reading assignments using Kahoot!. Journal of Innovative Pedagogy. 2024; (294). https://jippublication.com/index.php/jip/article/view/294
7. Haiyan G. Memory retention. In Z. Kan (Ed.), The ECPH Encyclopedia of Psychology (First online 08 June 2024) [Living reference work entry]. Springer, Singapore, 2024. Doi: https://doi.org/10.1007/978-981-99-6000-2 965-1
8. Koutroubas V, Galanakis M. Bandura's social learning theory and its importance In the organizational psychology context. ResearchGate, June 2022. https://www.researchgate.net/profile/Virginia-Koutroubas/publication/360837107
9. Bandura M, Popescu E. Kahoot! as a tool to maintain students' attention and increase retention rates: An experience report with computer science students. In International Conference on Intelligent Tutoring Systems. Cham: Springer Nature Switzerland, June 2024, 80-87 https://link.springer.com/chapter/10.1007/978-3-031-63031-67
10. Maemanah A, Shofiana KL. Exploring the use of Kahoot as a game-based learning tool in vocabulary to senior high school students: A systematic review. Jurnal Penelitian Ilmu Pendidikan Indonesia. 2025; 4(2):893-901. https://jpion.org/index.php/jpi/article/view/419
11. Martínez-Jiménez R, Pedrosa-Ortega C, Licerán-Gutiérrez A, Ruiz-Jiménez MC, García-Martí E. Kahoot! as a tool to improve student academic performance in business management subjects. Sustainability. 2021; 13(5):article-2969. Doi: https://doi.org/10.3390/su13052969
12. McDermott KB. Practicing retrieval facilitates learning. Annual Review of Psychology. 2021; 72(1). Doi: https:/doi.org/10.1146/annurev-psych-010419-051019
13. Md F, Arshad A, Razali NA, Zabidin N. Using Vroom's theory to understand the motivation for learning English among undergraduates. European Proceedings of Educational Sciences. 2023; 7:448-457. Doi: https://doi.org/10.15405/epes.23097.40
14. Mohamed RS, Hassan NM. Technological advancements and the use of Kahoot! in nursing education. Egyptian Journal of Nursing. 2023; 18(4):89-101. https://journals.ekb.eg/article 338035.html
15. Ojo AP. Effects of Kahoot game-supported instruction on achievement, retention and interest in basic technology among secondary school students in Minna, Niger State [Master's thesis, Federal University of Technology Minna]. FUTMinna Institutional Repository, 2021. http://irepo.futminna.edu.ng:8080/jspui/handle/123456789/19419
16. Özdemir O. Kahoot! Game-based digital learning platform: A comprehensive meta-analysis. Journal of Computer Assisted Learning. 2024; 41(1). Doi: https://doi.org/10.1111/jcal.13084
17. Pillado IA, Futalan MCZ, Comighud SMT. Factors on memory retention: Effect to students' academic performance. UBT International Conference, 2020. https://www.researchgate.net/publication/341089050
18. Rahmahani D. The effect of gamified student response system on students' perception and achievement. International Journal of Engineering Pedagogy. 2020; 10(2). https://www.researchgate.net/publication/339857721
19. Ranathunga P, Karunanayaka S. Kahoot! as a tool for formative assessment in medical education. South-East Asian Journal of Medical Education. 2022; 16(1):72-80. Doi: https://doi.org/10.4038/seajme.v16i1.403
20. Travinio RDJ, Gonzales MAS. Game-based applications to enhance students' engagement and performance. International Journal of Research Publications. 2022; 103(1):13. Doi: https://doi.org/10.47119/IJRP1001031620223484
21. Zhang Q, Yu Z. A literature review on the influence of Kahoot! on learning outcomes, interaction, and collaboration. Education and Information Technologies. 2021; 26(4):4507-4535. Doi: https://doi.org/10.1007/s10639-021-10459-6