

THE INFLUENCE OF KAHOOT MEDIA USAGE ON STUDENTS' LEARNING INTEREST IN ISLAMIC RELIGIOUS EDUCATION (PAI) SUBJECT AT SMAN 1 BUNGURAN TIMUR

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ABSTRACT

This study aims to examine the influence of Kahoot-based instructional media on students' learning interest in Islamic Religious Education (PAI) at SMAN 1 Bunguran Timur, Natuna Regency, Riau Islands Province. A quantitative correlational approach was employed, involving 51 students as respondents. Data were collected through validated and reliable questionnaires and analyzed using Spearman Rank correlation via SPSS 26. The findings reveal that both Kahoot usage and students' learning interest fall within the moderate category, with mean scores of 58.51 and 56.25 respectively. The correlation analysis yielded a coefficient of $\rho = 0.508$ with a significance value of 0.000, confirming a statistically significant influence of Kahoot-based media on PAI learning interest. The coefficient of determination further indicates that Kahoot contributes 26% to students' learning interest, while the remaining 74% is attributed to other variables. Although Kahoot demonstrably enhances learning interest, its full pedagogical potential remains unrealized due to limitations in digital infrastructure and implementation consistency inherent to this frontier archipelagic school context. Strengthening teacher competency and increasing the frequency of Kahoot utilization are recommended to elevate students' learning interest to a higher level.

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INTRODUCTION

SMAN 1 Bunguran Timur, a public senior high school located in Ranai Kota, Bunguran Timur District, Natuna Regency, Riau Islands Province, has been operational since its inauguration on October 22, 1982. As one of the pioneering educational institutions in the region, the school has consistently demonstrated a commitment to fostering academic excellence grounded in religious integrity and technological literacy, as reflected in its vision to cultivate outstanding generations in the fields of faith, piety, and science based on Pancasila values. Among its programmatic

commitments, the school has integrated smartphone-based learning into its teaching and learning process, positioning digital media as an integral component of classroom instruction.

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In line with this digital-oriented framework, Kahoot-based instructional media has been implemented in the Islamic Religious Education (PAI) subject at SMAN 1 Bunguran Timur. Empirical data collected from 51 student respondents yielded a mean score of 58.51 for the Kahoot usage variable (X), reflecting an intermediate level of implementation. The measurement instrument demonstrated strong internal consistency, with a Cronbach's Alpha of 0.851 and 15 out of 19 items confirmed valid. The learning interest variable (Y) recorded a mean score of 56.25, with a Cronbach's Alpha of 0.824, indicating comparable mid-range performance on both variables.

Correlation analysis via Spearman Rank using SPSS 26 yielded $\rho = 0.508$ with a significance value of 0.000, leading to the rejection of H_0 and acceptance of H_a . The coefficient of determination indicated that Kahoot-based media contributed 26% to students' PAI learning interest, with the remaining 74% attributable to other variables. While statistically significant, this contribution suggests that Kahoot's pedagogical potential has not been fully realized within the school's current contextual conditions.

Ideally, gamified platforms such as Kahoot should yield more than an intermediate level of influence on learning interest. Chairunnisa et al. (2025) assert that Kahoot-based gamification produces a high-level influence on learning interest when implemented optimally, while Handayani et al. (2025) emphasize its capacity to generate strong improvements particularly in subjects perceived as less engaging. Rizki et al. (2024) affirm that consistent and strategically applied Kahoot use should exert considerable influence on PAI learning interest, and Ulfa et al. (2025) argue that optimal utilization should yield high-category student engagement. Shopia et al. (2025) further contend that Kahoot integrated with supportive motivation should surpass a merely moderate impact. The gap between these theoretical expectations and the mid-range empirical findings at SMAN 1 Bunguran Timur raises critical questions about the instructional, environmental, and motivational factors constraining the platform's effectiveness.

This gap gives rise to the central research problem: to what extent does Kahoot-based instructional media influence students' PAI learning interest at SMAN 1 Bunguran Timur, and what is the magnitude of that influence?

Researchers have consistently documented Kahoot's positive role across various learning dimensions (Azmy et al., 2024; Bunyamin et al., 2020; Hermawati & Solihin, 2023; Nisa et al., 2022). Studies in religious subject instruction have revealed significant engagement gains when Kahoot was systematically integrated (Hadijah et al., 2025; Handayani et al., 2025), and investigations specifically in the domain of learning interest confirm its positive correlation with enthusiasm and active participation (Rizki et al., 2024; Ulfa et al., 2025; Chairunnisa et al., 2025). Comparative studies with platforms such as Quizizz affirm Kahoot's advantages in accessibility and instructional ease (Fauzi et al., 2025; Atmasani et al., 2025), while broader explorations document its effectiveness in improving outcomes across multiple subject areas (Putra, 2025; Zendrato, 2025; Shopia et al., 2025).

Notwithstanding this body of literature, a critical lacuna remains. Most existing studies have focused on urban or non-frontier settings, subjects other than PAI at the senior high school level, or motivation and participation outcomes rather than learning interest as a distinct rigorously measured construct. No prior study has examined Kahoot's influence on PAI learning interest at SMAN 1 Bunguran Timur, a school situated in a geographically peripheral and archipelagic region where digital infrastructure and pedagogical innovation present unique challenges. This research therefore occupies a non-redundant position in the literature, contributing new empirical evidence from a systematically underrepresented context (Hartoni & Nasution, 2022; Ilham & Eka, 2024; Febby et al., 2023).

This study offers a novel contribution by providing the first quantitative empirical analysis of Kahoot's influence on PAI learning interest within a frontier archipelagic school context in Natuna Regency. Learning interest

is operationalized as a multidimensional construct encompassing student affect, attention, involvement, and motivation, measured through validated instruments. The rigorous statistical methodology employed produces findings that are theoretically significant and practically transferable to similar remote educational contexts across Indonesia, directly supporting SDG 4 on inclusive and equitable quality education.

The urgency of this research is underscored by the persistent challenge of low learning engagement in PAI among senior high school students, closely linked to the underutilization of innovative instructional media. Understanding the actual rather than ideal impact of platforms such as Kahoot in geographically marginalized settings is a matter of educational equity and policy relevance. The present study therefore provides evidence that can inform teachers, administrators, curriculum designers, and policymakers in designing more effective, contextually responsive, and SDG-aligned digital learning strategies for frontier regions of Indonesia.

Based on the background described above, this study formulates two central research problems. First, to what extent does the use of Kahoot-based instructional media influence students' learning interest in PAI at SMAN 1 Bunguran Timur, given that its empirical contribution stands at only 26%, necessitating a deeper analysis of the factors preventing this figure from reaching the high category as idealized by theory and prior research. Second, how is the actual condition of Kahoot-based media use and students' learning interest descriptively portrayed at SMAN 1 Bunguran Timur, so as to establish a comprehensive and contextual foundation for developing more effective and innovative PAI learning strategies in Indonesia's frontier archipelagic regions.

RESEARCH MOTHOD

This study employs a quantitative research approach, which according to Creswell (2022) is a method used to test specific theories by examining the relationships among variables that are measured with instruments and analyzed using statistical procedures. The type of research used is correlational research, which aims to determine the degree and direction of the relationship between the use of Kahoot-based instructional media (X) and students' learning interest in PAI (Y) at SMAN 1 Bunguran Timur. Data were collected through a questionnaire distributed to 51 students selected as the research sample, with instruments that had been tested for validity and reliability prior to distribution (Waruwu et al., 2025). The questionnaire for variable X consisted of 15 valid items and variable Y consisted of 15 valid items, resulting in a total of 30 items used in the study (Subhaktiyasa et al., 2025).

Data analysis in this study was conducted using Spearman Rank correlation analysis assisted by SPSS 26, which is appropriate for examining the influence between two variables measured on an ordinal scale (Sugiyono, 2022). The magnitude of the contribution of variable X to variable Y was further determined through the coefficient of determination (KD) calculation. To ensure the trustworthiness of the data, validity testing was conducted by comparing r-count with r-table at a significance level of 5%, while reliability was assessed using Cronbach's Alpha with a threshold of 0.6, both instruments met the required standards, with Cronbach's Alpha values of 0.851 for variable X and 0.824 for variable Y, confirming that the instruments were reliable and suitable for use in this research context (Rizki et al., 2026).

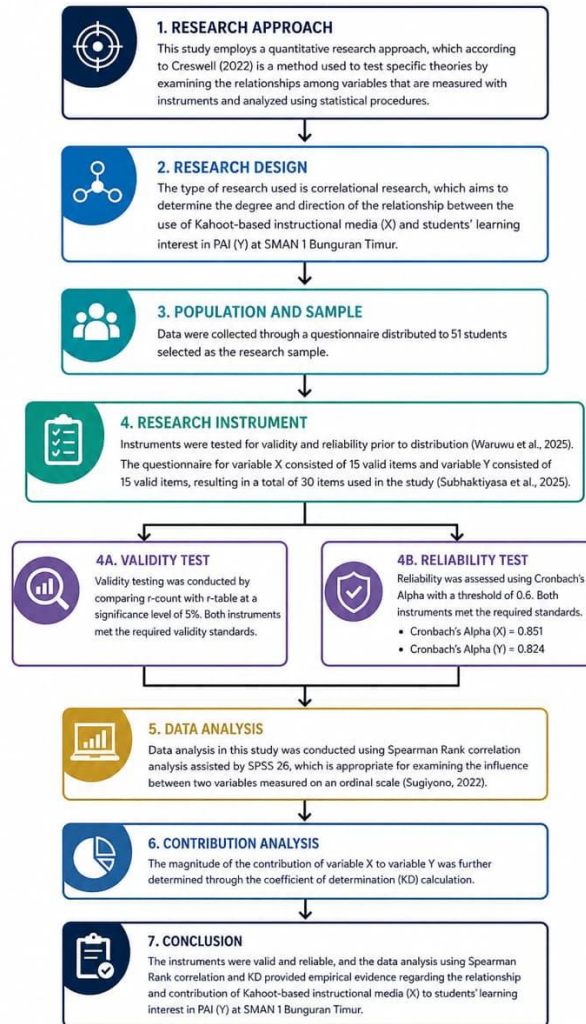


Figure 1. Research Methodology Framework

RESULT AND DISCUSSION

RESULT

Descriptive Overview of Kahoot-Based Instructional Media Use and Students' Learning Interest in PAI at SMAN 1 Bunguran Timur

Descriptive analysis of data from 51 respondents revealed that variable X (Kahoot-based media use) yielded a mean of 58.51 (SD = 10.633), with the majority of students (41.18%) falling within the intermediate performance range. Variable Y (PAI learning interest) recorded a mean of 56.25 (SD = 10.268), with 39.22% of students similarly situated at a comparable mid-range level. The distributional pattern of both variables is presented in Figure 2.

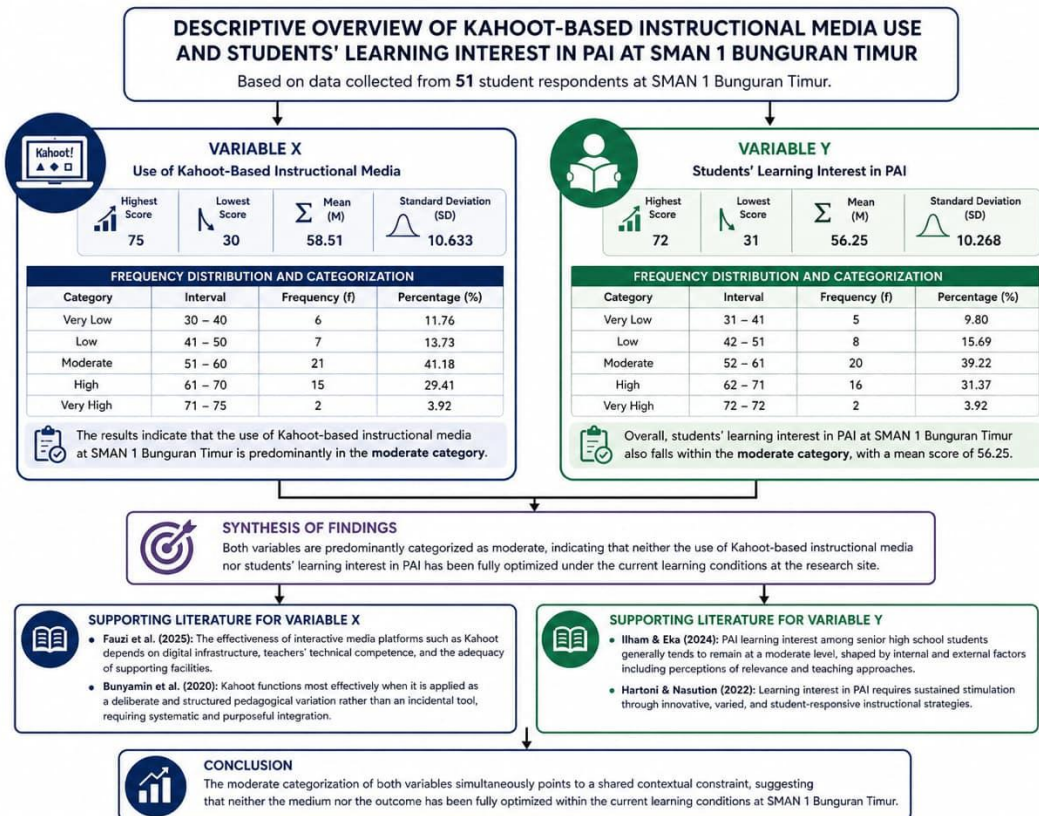


Figure 2. Descriptive Overview of Kahoot-Based Instructional Media Use and Students' Learning Interest

Consistent with Fauzi et al. (2025), the present findings indicate that Kahoot's implementation has not yet reached its optimal potential, yet the mid-range scores highlight the mediating role of contextual constraints such as limited digital infrastructure, inconsistent platform use, and varying levels of teacher technical competence. Beyond these structural factors, Bunyamin et al. (2020) underscore that Kahoot yields its greatest educational impact when deployed as a deliberate and structured pedagogical variation rather than an incidental classroom tool, a condition that appears only partially met within the current school setting.

Consistent with Ilham & Eka (2024), the present data on learning interest further indicate that mid-range PAI engagement among senior high school students is shaped by students' perceptions of subject relevance and prevailing instructional approaches, rather than by any single technological intervention. Hartoni & Nasution (2022) reinforce this by asserting that PAI learning interest requires sustained and varied stimulation to develop meaningfully. The convergence of both variables at a mid-range level collectively signals a shared pedagogical constraint: neither the instructional medium nor the learning outcome has been fully optimized within the current conditions of this frontier school context.

The Influence of Kahoot-Based Instructional Media on Students' Learning Interest in PAI at SMAN 1 Bunguran Timur

Spearman Rank correlation analysis via SPSS 26 yielded $\rho = 0.508$ with a significance value of 0.000, which falls below the 0.05 threshold. As the r-count exceeds the r-table value ($0.508 > 0.276$), H_0 is rejected and H_a is accepted, confirming a statistically significant influence of Kahoot-based media on PAI learning interest. Based on Sugiyono's (2022) interpretation table, a rho of 0.508 places the relationship within the sufficient correlation range

(0.40–0.599). The coefficient of determination was calculated as $KD = (0.508)^2 \times 100\% = 26\%$, indicating that Kahoot accounts for 26% of the variance in students' PAI learning interest, while the remaining 74% is attributable to variables outside the scope of this study. The correlation output is presented in Figure 3.

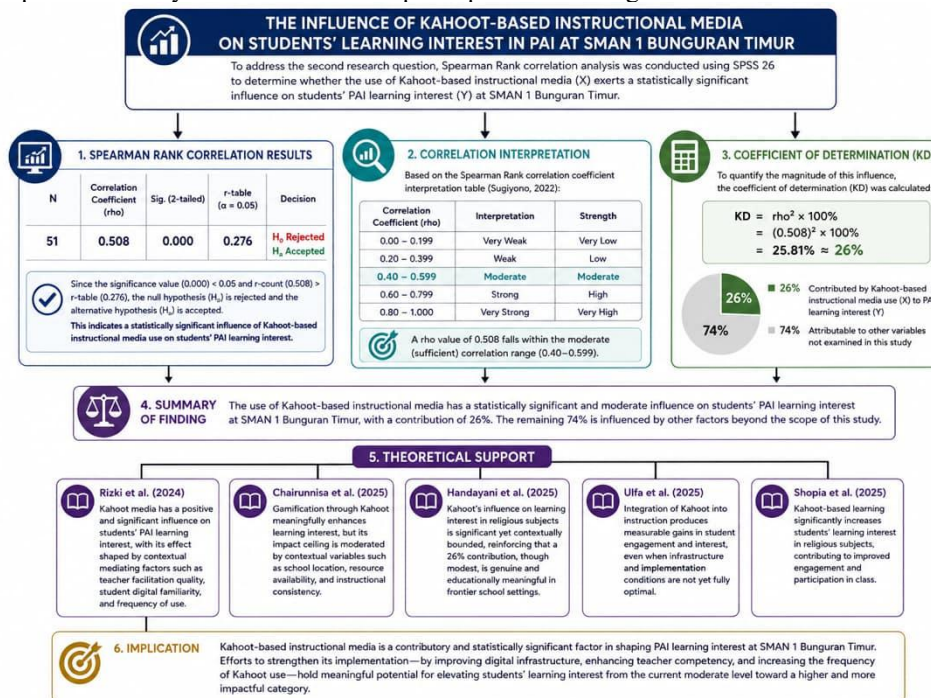


Figure 3. *The Influence of Kahoot-Based Instructional Media on Students' Learning Interest*

Consistent with Rizki et al. (2024), the present findings confirm that Kahoot carries a positive and significant influence on PAI learning interest, yet the 26% effect size underscores the substantial mediating role of contextual factors including teacher facilitation quality, student digital literacy, and the frequency of platform use. The 74% variance unexplained by Kahoot alone points directly to these unexamined determinants: classroom climate, students' intrinsic motivation, curriculum design, and the broader pedagogical environment likely constitute the more dominant drivers of learning interest in this frontier school setting, and represent priority areas for future investigation and practical intervention.

Consistent with Chairunnisa et al. (2025), the present evidence further indicates that school location, resource availability, and instructional consistency function as moderating variables that determine the ceiling of Kahoot's impact. Consistent with Handayani et al. (2025), Kahoot's influence on religious subject learning interest is real yet contextually bounded, reinforcing the conclusion that a 26% contribution, while modest, constitutes a genuine and educationally meaningful effect under the infrastructural and pedagogical constraints of a frontier archipelagic school. Ulfa et al. (2025) and Shopia et al. (2025) similarly affirm that measurable gains in student engagement are achievable even under suboptimal implementation conditions. Taken together, these findings confirm that strengthening digital infrastructure, enhancing teacher competency in platform integration, and increasing the frequency of structured Kahoot use hold meaningful potential for elevating students' PAI learning interest toward a higher and more impactful level of achievement.

CONCLUSION

This study concludes that Kahoot-based instructional media exerts a statistically significant influence on students' PAI learning interest at SMAN 1 Bunguran Timur, confirmed by a Spearman Rank correlation coefficient

of 0.508 (sig. = 0.000) and a coefficient of determination of 26%. Both variables register at an intermediate performance level, with mean scores of 58.51 and 56.25 respectively, indicating that while Kahoot has been meaningfully integrated into the learning environment, contextual mediating factors, including digital infrastructure, teacher competency, and implementation consistency, continue to constrain its full pedagogical impact.

These findings carry direct policy implications. The 74% of variance unaccounted for by Kahoot alone signals that technology adoption without accompanying investment in teacher professional development, classroom digital literacy, and infrastructural equity will yield only marginal gains. For frontier and archipelagic schools such as SMAN 1 Bunguran Timur, this demands a shift from tool-centered to pedagogy-centered digital integration policies. Policymakers and school administrators must therefore prioritize structured Kahoot training programs, allocate adequate digital infrastructure funding, and embed game-based learning within a coherent and sustained instructional framework, measures that constitute a concrete and accountable pathway toward SDG 4's commitment to inclusive, equitable, and quality education for all learners, regardless of geographic location.

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