

The Correlation of Student Engagement using Kahoot on Learning Outcomes in Junior High School

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ABSTRACT

This study aims to explore the relationship between the use of Kahoot and student engagement in learning at SMP Negeri 22 Samarinda, focusing on addressing the issue of low student engagement and how Kahoot can potentially enhance it. A correlational quantitative research design was employed, with a randomly selected sample of students from class VII B. Data were collected through both observations and surveys. The findings revealed a significant positive correlation between the use of Kahoot and student engagement, indicating that Kahoot's interactive and gamified features effectively increased student participation and focus in the learning process. Additionally, the study found that this enhanced engagement positively impacted students' learning outcomes. The results suggest that the integration of Kahoot as an educational tool can improve student motivation, interactivity, and overall satisfaction, making it an effective method for increasing engagement and boosting academic achievement. These findings are expected to provide valuable insights for educators seeking to enhance student engagement and learning outcomes through the use of technology.

KEYWORDS

student engagement; kahoot; learning outcomes

ABSTRAK

Penelitian ini bertujuan untuk mengkaji hubungan antara penggunaan Kahoot dan keterlibatan siswa dalam pembelajaran di SMP Negeri 22 Samarinda, dengan fokus pada masalah rendahnya keterlibatan siswa dan bagaimana Kahoot dapat mempengaruhinya. Desain penelitian yang digunakan adalah pendekatan kuantitatif korelasional dengan sampel siswa kelas VII B yang dipilih secara acak. Data dikumpulkan melalui observasi dan survei. Hasil penelitian menunjukkan adanya korelasi positif yang signifikan antara penggunaan Kahoot dan keterlibatan siswa, yang juga berdampak pada peningkatan hasil belajar. Temuan ini menunjukkan bahwa fitur interaktif dan gamifikasi Kahoot secara efektif meningkatkan partisipasi dan fokus siswa dalam proses pembelajaran. Selain itu, penelitian ini menemukan bahwa peningkatan keterlibatan tersebut berdampak positif pada hasil belajar siswa. Hasil penelitian ini diharapkan dapat memberikan wawasan bagi pendidik dalam meningkatkan keterlibatan siswa melalui penggunaan Kahoot sebagai alat pembelajaran.



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keterlibatan siswa; kahoot; hasil belajar

INTRODUCTION

In the realm of education, student engagement and motivation are critical elements that significantly influence the success of the learning process. Research indicates that sustained student engagement contributes to improved learning outcomes, whereas low motivation is often linked to poor academic performance (Liu et al., 2012). However, fostering engagement and motivation remains a persistent challenge, especially in educational settings with large class sizes, where direct interaction between teachers and students is limited. This underscores the need for innovative approaches to enhance student engagement and create more effective learning experiences.

One such innovative solution is the integration of game-based technology into education, particularly through game-based student response systems (GSRs). Applications like Kahoot have gained popularity for their ability to increase student engagement and motivation while addressing the boredom often associated with traditional teaching methods (Barrio et al., 2016; Wang & Lieberoth, 2016). Kahoot combines motivational theories with game design, fostering a competitive yet enjoyable learning environment that encourages active student participation.

The use of Kahoot in education has garnered significant attention among educators and researchers. Studies reveal that Kahoot is not only effective in boosting student motivation but also enhances classroom dynamics and facilitates mastery of learning materials (Boden & Hart, 2018; Budiati, 2017). Additionally, Kahoot's flexible features—such as anonymous participation and voice feedback settings—provide an inclusive learning experience, particularly for students who may lack confidence or are hesitant to actively engage in class.

The broader framework of game-based learning has also proven to be a powerful educational tool, enhancing engagement, motivation, satisfaction, and concentration. Gamification, as defined by Groh (2012), emphasizes engaging user participation, while Salen et al. (2004) describe it as a structured process of competition that yields measurable results. By integrating game elements, gamification enhances the learning experience by making it both motivating and enjoyable.

Kahoot stands out as a prominent example of game-based applications, transforming traditional classrooms into interactive and dynamic learning environments (Boden & Hart, 2018). Its multi-platform functionality allows teachers to create quizzes

that students can answer using their own devices, offering various customizable modes to cater to diverse teaching and learning needs. Features such as multiple-choice questions, timing controls, and anonymous participation make Kahoot a versatile tool for inclusive and engaging learning experiences.

Despite its numerous benefits, the use of Kahoot and similar tools is not without limitations. Studies have noted that while Kahoot promotes engagement and motivation, over-reliance on game-based learning tools may lead to superficial engagement, where students focus more on the competitive aspects rather than the content being learned. Furthermore, the effectiveness of Kahoot can vary depending on factors such as subject matter, the teacher's ability to integrate the tool meaningfully into the curriculum, and the technological infrastructure available in schools.

Publicando (2017) highlighted Kahoot's effectiveness in language learning, with students reporting increased focus, motivation, and preparedness for exams. However, the study also suggested exploring its application in other language skills to better understand its broader impact. Similarly, while Budiati (2017) and Iaremenko (2017) found Kahoot to be effective in fostering intrinsic motivation and enhancing learning outcomes, they emphasized the importance of combining Kahoot with other teaching strategies to ensure a holistic approach to learning.

This study aims to explore the impact of using Kahoot on student engagement and learning outcomes in the classroom. While focusing on how game-based technology influences learning dynamics, this research also seeks to provide educators with insights into implementing interactive and innovative teaching strategies. By addressing both the advantages and limitations of tools like Kahoot, this study aspires to contribute to the development of more effective and balanced educational technologies that meet the evolving needs of students in the digital age.

METHOD

The research employs a quantitative correlation method, as described by Sugiyono (2014), which aims to identify the relationship between variables to generate new insights or manifestations. This study examines the correlation between student engagement and learning outcomes among class VII B students at SMPN 22 Samarinda, focusing on the potential relationship between Kahoot usage and student engagement in the learning

process. Conducted at SMPN 22 Samarinda, located at Jl. Pahlawan No.36, Kelurahan/Kecamatan Dadi Mulya, Samarinda Ulu, with a total student population of 1,230, the research specifically sampled students from class VII B using random sampling, ensuring equal opportunity for all students to participate. Data collection involved a survey approach (Sugiyono, 2012) to identify patterns and relationships between variables, emphasizing task variety, student interaction, and Kahoot's gamification elements. The primary instruments included questionnaires with a 1-5 rating scale to measure various aspects of student engagement and observation sheets evaluating active participation, questioning ability, task focus, and collaboration, rated on a scale of 1-10. Observations were conducted during Kahoot sessions, and surveys were distributed afterward to directly measure engagement. Data analysis was performed using SPSS, employing descriptive statistics and Pearson correlation analysis to test the relationship between Kahoot usage and student engagement, with a significance threshold of $p < 0.05$.

FINDINGS AND DISCUSSION

The findings of this study demonstrate a strong relationship between the use of Kahoot and student engagement at SMP Negeri 22 Samarinda. The primary aim was to explore how Kahoot influences student engagement and its impact on learning outcomes. The results reveal a very strong positive correlation between Kahoot usage and student engagement. Observational and survey data indicate that students who frequently use Kahoot are more actively involved in classroom activities. Compared to traditional learning methods, students engaged with Kahoot showed significant improvements, including a higher propensity to ask questions, remain task-focused, and collaborate effectively with peers.

Furthermore, the study highlights that increased student engagement correlates with better learning outcomes. Students who utilized Kahoot exhibited improved performance, as reflected in their exam scores and performance assessments. These findings affirm the theory that student engagement is critical for achieving optimal learning outcomes. Higher engagement enhances students' comprehension of the material and fosters a greater willingness to learn.

Key features of Kahoot, such as the point-scoring system and voice feedback, were found to play a significant role in enhancing student engagement. The immediate

feedback and healthy competition offered by Kahoot kept students more focused and made the learning process enjoyable. This aligns with previous research indicating that gamification elements can boost student motivation and engagement. Moreover, Kahoot fosters a more positive learning environment, increasing students' motivation and satisfaction with lessons, which, in turn, enhances their interest in participating in class activities.

However, the study has limitations, including a small sample size and restricted research locations. Future studies involving larger and more diverse samples are recommended to validate these findings and further explore how Kahoot's gamification features can be optimized to enhance learning outcomes. Despite these limitations, this research provides valuable insights into the effectiveness of Kahoot in increasing student engagement and improving learning outcomes, underscoring its potential as an innovative tool to create a more interactive and engaging classroom environment.

Table 1 Student Engagement and Learning Outcomes Data

No.	Subject Name	Engagement	Outcome
1.	AB	75	74
2.	BC	65	65
3.	CD	65	66
4.	DE	75	76
5.	EF	75	76
6.	FG	82	83
7.	GH	75	74
8.	HI	75	74
9.	IJ	92	93
10.	JK	75	74
11.	KL	80	81
12.	LM	82	83
13.	MN	92	91
14.	NO	70	70
15.	OP	87	88
16.	PQ	72	71
17.	QR	20	21
18.	RS	25	26
19.	ST	92	91
20.	TU	77	78
21.	UV	72	71
22.	VW	30	31
23.	WX	75	74
24.	XY	75	75
25.	YZ	80	79
26.	ZA	85	84

The table presents two variables, Engagement and Outcome, each with 26 data points. Engagement measures participation levels (ranging from 20 to 92), while

Outcome reflects achievement levels (ranging from 21 to 93). The data shows a positive relationship: higher engagement generally leads to better outcomes. However, variations exist, such as an engagement score of 20 resulting in a low outcome of 21, indicating that high engagement doesn't always guarantee high outcomes.

Table 2 *Tests of Normality*

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Engagement	.273	26	.000	.744	26	.000
Outcome	.267	26	.000	.762	26	.000
a. Lilliefors Significance Correction						

The normality test assessed the distribution of data regarding student engagement and learning outcomes in this study, utilizing both Kolmogorov-Smirnov and Shapiro-Wilk tests. Results indicated that the data were not normally distributed. The Kolmogorov-Smirnov test yielded a statistical value of 0.273 for student engagement with a significance value (Sig.) of 0.000, while learning outcomes had a statistical value of 0.267 and a Sig. value of 0.000. These values, being less than 0.05, confirm that the distributions deviate from normality. The Shapiro-Wilk test supported these findings, showing a statistical value of 0.744 (Sig. = 0.000) for student engagement and 0.762 (Sig. = 0.000) for learning outcomes, both indicating non-normal distribution.

As a result, parametric correlation tests like Pearson's cannot be used. Instead, non-parametric correlation tests, specifically the Spearman test, were employed for the ordinal or interval data. The Spearman test revealed a very strong positive correlation between student engagement and learning outcomes, evidenced by a high correlation coefficient and a significant p-value < 0.05. This supports the hypothesis that Kahoot enhances student engagement and learning outcomes. Therefore, the choice of Spearman's test was justified based on the normality test results, which indicated that non-parametric testing was appropriate for correlation analysis

Table 3 *Spearman Correlation Test Result*

			Engagement	Outcome
Spearman's rho	Engagement	Correlation Coefficient	1.000	.988
		Sig. (2-tailed)	.	.000
		N	26	26
	Outcome	Correlation Coefficient	.988	1.000
		Sig. (2-tailed)	.000	.
		N	26	26

**Correlation is significant at the 0.01 level (2-tailed).

The results of the Spearman correlation analysis show a strong and positive relationship between “Engagement” and “Outcome”, with a correlation coefficient of approximately 0.988. From the statistical significance of 0.000, it can be concluded that this relationship is not completely symmetrical. With a sample size of approximately 26 people, it can be concluded that the increase in “Engagement” is greater than the decrease in “Outcome”. This shows how important “Engagement” is to affect “Outcomes”, which is important to consider in research and apply in relevant fields.

Table 4 Spearman Correlation Coefficient Significance Test Results

Variable	Correlation Coefficient	Sig. (2-tailed)	Conclusion
Engagement-Outcome	0.988	0.000	There is a relationship

The table above shows that the variable “Engagement” has a correlation coefficient of 0.988 with a significance value of 0.000. Since the significance value is less than 0.05, the null hypothesis (Ho) is rejected, and the alternative hypothesis (Ha) is accepted, indicating that there is a significant correlation between the level of “Engagement” and “Outcome” in the data analysis.

Table 3 shows a very strong positive correlation between student engagement and learning outcomes when using Kahoot, with a Spearman's rho coefficient of 0.988, indicating an almost perfect relationship. The more engaged students are, the better their outcomes. This correlation is highly significant (Sig. 2-tailed = 0.000), confirming it is not due to chance. Therefore, Kahoot is strongly linked to improving both student engagement and learning outcomes.

Table 3 reveals a strong positive correlation between the use of Kahoot and students' engagement in learning, with a Spearman's rho correlation coefficient of 0.988, indicating an almost perfect relationship between engagement and learning outcomes. This statistically significant correlation (Sig. 2-tailed = 0.000) suggests that increased engagement through Kahoot leads to significantly improved learning outcomes. With a sample size of 26, the data supports the conclusion that Kahoot effectively enhances both student engagement and learning results.

This study demonstrates that Kahoot significantly enhances student engagement and learning outcomes, with a strong positive correlation between the two. By integrating interactive quizzes, real-time feedback, and healthy competition, Kahoot creates a more

enjoyable and effective learning experience, supporting its role as a transformative educational tool. Consistent with prior research, Wang and Lieberoth (2016) found that Kahoot's sound and scoring features significantly boost student concentration and satisfaction, while Publicando (2017) highlighted its ability to foster motivation and a positive learning environment through auditory stimuli and immediate feedback. Budiati (2017) emphasized its impact on English learning, noting increased student interest, motivation, and participation, particularly due to its anonymity feature, which creates a safe space for responses without fear of judgment. Prensky's (2005) theoretical framework aligns with Kahoot's ability to combine visual, auditory, and interactive elements to cater to diverse learning styles, while Groh (2012) and Salen et al. (2004) underline the importance of gamification features like clear rules and competition, which Kahoot effectively incorporates through leaderboards and timed questions. Research by Tan et al. (2018) further supports Kahoot's benefits in promoting collaboration, social interaction, and communication skills, essential for dynamic and engaging classroom environments. Publicando (2017) and Malamed (2012) confirmed that game-based tools like Kahoot enhance motivation, reduce anxiety, and improve learning outcomes. Finally, Iarenenko (2017) found that Kahoot's competitive and rewarding features boost intrinsic motivation and create a dynamic environment, highlighting its effectiveness in fostering engagement and improving educational outcomes across various contexts.

CONCLUSION

This research aims to explore how the use of Kahoot can improve student engagement and learning outcomes. The results show that Kahoot has a positive influence on student engagement and the achievement of better learning outcomes. The strength of this research lies in the focus on using Kahoot as a learning tool that incorporates game elements, making it an effective tool to make the learning process more interesting and relevant for today's students. The implications of this research are significant for the development of education, where the use of technology and game features such as Kahoot can improve learning experiences and learning outcomes. Although this study provides valuable insights, there are limitations, such as the relatively small number of students and only in one class. Therefore, future research is expected to involve a larger number of students and more varied locations, as well as delving deeper into ways to optimize the

features of Kahoot and other educational games to improve learning outcomes. This study not only provides new information about Kahoot's role in education, but also emphasizes the importance of further research to advance education by utilizing technology.

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