

The Use of Kahoot! Interactive Learning Media to Improve Learning Motivation in Vocational Schools

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Abstract: This study aimed to describe students learning motivation before and after the use of Kahoot! and to examine whether there was a significant difference in students' learning motivation before and after the implementation of the interactive learning media. This study employed a quantitative approach using a quasi-experimental method with a One Group Pretest-Posttest Design. The participants were 34 students of class XI TKR-1 at SMK Negeri 1 Kota Kediri. Data analysis consisted of descriptive statistics, the Shapiro-Wilk normality test, Levene's homogeneity test, and paired sample t-test. The results showed that the mean learning motivation score increased from 79.12 before the intervention to 93.85 after the use of Kahoot!, representing an increase of 14.73 points. The paired sample t-test yielded a t-value of 7.102 with a significance value of < 0.001, which was lower than 0.05. Therefore, the null hypothesis was rejected and the alternative hypothesis was accepted. These findings indicate that there was a statistically significant difference in students' learning motivation before and after the implementation of Kahoot!. The findings suggest that Kahoot! can serve as an alternative interactive learning medium for supporting student participation and learning motivation in Pancasila Education in vocational schools.

Keywords: interactive learning media; kahoot!; learning motivation; pancasila education; vocational school

INTRODUCTION

Pancasila is the state ideology of the Republic of Indonesia, functioning as the primary foundation in all aspects of social, national, and state life. The values contained therein reflect the nation's identity and serve as guidelines for every citizen's attitudes and actions. Pancasila Education in schools is an essential means to instill and internalize these values from an early age so that students can apply them in their daily lives (Risdiyana & Dewi, 2021). Ideally, Pancasila Education learning should encourage students active involvement through contextual and interactive approaches, aligned with constructivist theory which emphasizes meaningful learning through real activities (Purnamasari & Na'imah, 2020).

However, facts in the field show that Pancasila Education learning in Vocational High Schools (SMK) is often still dominated by one-way lecture and memorization methods that tend to be boring. Based on preliminary observations at SMK Negeri 1 Kota Kediri, many students showed a passive attitude, lacked interest in discussion, and were unenthusiastic about understanding the material. Consequently, students learning motivation decreased in a subject that is actually very vital in shaping citizenship character. When the teacher explained the material, the majority of students only listened without providing feedback, and group discussions were dominated by only a few students. To overcome the challenges of this digital era, technology-based learning media innovations are highly necessary to increase student learning motivation (Nurhasanah et al., 2025). One popular educational game platform is Kahoot!, which is designed to support the teaching process in a fun, competitive, and interactive manner (Wang & Tahir, 2020). Kahoot! allows teachers to present questions in real time, while students answer using their digital devices. Through real-time scores, rankings, and feedback, this tool serves not only as an assessment tool but also as a means to encourage active student engagement during the learning process. Tools like Kahoot! are particularly relevant because it can help reduce the boredom that often comes with conventional learning.

Theoretically, learning that actively involves students aligns with the principles of constructivism, which is the view that knowledge is constructed through learning experiences and interactions with the environment (Indramawan, 2025). In addition, the provision of immediate reinforcement through scores, feedback, and healthy competition in Kahoot! aligns with the principles of behaviorism, which emphasizes the relationship between stimulus, response, and reinforcement (Shahbana & Satria, 2020).

From the perspective of learning motivation, media that provide enjoyable experiences, reasonable challenges, and recognition of learning outcomes have the potential to inspire students to engage more actively. For these reasons, Kahoot! is seen as having a great opportunity to support a more lively and meaningful learning process.

Research by Rafnis (2019) and Putri (2023) concluded that Kahoot! is capable of creating a more interactive and enjoyable learning experience, as well as increasing students motivation and engagement in the learning process. These findings indicate that learning presented in an engaging manner tends to be more easily accepted compared to learning that relies solely on lectures or rote memorization. However, most existing research has focused on other subjects or different educational levels, so there is still limited empirical evidence regarding the use of Kahoot! in Pancasila education at the vocational high school (SMK) level. This situation indicates a research gap that needs to be filled so that the application of interactive learning media can be examined more specifically according to the characteristics of vocational students.

Based on that explanation, this study was carried out to find out the effect of using the interactive learning media Kahoot! on students learning motivation in the Pancasila Education subject in 11th grade TKR-1 at SMK Negeri 1 Kota Kediri. This study was based on the hypothesis that the use of interactive, enjoyable media that provides immediate feedback would be able to increase students learning motivation. Therefore, the aim of this study is to describe students learning motivation before and after using Kahoot!, and to determine whether there is a significant difference between the two conditions. The results of this study are expected to contribute to the development of more effective learning media, especially in Pancasila Education at the vocational high school level.

METHODS

This study employed a quantitative approach using a quasi-experimental design. The specific design used was a one-group pretest-posttest design, in which the study was conducted on a single group without a control group, and the conditions before and after the intervention treatment were compared (Aulia et al., 2022). This design was chosen because the study aims to determine the effect of using the Kahoot! interactive learning platform on students motivation to learn in the Pancasila Education subject. Using this design, the researcher can see changes in learning motivation more measurably through the pretest and posttest scores obtained from the questionnaire instrument.

The research was carried out at SMK Negeri 1 Kota Kediri, located at Jalan Veteran Number 9, Mojoroto District, Kota Kediri, East Java. The research subjects were students of 11th grade TKR-1 at SMK Negeri 1 Kota Kediri, totaling 34 students. The research population comprised all 780 11th-grade students at SMK Negeri 1 Kota Kediri, while the sample was selected using purposive sampling. This technique was chosen because the researcher selects the sample based on certain considerations relevant to the research objectives (Campbell et al., 2020), namely the class deemed most suitable for using Kahoot! as a learning media in Pancasila Education. 11th grade TKR-1 was chosen because it was considered representative, ready to participate in the research, and had obtained permission from the school authorities.

Data collection was conducted using a learning motivation questionnaire administered to students during the pretest and posttest. The instrument was designed to measure students' motivation before and after the implementation of the interactive learning media Kahoot!. The research instrument had previously undergone a content validation process by two expert validators and an empirical trial to ensure its feasibility and reliability as a research instrument. The research procedure began with the administration of the pretest to identify the initial condition of students' learning motivation. Following this, students participated in lessons utilizing the interactive learning media Kahoot!. After the treatment was completed, the posttest questionnaire was administered to assess students' learning motivation after the use of Kahoot!.

Data analysis was conducted with SPSS (Statistical Package for the Social Sciences). The pretest and posttest data were analyzed descriptively to get a general picture of the students learning motivation before and after the treatment. Next, prerequisite tests were carried out, including a normality test using Shapiro-Wilk and a homogeneity test using Levene's Test. Once the assumptions were met, hypothesis

testing was performed using a paired-sample t-test to determine whether there was a significant difference in learning motivation before and after using Kahoot!. The results of the analysis were then used to answer the research question and to determine whether the alternative hypothesis was accepted or the null hypothesis was rejected.

Overall, this research method was designed to obtain data that is objective, measurable, and relevant to the research objectives. The use of a quasi-experimental design, a questionnaire, and descriptive statistical analysis allows the researcher to assess the effectiveness of Kahoot! in enhancing students learning motivation more convincingly. Through these procedures, this study is expected to provide a clear picture of the impact of interactive learning media on students learning motivation in the Pancasila Education subject at SMK Negeri 1 Kota Kediri.

RESULTS AND DISCUSSION

Students Learning Motivation Before Using Kahoot!

The pretest results indicated that students learning motivation before the implementation of Kahoot! was relatively low. Of the 34 students involved in the study, 25 students (73,5%) were categorized as having low motivation, 8 students (23,5%) had moderate motivation, and only 1 students (3%) were categorized as highly motivated. The average pretest score was 79.12. These findings suggest that most students had not yet demonstrated optimal enthusiasm and engagement in the Pancasila Education learning process. From the perspective of Maslow's hierarchy of needs (Cahyono et al., 2022), students may not have fully achieved their needs for esteem and self-actualization. Limited opportunities to demonstrate competence and receive recognition can reduce students willingness to participate actively in learning activities. Therefore, innovative learning media are needed to create a more engaging and motivating learning environment.

Table 1. Pretest Learning Motivation

N	Mean	Minimum	Maximum	Standard Deviation
34	79,12	66	100	7.753

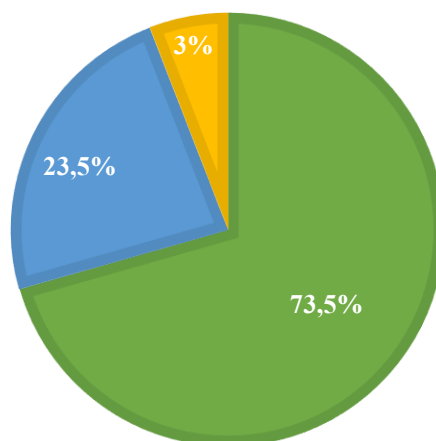


Figure 1. Percentage chart of pretest motivation levels

Students Learning Motivation After Using Kahoot!

Following the implementation of Kahoot!, students learning motivation showed considerable improvement. Posttest results revealed that only 6 (17,6%) students remained in the low-motivation category, while 15 (44,1%) students were categorized as moderate, 10 (29,4%) students as high, and 3 (8,9%) students as very high. In addition, the average motivation score increased from 79.12 to 93.85. The increase in motivation can be attributed to several interactive features provided by Kahoot!, including quizzes, leaderboards, scores, time limits, and immediate feedback. These features transform

learning into an enjoyable and competitive activity that encourages active participation. Students become more engaged because they are directly involved in answering questions and receiving instant responses regarding their performance.

Table 2. Posttest Learning Motivation

N	Mean	Minimum	Maximum	Standard Deviation
34	93,85	76	115	10.237

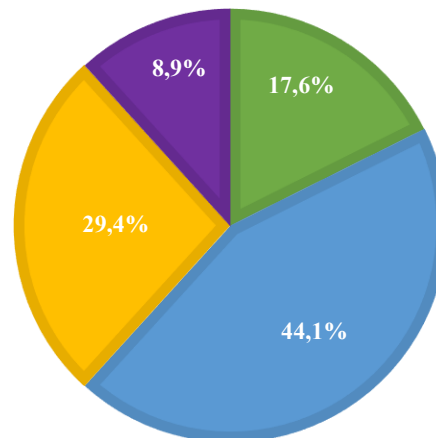


Figure 2. Percentage chart of posttest motivation levels

These findings are consistent with Self-Determination Theory proposed by Deci and Ryan, which emphasizes that motivation increases when learners needs for autonomy, competence, and relatedness are fulfilled (Imanuha, 2016). Kahoot! facilitates these needs by allowing students to make independent decisions, demonstrate their abilities, and interact with peers during learning activities. Furthermore, the findings align with behaviorist theory, particularly Skinner's concept of reinforcement (Stasolla et al., 2025). Immediate feedback, scores, and rankings serve as positive reinforcement that encourages students to maintain and improve their learning performance. As a result, students become more motivated to participate actively throughout the learning process.

The Effect of Kahoot! on Students Learning Motivation

Hypothesis testing was conducted to determine whether the change in students' learning motivation before and after the use of Kahoot! was statistically significant. Prior to hypothesis testing, normality and homogeneity tests were performed as prerequisite analyses. The results of the normality test using the Shapiro-Wilk test showed a significance value of 0.073 for the pretest data and 0.275 for the posttest data. Both values were greater than 0.05, so the pretest and posttest data were deemed to be normally distributed. Furthermore, the results of the homogeneity test using Levene's Test yielded a significance value of 0.067. This value was greater than 0.05, so the data variances were deemed homogeneous.

Table 3. Pre-requisite assumption testing

Test		Sig. Level (α)	Sig.	Decision
Normality (Shapiro-Wilk)	Pretest	> 0,05	0,073	normally distributed
	Posttest		0,275	normally distributed
Homogeneity (Levene's)	Pretest-Posttest		0,067	homogeneous variances

After the prerequisites were met, hypothesis testing was carried out using a paired sample t-test. The test results yielded a calculated t-value of 7.102 with a significance level of < 0.001. Since this significance level is less than 0.05, H_0 is rejected and H_1 is accepted. This means there is a significant difference in the students' learning motivation before and after the use of Kahoot!.

Table 4. Paired Sample t-Test Results

t-value	Sig. (2-tailed)	Sig. Level (α)	Decision
7.102	< 0,001	0,05	H0 rejected, Ha accepted

These results support Vygotsky's constructivist theory, which emphasizes that knowledge is developed through active participation and social interaction (Indramawan, 2025). Through Kahoot!, students engage in collaborative and interactive learning experiences that foster deeper involvement and motivation. The gamification elements embedded within the platform create a learning atmosphere that is both enjoyable and meaningful, ultimately encouraging students to participate more actively. The findings are also consistent with previous studies conducted by Rafnis (2019), Putri (2023), and Gayatri (2024), which concluded that Kahoot! significantly enhances students motivation and engagement in learning activities. Therefore, Kahoot! can be considered an effective interactive learning medium for improving learning motivation among vocational high school students.

CONCLUSION

This study concludes that the use of Kahoot! interactive learning media significantly improves students learning motivation in the Pancasila Education subject at SMK Negeri 1 Kota Kediri. Before the implementation of Kahoot!, most students demonstrated low levels of learning motivation, with an average pretest score of 79.12. After the intervention, students motivation increased considerably, as indicated by the average posttest score of 93.85 and the greater number of students categorized as having moderate, high, and very high motivation. The results of the prerequisite tests showed that the pretest and posttest data were normally distributed, with significance values of 0.073 and 0.275, respectively, and had homogeneous variances with a significance value of 0.067. Furthermore, the results of the paired-sample t-test showed a calculated t-value of 7.102 with a significance level of < 0.001. This value is smaller than the significance level of 0.05; therefore, the null hypothesis was rejected and the alternative hypothesis was accepted. Thus, there is a significant difference in students' learning motivation before and after the use of Kahoot!. The research results indicate that Kahoot! can serve as an alternative learning medium that supports a more interactive and engaging Pancasila Education learning process and encourages student participation. Teachers may consider utilizing this medium as a form of instructional innovation that leverages technology in alignment with the characteristics of students in vocational high schools.

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