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The effect of using web-based Kahoot media on the learning outcomes of grade X students in informatics subject at MAN Sidrap

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Abstrak

Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan media Kahoot berbasis web terhadap hasil belajar siswa kelas X di MAN Sidrap. Kahoot merupakan platform pembelajaran berbasis permainan yang dirancang untuk meningkatkan keterlibatan siswa melalui kuis interaktif secara daring. Penelitian ini menggunakan pendekatan kuantitatif dengan desain quasi eksperimen, yang melibatkan dua kelompok: kelas eksperimen yang menggunakan media Kahoot dan kelas kontrol yang menggunakan metode pembelajaran konvensional. Instrumen penelitian yang digunakan berupa tes hasil belajar.

Hasil analisis menunjukkan bahwa rata-rata hasil belajar siswa pada kelas eksperimen sebesar 75,29, sedangkan pada kelas kontrol sebesar 61,55. Perbedaan yang signifikan ini menunjukkan bahwa penggunaan media Kahoot berpengaruh positif terhadap peningkatan hasil belajar siswa. Penerapan Kahoot terbukti menciptakan suasana belajar yang lebih menarik, interaktif, dan kompetitif sehingga mampu meningkatkan motivasi serta pemahaman siswa terhadap materi pelajaran.

Kata kunci : Kahoot, media pembelajaran, hasil belajar, pembelajaran interaktif

Abstract

This study aims to determine the influence of using web-based Kahoot media on the learning outcomes of Grade X students at MAN Sidrap. Kahoot is a game-based learning application designed to enhance student engagement through interactive online quizzes. This research employed a quantitative method with a quasi-experimental design. The research sample consisted of two classes: the experimental class using Kahoot media and the control class using conventional teaching methods. The instrument used was a learning outcomes test.

The analysis results showed that the average learning outcome of students in the experimental class was 75.29, while the control class had an average of 61.55. This difference indicates that the use of Kahoot media had a positive and significant effect on improving student learning outcomes. Kahoot was proven to create a more engaging, interactive, and competitive learning environment, thereby increasing student motivation and understanding of the material.

***Keywords**: Kahoot, learning media, learning outcomes, interactive learning.*

Introduction

Education plays a fundamental role in developing individuals' physical and spiritual potential. According to Law Number 20 of 2003 on the National Education System, education is a conscious and planned effort to create a learning atmosphere and learning process so that students can actively develop their potential. This process aims not only to shape intelligent and moral individuals but also to prepare them to adapt to the rapidly changing digital era.

The advancement of information technology has significantly contributed to the field of education, particularly in terms of instructional media. Technology-based learning media function not only as visual aids but also as communication bridges between teachers and students. One of the increasingly popular instructional media tools is web-based interactive platforms that make learning more dynamic and engaging.

Kahoot, a game-based learning platform, has become a widely adopted digital tool in education. It allows educators to create interactive quizzes that students can access in real time via digital devices. This application fosters a fun, competitive, and participatory learning environment, which is believed to boost students' motivation and engagement in the learning process.

However, in practice, many educators still rely on conventional methods such as PowerPoint presentations, especially in informatics classes. Based on preliminary observations at MAN Sidenreng Rappang, it was found that students' understanding of informatics subjects remains relatively low, which suggests a need for more innovative teaching approaches to improve learning outcomes.

This study was conducted in response to that challenge by examining the effectiveness of web-based Kahoot as an innovative instructional medium for improving student learning outcomes. By integrating Kahoot into the teaching process, it is expected that students' motivation, comprehension, and academic performance will show significant improvement.

This research adopts a quantitative approach using a quasi-experimental design to compare the learning outcomes of students taught with Kahoot versus those taught using traditional methods. This approach aims to provide objective and measurable data on the impact of web-based media use on student achievement.

Furthermore, the study contributes practical benefits to teachers and students at MAN Sidenreng Rappang and serves as a reference for developing broader educational technology policies. The findings are also expected to enrich the academic discourse on the use of interactive digital tools in teaching and learning.Based on the above background, the researcher is interested in conducting a study titled "The Influence of Using Web-Based Kahoot Media on Student Learning Outcomes in Informatics Subject for Grade X at MAN Sidenreng Rappang."

Method

This study applied a quantitative research approach to examine the relationship between the use of web-based Kahoot media and student learning outcomes. Quantitative research emphasizes objective measurement and statistical analysis of numerical data to understand patterns, effects, or relationships between variables. It was chosen because the research aimed to measure the effect of a specific intervention—Kahoot—on students' academic performance.

The research design used was quasi-experimental, specifically a pretest-posttest control group design. This approach involved two groups: an experimental group that received instruction using Kahoot media and a control group that experienced traditional teaching methods without Kahoot. Both groups took a pretest before the treatment and a posttest afterward. This design enabled the researcher to identify any significant differences in learning outcomes caused by the intervention.

The study focused on two main variables. The independent variable was the use of Kahoot as a web-based interactive learning platform. The dependent variable was the students' learning outcomes in the subject of Informatics. These outcomes were measured using test scores obtained after the instructional sessions. The goal was to determine whether the integration of technology in the form of Kahoot would improve students' academic achievement.

To ensure clarity and consistency, the research variables were defined operationally. Kahoot was described as a game-based digital learning platform that allows students to answer quizzes interactively in real time. Learning

outcomes referred to students' test scores, which reflected their understanding and mastery of the material presented during the lessons. These operational definitions helped ensure that the variables were measurable and aligned with the research objectives.

The research population consisted of Grade X students at MAN Sidenreng Rappang, totaling 131 individuals. From this population, a sample of 54 students was selected using random sampling techniques to ensure fairness and avoid bias. The sample was divided equally into two groups, each consisting of 27 students. The experimental group used Kahoot during learning sessions, while the control group learned through conventional methods like PowerPoint presentations.

Data collection was carried out using two main techniques: documentation and testing. Documentation was used to collect school-related information such as student demographics, class schedules, and facilities. Testing was used to measure students' knowledge through a multiple-choice exam consisting of 30 items. The same test was administered both before and after the intervention to assess any improvement in learning outcomes.

The data obtained from the tests were analyzed using statistical techniques. Descriptive statistics such as mean scores were calculated to compare the performance of the experimental and control groups. Inferential statistics, particularly the t-test, were applied to determine whether the differences observed between the two groups were statistically significant. These analyses helped the researcher draw conclusions about the effectiveness of Kahoot as a learning tool.

To ensure the credibility of the findings, the test instruments underwent a validation process involving expert judgment. The items were carefully reviewed to ensure they aligned with the curriculum and measured the intended learning objectives. Reliability was also considered by checking the consistency of the test scores. These steps were essential to ensure that the results of the study were both valid and trustworthy.

Result and Discussion

This study aimed to determine whether the use of web-based Kahoot media influenced student learning outcomes in Informatics among Grade X students at MAN Sidenreng Rappang. The data were collected through post-tests administered to both the experimental and control groups after the learning sessions. A comparison of the students' scores provided insight into the effectiveness of the media used.

The experimental group, which used Kahoot as an interactive learning tool, consisted of 27 students. The control group, which used traditional methods such as PowerPoint presentations, also included 27 students. The same test instrument was administered to both groups. The maximum score was 100, and the test contained 30 multiple-choice questions.

The average score for the experimental group was 75.29, while the control group obtained an average score of 61.66. This indicates a difference of 13.63 points, suggesting that students who engaged with Kahoot performed significantly better on the post-test compared to those taught through conventional methods.

Below is the summary of learning outcomes between the two groups:

Group	Number of Students	Highest Score	Lowest Score	Total Score	Average Score
Experimental	27	93	56	2033	75.29

Group	Number of Students	Highest Score	Lowest Score	Total Score	Average Score
Control	27	90	45	1665	61.66

Based on the classification of scores, in the experimental group, 16 out of 27 students (59.26%) scored 75 or higher, while only 4 students (14.81%) in the control group achieved scores in the same range. This contrast reflects a notable improvement in academic performance within the group exposed to Kahoot.

The data were further analyzed using a descriptive statistical approach. The score distribution clearly showed that students in the experimental group not only scored higher but also demonstrated better consistency in achieving satisfactory performance levels. Fewer students in this group scored below 60, indicating a smaller performance gap compared to the control group.

This result affirms that the use of interactive and engaging learning platforms, such as Kahoot, can motivate students to participate actively in the learning process. It also provides immediate feedback, which contributes to better understanding and retention of information.

In conclusion, the results support the hypothesis that web-based Kahoot media has a positive and significant influence on student learning outcomes in Informatics. The findings validate the assumption that technology-enhanced learning environments can improve academic achievement when properly implemented.

Discussion

The findings of this study revealed a statistically significant improvement in learning outcomes for students who used Kahoot compared to those who followed traditional methods. This aligns with previous research that highlights the benefits of game-based learning in enhancing student motivation, engagement, and academic performance.

One of the key factors contributing to the improved performance in the experimental group is the interactivity offered by Kahoot. Unlike passive learning through PowerPoint, Kahoot enables students to answer questions in real time, engage in friendly competition, and receive instant feedback—all of which reinforce their understanding of the material.

Moreover, the visual and gamified features of Kahoot likely contributed to increased student attention and focus during the lesson. Gamification in education has been shown to trigger positive emotional responses, such as excitement and curiosity, which are known to facilitate deeper learning.

The competitive nature of the quiz also played a role in increasing student motivation. Students often strive to outperform their peers, and the immediate scoreboard provided by Kahoot adds a dynamic layer of excitement that encourages active participation. This, in turn, can lead to greater retention of knowledge.

Additionally, the accessibility of Kahoot across various devices—such as smartphones, tablets, and laptops—allowed students to engage with the content comfortably. In contrast, the control group had limited interaction with the learning material, leading to lower engagement levels and, consequently, lower test scores.

The findings also support the constructivist learning theory, which emphasizes active participation and learner-centered environments. By involving students in the construction of knowledge through interactive technology, Kahoot creates

opportunities for meaningful learning experiences.

However, it is important to acknowledge that the effectiveness of Kahoot may also depend on the way it is implemented. Poorly designed quizzes, inadequate internet access, or limited teacher facilitation can reduce its effectiveness. Therefore, training teachers to use such platforms effectively is essential for maximizing their potential. the use of web-based Kahoot media in Informatics education has proven to be more effective than traditional methods in improving student learning outcomes. This supports the growing body of literature that advocates for the integration of digital tools in the classroom to promote active and engaging learning experiences.

Conclusion

Based on the results and analysis of this study, it can be concluded that the use of web-based Kahoot media has a significant and positive impact on student learning outcomes in the subject of Informatics. The average score of the experimental group, which used Kahoot, was considerably higher than that of the control group, which followed conventional teaching methods. This indicates that Kahoot serves as an effective tool for enhancing students' academic performance.

The interactive and engaging nature of Kahoot contributed to increased student motivation, participation, and focus during the learning process. By turning quizzes into competitive and enjoyable activities, students became more involved and attentive, resulting in better retention and understanding of the material. These findings confirm that digital learning platforms, when appropriately utilized, can foster an active and student-centered learning environment.

In conclusion, the integration of Kahoot as a web-based learning media is a valuable innovation in education. It not only improves learning outcomes but also promotes a more enjoyable and interactive classroom atmosphere. Therefore, educators are encouraged to adopt similar technology-based strategies to support more effective and engaging teaching and learning experiences.

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