



The Effect of Kahoot-Type Game-Based Learning Model on the Learning Motivation of Students at SMPN 3 Sipoholon - North Tapanuli Regency

Masito Anggini Magdalena P^{1*}, Elvri Teresia Simbolon², Sandy Ariawan³, Betty A. S. Pakpahan⁴, Robert Juni Tua Sitio⁵

¹Student, Pendidikan Agama Kristen, Fakultas Ilmu Pendidikan Kristen, IAKN Tarutung
^{2,3,4,5}Lecturer, Fakultas Ilmu Pendidikan Kristen, IAKN Tarutung

*correspondence: angqipangaribuanpku2003@gmail.com

ABSTRACT

The purpose of this study is to examine the positive and significant effect of the Kahoot-type Game-Based Learning Model on the learning motivation of seventh-grade students in Christian Religious Education and Character at SMP Negeri 3 Sipoholon for the 2024/2025 academic year. The research employed a quantitative method. The population consisted of 102 seventh-grade students at SMP Negeri 3 Sipoholon in 2024/2025, and a sample of 34 students from class VII-B was selected using cluster sampling. Data were collected using a closed-ended positive questionnaire consisting of 14 items. The results of the data analysis indicate that the Kahoot-type Game-Based Learning Model has a positive and significant effect on the learning motivation of seventh-grade students in Christian Religious Education and Character at SMP Negeri 3 Sipoholon for the 2024/2025 academic year, as expected. This was evidenced by the significance test, which yielded $t_{count} > t_{table}$ ($\alpha=0.05$; $df=n-1=33$), specifically $9.260 > 2.042$. Thus, the alternative hypothesis (H_a), which states that the Kahoot-type Game-Based Learning Model has a positive and significant effect on the learning motivation of seventh-grade students in Christian Religious Education and Character at SMP Negeri 3 Sipoholon for the 2024/2025 academic year, is accepted, while the null hypothesis (H_0), which states that there is no effect, is rejected.

Keywords: Kahoot-Type Game, Based Learning Model, Learning Motivation

INTRODUCTION

Education plays a crucial role in all aspects of human life. According to the Republic of Indonesia Law No. 20 of 2003, education is a deliberate and organized effort to create a learning environment and learning processes that enable students to develop their potential. Schools serve as the core of formal education, where reciprocal interactions occur between teachers and students in the teaching and learning process, with teachers acting as educators and students as learners who receive instruction based on predetermined objectives. To achieve these objectives, both teachers and students actively engage in the learning process.

As explained by Tri Rumahdi, motivation plays a critical role in achieving desired goals, whether in the context of teaching or other objectives. Therefore, motivation is essential for the intellectual development of a nation. In the learning context, motivation is defined as a condition within an individual that drives them to take action to achieve their goals. Education is inseparable from the concept of learning, as learning is inherently a component of education. Learning is essentially a process that helps students acquire knowledge. The teaching and learning process aims to develop high-quality students, and the quality of learning largely depends on the motivation students acquire during the learning process.

Learning motivation is an internal drive that encourages students to take action. Motivation can be categorized into two types: intrinsic and extrinsic. Intrinsic motivation arises from within an individual, reflecting a personal desire to act, while extrinsic motivation refers to external factors that stimulate engagement in learning. In other words, motivation is an internal energy that drives individuals to engage in specific activities; thus, it is necessary for effective learning. For example, when someone aspires to become a teacher, they continuously strive to achieve this goal. This effort exemplifies a motivated individual.

In the context of Christian Religious Education, student learning motivation refers to the internal drive that encourages students to study God's Word and equips them with knowledge of divine teachings through Christian Religious Education. As stated in Psalm 119:66, *"Teach me knowledge and good judgment, for I trust your commands."* This verse emphasizes the importance of seeking wisdom and knowledge while relying on God during the learning process.

Based on observations at SMP Negeri 3 Sipoholon during the teaching of Christian Religious Education and Character, some students exhibit low motivation in the learning process. This is indicated by: 1) students being reluctant to study, 2) lack of internal drive, 3) limited awareness of responsibilities as learners, reflected in low engagement during learning activities, and 4) passive behavior in class, resulting in poor interaction with teachers and feelings of boredom or sleepiness during lessons. To address these issues, a more engaging and creative learning model is required to foster student enthusiasm. An appropriate approach is the Kahoot-type Game-Based Learning model.

One deliberate effort by teachers is to use the Kahoot-type Game-Based Learning model to enhance student learning motivation. This learning model actively engages students in thinking, making the learning process more dynamic and preventing boredom since each student has specific responsibilities.

Student learning motivation can be increased through the implementation of game-based learning. This approach shifts the learning paradigm from teacher-centered to student-centered (Winatha & Setiawan, 2020). Game-based learning is an educational approach that uses games as a medium to deliver learning materials more effectively (Aymajaya, Susanta, & Utari, 2023). It creates a joyful and engaging learning environment, enabling students to better understand the subject matter (Siregar & Melyani Sari Petu, 2023).

The Kahoot application can be used to implement Game-Based Learning. Kahoot! is a free and user-friendly educational game platform with three main features—Quiz, Jumble, Discussion, and Survey—that make learning more interactive and engaging for students (Kudri & Maisharoh, 2021).

Christian Religious Education (PAK) plays a vital role in shaping students' character based on Christian values. However, challenges such as low student motivation often arise, mainly due to unengaging teaching methods. In the era of information technology, innovation in teaching methods is essential to increase student motivation. Game-Based Learning (GBL), which uses games as a medium to enhance student engagement, has become widely applied in education. Kahoot!, a quiz-based educational game platform, effectively presents learning content in a fun and competitive format, capturing students' interest and enhancing their learning motivation.

By utilizing Kahoot! in PAK, the teaching and learning process becomes more interactive, enjoyable, and motivating. This is particularly important for seventh-grade students transitioning from elementary to junior high school, as they face changes in learning patterns requiring greater independence. Therefore, implementing the Kahoot-type Game-Based Learning model is expected to improve students' motivation in PAK lessons. Research indicates a significant increase in students' learning motivation due to the application of game-based learning models (Monalisa, 2023). Consequently, teachers should create a novel and stimulating learning environment while motivating students to be enthusiastic and capable, particularly in mastering lesson content. The Kahoot-type Game-Based Learning model is thus highly suitable for enhancing both students' learning motivation and their critical thinking skills.

METHODS

Sugiyono defines research methodology as a scientific method used to collect data with the aim of achieving specific purposes. The method employed in this study is quantitative research. Quantitative research is based on the collection and analysis of numerical data to explain, predict, or test research phenomena. Data collection is conducted using research instruments, and data analysis is quantitative/statistical, with the purpose of testing the established hypotheses. This study employs a quantitative descriptive approach.

The research method used in this study is quantitative, with the type of research being experimental. The specific experimental design applied is a pre-experimental design in the form of a one-group pretest-posttest. This design involves conducting research on a single group without a comparison group. In a one-group pretest-posttest experimental design, the selected group or sample is given a treatment, and the outcomes are subsequently observed and analyzed.

RESULT AND DISCUSSION

Learning through the Game-Based Learning (GBL) model has the potential to shift the paradigm of education from being teacher-centered to more student-centered. Constructivist learning theory explains that the learning process becomes more meaningful when students are actively involved in constructing their own knowledge. Therefore, the implementation of more varied learning models is essential. Ideally, teaching and learning should occur in an enjoyable and memorable environment.

One effective approach is Game-Based Learning. According to Firoza (as cited in Mukaramah et al., 2021), this model integrates learning material with games as part of the educational process, encouraging student interaction. Azam and Wong (as cited in

Asmaka, 2019) further explain that Game-Based Learning is an engaging, game-oriented learning model that actively involves students, with the ultimate goal of developing their knowledge and skills. Game-Based Learning provides learning experiences that enhance student participation and collaboration in the learning process (Kudri & Maisharoh, 2021). Asmaka (2019) adds that this model consists of self-contained units with a clear beginning, a game-based process, and a defined “winning condition.” This model is often applied in both formal classroom and online learning settings.

GBL works by making content or technology more engaging, encouraging students to participate in desired behaviors, thereby increasing both participation and motivation (Erhel & Jamet, 2016). Moreover, game-based learning provides richer experiences in knowledge construction, promotes appreciation of diverse perspectives, embeds learning in realistic and contextually relevant situations, and enhances self-awareness during the knowledge-building process.

There are several reasons why Game-Based Learning can be effectively applied in education, as outlined by Prensky (as cited in Andicha, 2015). Games have clear objectives, which motivate students. They provide enjoyment and excitement, capturing students’ full attention and concentration. Games are interactive, requiring active participation, and often involve social interaction, strengthening relationships among students. They provide outcomes and feedback that support learning, include rewards such as “winning labels” to give students a sense of achievement, present conflicts, competitions, and challenges that stimulate engagement, and involve problem-solving, teaching students to think creatively when facing challenges.

In implementing GBL, it is essential to consider motivational aspects (Cress, as cited in Andicha, 2009). Learning tools should incorporate elements of motivation, interactivity, and entertainment while aligning with the applicable curriculum. By utilizing Digital Game-Based Learning, students can enjoy playing games without realizing that they are simultaneously learning the educational content embedded within them. This aligns with effective learning theory, in which students learn willingly and remain motivated to continue learning through engaging tools.

Game-Based Learning (GBL) is an instructional approach that integrates game elements into the learning process, aiming to create more engaging and interactive experiences for students. Some of the benefits of GBL include enhancing student engagement in learning, supporting problem-solving and decision-making skills, and providing immediate feedback to improve student comprehension. Based on expert opinions, it can be concluded that a student-centered GBL model that incorporates game elements can increase student involvement in the learning process and strengthen their understanding of the material.

Kahoot-Type Game-Based Learning Model

The suboptimal use of learning media in the teaching and learning process can affect students’ learning outcomes. Kahoot is an interactive, online game-based learning media that allows users to create, share, and play educational games within a specified time limit. Engaging learning media can support the teaching and learning process and has the potential to increase students’ motivation. To optimize the learning process and achieve educational objectives, Kahoot-based game learning media can be utilized. Kahoot is a web tool for creating quizzes, discussions, and surveys in an engaging manner, and it can

be used in the classroom to make learning more interesting and motivate students to participate actively (Faznur et al., 2020).

Kahoot is an interactive game-based learning medium that is easily accessible to both students and teachers for free via smartphone applications through the Play Store. It offers a variety of features, including quizzes, games, discussions, and surveys, which can be played individually or in groups. This application is particularly suitable for the digital generation, who are drawn to visually appealing and feature-rich interfaces, thereby supporting the teaching and learning of Christian Religious Education at the junior high school level. Kahoot provides a platform that allows educators to create, share, and play educational games and trivia quizzes in minutes. As a visual learning medium, it captures students' attention, helping them focus on relevant learning content. Its interactive nature fosters a more engaging and enjoyable learning environment, encouraging active student participation and healthy competition among peers (Perdana et al., 2020).

Kahoot is an online quiz application or website that creates an interactive educational quiz atmosphere in the classroom (Daryanes & Ririen, 2020). It is designed specifically for learning activities and can be used as an interactive learning medium for pre-tests, post-tests, and practice exercises (Limin & Mona, 2022). Teachers can deliver learning content through quiz questions, which students answer to receive scores (Ilmiyah & Sumbawati, 2021). Kahoot! allows students to participate in online quizzes within the classroom and provides two website addresses: <https://kahoot.com/> for educators and <https://kahoot.it/> for learners. The platform is free to access, including all its features, and can be used for online quizzes, surveys, and discussions, each with multiple modes of play. An internet connection is required, and while Kahoot can be played individually, it is primarily designed for group-based gameplay.

The procedure for using Kahoot in classroom learning involves the following steps: first, the teacher creates an account at <https://kahoot.com/>; second, selects or prepares material using the available features; third, divides the class into groups or allows individual participation and accesses <https://kahoot.it/>; fourth, displays multiple-choice questions on the teacher's main device; and finally, students select answers from their own devices within the allotted time. Based on this, Kahoot can be understood as a web-based platform designed to create a more engaging and enjoyable learning experience through interactive quizzes. It is expected to enhance student engagement and motivation, unlocking each student's potential. Additionally, classroom use of Kahoot encourages responsible and beneficial use of digital devices such as smartphones and laptops.

The Influence of Kahoot-Type Game-Based Learning on Learning Motivation

Research indicates that Kahoot usage in learning can increase students' motivation, as interactive quizzes break monotony and stimulate engagement. It fosters healthy competition, encouraging students to strive for higher scores. Kahoot enhances involvement, as students are more engaged due to the challenges it presents, and provides immediate feedback, helping students quickly improve and develop a better understanding of the material. According to Torrente, Game-Based Learning is the use of games with serious objectives—namely educational goals—as tools to support meaningful learning processes, thereby motivating students.

To optimize learning and achieve educational objectives, Kahoot can be used as a game-based learning media. This web tool facilitates the creation of quizzes, discussions, and surveys in an engaging way, making classroom learning more attractive and motivating students to study (Faznur et al., 2020). Based on expert opinions, it can be concluded that the Kahoot-type Game-Based Learning model positively influences students' learning motivation.

After tabulating the respondents' answers, the data were processed and analyzed. Based on the research data description, the overall average of students' learning motivation at SMPN 3 Sipoholon, North Tapanuli Regency, for the 2024/2025 academic year increased from a pre-test score of 42.24 to a post-test score of 51.29. This indicates an increase in learning motivation of 9.06 points due to the implementation of the Kahoot-type Game-Based Learning model.

From the distribution of pre-test data, the highest achievement was found in item number 5, with a score of 117 and an average value of 3.44, where most students reported that they frequently asked the Christian Religious Education (PAK) teacher questions about the material to broaden their understanding. The lowest achievement was in item number 8, with a score of 92 and an average of 2.71, where most students reported that when the teacher gave assignments and students completed them early, they received praise from the teacher.

Regarding the pre-test indicators, the highest was indicator number 2, with an average score of 3.20, which measures "the presence of drive and need in learning." The lowest indicator was number 3, with an average score of 2.71, representing "the presence of activities that attract attention during learning."

In the post-test data, the highest achievement was found in item number 2, with a score of 134 and an average of 3.94, where most students reported that when the PAK teacher finished explaining the material and assigned tasks, students completed them diligently. The lowest achievement was in item number 7, with a score of 117 and an average of 3.44, where students reported that when the teacher asked questions about the material, and students provided varying answers, they were able to defend their responses.

For the post-test indicators, the highest was indicator number 1, with an average score of 3.74, representing "the desire and motivation to succeed." The lowest was indicator number 2, with an average of 3.55, representing "the presence of drive and need in learning."

Based on the hypothesis test using the t-test, the calculated t-value ($t_{\text{calculated}} = 9.260$) was greater than the table value ($t_{\text{table}} = 2.042$), thus H_0 was rejected and H_a accepted. This indicates that the Kahoot-type Game-Based Learning model has a significant effect on the learning motivation of students at SMPN 3 Sipoholon for the 2024/2025 academic year. The acceptance of this hypothesis is illustrated in the following curve.

From the correlation test, which examines the positive relationship between variable X and variable Y, the correlation coefficient obtained was $r_{xy} = 0.577$, compared with the table value ($r_{\text{table}}, \alpha = 0.05; n = 34$) of 0.339. Since $r_{\text{calculated}} > r_{\text{table}}$ ($0.577 > 0.339$), there is a positive relationship between the Kahoot-type Game-Based Learning model and the learning motivation of seventh-grade Christian Religious Education students at SMPN 3 Sipoholon for the 2024/2025 academic year.

From the regression analysis, it was found that: (a) the regression equation is $Y = 48.16 + 0.74X$, indicating that with a constant of 48.16, for each unit increase in the Kahoot-type

Game-Based Learning model, students' learning motivation in Christian Religious Education and Character increases by 0.74; (b) from the coefficient of determination, $r^2 = 0.332$, indicating that 33.2% of the variation in students' learning motivation is influenced by the Kahoot-type Game-Based Learning model in Christian Religious Education and Character for seventh-grade students at SMPN 3 Sipoholon during the 2024/2025 academic year.

CONCLUSION

Based on the comparison between t_{count} and t_{table} , where $t_{count} = 9.260 > t_{table} = 2.042$, the findings of this study conclude that the Game-Based Learning model using Kahoot has a significant effect on the learning motivation of students at SMP Negeri 3 Sipoholon, North Tapanuli Regency, in the 2024/2025 academic year. Based on the calculation of r_{xy} using the Pearson product-moment correlation formula, the obtained value of $r_{xy} = 0.577$ was compared with the r_{table} value ($\alpha = 0.05$; CI = 95%; $n = 34$), which is 0.339. The comparison shows $r_{count} > r_{table}$ ($0.577 > 0.339$). Therefore, it can be concluded that there is a positive correlation between the Game-Based Learning model using Kahoot and the learning motivation of seventh-grade students in Christian Religious Education and Character Education at SMP Negeri 3 Sipoholon in the 2024/2025 academic year. Based on the test of the coefficient of determination, the effectiveness percentage of variable X on Y was calculated by multiplying the value of r^2 by 100% ($r^2 \times 100\%$). The calculation produced $r^2 = 0.332$. From this value, it can be determined that the contribution of the Game-Based Learning model using Kahoot to students' learning motivation in Christian Religious Education and Character Education at SMP Negeri 3 Sipoholon in the 2024/2025 academic year is ($r^2 \times 100\%$) = $0.332 \times 100\% = 33.2\%$. Based on the results of the data analysis, it is known that the overall average learning motivation of students at SMP Negeri 3 Sipoholon, North Tapanuli Regency, in the 2024/2025 academic year increased from the pre-test score of 42.24 to the post-test score of 51.29. This indicates an improvement in students' learning motivation by 9.06 points as a result of using the Game-Based Learning model with Kahoot.

BIBLIOGRAPHY

- Agus, R. T., et al. (2021). Effectiveness of problem-based model learning on learning outcomes and student learning motivation. *International Journal of Multi Science*, 1(10), 3.
- Ananda, R., & Hayati, F. (2020). *Variabel belajar: Komplikasi konsep*. Medan: Pusdikra Mitra Jaya.
- Arikunto, S. (2010). *Prosedur penelitian: Suatu pendekatan praktik* (Edisi revisi VI). Jakarta: Rineka Cipta.
- Arikunto, S. (2015). *Prosedur penelitian: Suatu pendekatan praktik*. Jakarta: Rineka Cipta.
- Sidjabat, B. S. (2017). *Mengajar secara profesional*. Bandung: Andi.
- Dimiyati, & Mudjiono. (2010). *Belajar dan faktor-faktor yang mempengaruhinya*. Jakarta: Rineka Cipta.

- Erhel, S., & Jamet, E. (2016). The effects of goal-oriented instructions in digital game-based learning. *Computers in Human Behavior*, 60, 514–523. <https://doi.org/10.1016/j.chb.2016.02.026>
- Siregar, E., & Nara, H. (2014). *Teori belajar dan pembelajaran*. Bogor: Ghalia Indonesia.
- Halimah, S. (2021). Efektivitas penggunaan media pembelajaran berbasis aplikasi Kahoot dalam meningkatkan motivasi belajar siswa. *Dinamika Sosial Jurnal Pendidikan Ilmu Pengetahuan Sosial*, 2(3). <https://doi.org/10.18860/dsjpips.v2i3.3533>
- Uno, H. B. (2016). *Teori motivasi dan pengukurannya*. Jakarta: Bumi Aksara.
- Hariato, G. P. (2012). *Pendidikan Agama Kristen dalam Alkitab dan dunia pendidikan masa kini*. Yogyakarta: Andi.
- Simatupang, H., Simatupang, R., & Napitupulu, T. (2020). *Pengantar Pendidikan Agama Kristen*. Yogyakarta: Andi Offset.
- Sari, I. (2018). Motivasi belajar mahasiswa program studi manajemen dalam penguasaan keterampilan berbicara (speaking) bahasa Inggris. *Manajemen Tools*, 9(1), 41–52.
- Setiawan, M. A. (2020). *Belajar dan pembelajaran*. Ponorogo: Uwais Inspirasi Indonesia.
- Krismony, N. P. A., et al. (2020). Pengembangan instrumen penilaian untuk mengukur motivasi belajar siswa SD. *Jurnal Ilmiah Pendidikan Profesi Guru*, 2(3), 253.
- Mayasari, N., & Alimuddin, J. (2023). *Strategi meningkatkan motivasi belajar siswa*. Jawa Tengah: Rizquna.
- Sugiyono. (2022). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Bandung: Alfabeta.
- Rahman, S. (2021). Pentingnya motivasi belajar dalam meningkatkan hasil belajar. *Prosiding Seminar Nasional Pendidikan Dasar*, 292.
- Sari, R. M., et al. (2021). Increasing students' critical thinking skills and learning motivation using inquiry mind map. *International Journal of Emerging Technologies in Learning*, 16(3), 6.
- Lestari, T. (2020). *Cara praktis meningkatkan motivasi siswa*. Yogyakarta: Deepublish.
- Rumhadi, T. (2017). Urgensi motivasi dalam proses pembelajaran. *Jurnal Diklat Keagamaan*, 11(1), 35.
- Republik Indonesia. (2003). *Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional*. Jakarta: Sekretariat Negara.
- Wang, X., et al. (2016). [Title of article]. *Journal of Infectious Diseases*, 214(10), 1613. <https://doi.org/10.1093/infdis/jiw238>