

The effect of using game-based learning (bamboozle) on the learning motivation of fourth grade students at Madrasah Ibtidaiyah Payungan, Kaliwungu District, Semarang Regency

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ABSTRACT

The transformation of education in Indonesia requires the world of education to be able to adapt to changing times, which is the widespread use of various kinds of digital technology in the world of education. Digital technology has become an important part of today's learning methods. The lack of teacher understanding of the use of renewable learning media methods and media causes low student motivation. The purpose of this study is the first to describe how the use of Game-Based Learning (Baamboozle) in the IPAS subject of grade IV students of Madrasah Ibtidaiyah Payungan in the 2024/2025 academic year, the second to describe how high is the learning motivation of grade IV students of Madrasah Ibtidaiyah Payungan in the IPAS subject, the third to describe how big is influence of the use of Game-Based Learning (Baamboozle) on the students' learning motivation of IV grade students of Madrasah Ibtidaiyah Payungan in the IPAS subject in the 2024/2025 academic year. This research method uses a quantitative approach. The population in this study was the IV grade students of Madrasah Ibtidaiyah Payungan, Kaliwungu Semarang with a total of 39 students. The research was conducted at Madrasah Ibtidaiyah Payungan with sampling using complete sampling totaling 39 students. While the data collection is done through observation, questionnaires and documentation where the instrument of the questionnaire has been validated and reliable. Furthermore, it was analyzed by unit analysis and prerequisite tests and ends with hypothesis testing using product moment and simple linear regression tests. The results of this study were 1) The level of the used of Game-Based learning (Baamboozle) in IV grade students of Madrasah Ibtidaiyah Payungan was very high, seen in the classification of its value shows 38 students were in the category of very high value category. 2) The level of students' learning motivation of IV grade students of Madrasah Ibtidaiyah Payungan showed the highest value of 80 and the lowest value was 72, while the mean was 77,15 with a standard deviation of 2,37. It was known that the value of student learning motivation in IPAS lessons was 20 students got quite high scores. 3) on the product moment test obtained 0,758 with sig. (2 tailed) 0,00, it could be concluded that between the use of Game-Based Learning (Baamboozle) and students' learning motivation had significant relationship

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Introduction

The transformation of education in Indonesia demands the educational world to adapt to the changes of the times, where the use of various digital technologies in education is becoming increasingly prevalent. Digital technology has become an essential part of modern learning methods. The Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, Article 3, emphasizes that the function of national education focuses on the development of capabilities and the formation of character and a dignified civilization, thus fostering the intelligence of the nation. Furthermore, the goal of the National Education System is to help students become capable, intelligent, healthy, innovative, independent, and responsible individuals. Several approaches to achieving these objectives include implementing learning strategies that prioritize student development and learning motivation to help students fully realize their potential.

Student learning motivation is a crucial factor in the success of the learning process. Motivation theory suggests that students with high motivation are more likely to be actively engaged in learning activities, resilient in the face of challenges, and achieve better outcomes. However, one of the major issues faced by teachers is the decline in student motivation, particularly in conventional learning, which tends to be monotonous and less interactive. A lack of teacher understanding in utilizing updated learning methods and media leads to low student motivation.

The use of Game-Based Learning (GBL) is an effective solution to increase student learning motivation. One medium that can be used to apply the Game-Based Learning method is Baamboozle. GBL methods can make the learning process enjoyable and ignite students' enthusiasm for learning, thereby motivating and encouraging them to be more creative. (Asti Astuti, 2017: 12) Baamboozle is a web-based educational game platform that provides various interactive and engaging games for learning. This GBL platform is designed according to the needs of the material to be taught in the classroom.

Many studies show that Game-Based Learning (GBL) has great potential to make learning more enjoyable and engaging by incorporating game elements such as challenges, rewards, and compelling narratives. It also demonstrates that GBL has the ability to enhance student participation, improve the understanding of complex concepts, and enrich the learning experience.

Therefore, this study aims to determine how the Game-Based Learning (Baamboozle) method can improve student motivation, particularly in the 4th-grade Science and Social Studies (IPAS) subject.

The term "method" originates from the Greek word "metodos". This word is derived from two parts: "metha", which means through or across, and "hodos", which means way or path. In the Kamus Besar Bahasa Indonesia (2009:574), the method is defined as a well-organized and thoughtfully considered way to achieve a goal, a process used to present teaching materials to achieve educational objectives. According to Wina Sanjaya (2016:147), the learning method is a way to implement a plan that has been structured into real activities to achieve optimal results.

The teaching method and the teaching-learning process are inseparable, just as the teacher, student, and teaching-learning process are interconnected. Askhabul Kirom (2017:74) states that teachers and students are the main determinants of general education, as they both

play a role in the learning process, which is the core of the entire educational process aimed at changing students' behavior.

In conclusion, the teaching method refers to a set of activities directed by the teacher, resulting in learning by the students. The method is a way to implement a strategy, and it serves as a teacher's approach to achieving learning objectives through the delivery of material.

Game-Based Learning (GBL) is a learning method that, in Indonesian, can be translated as a game-based learning method. In this approach, students are expected to learn through a play-based approach. GBL can make the learning process fun and ignite enthusiasm for learning, thereby motivating and encouraging students to be more creative (Asti Astuti, 2017:12). The use of GBL is a suitable method to apply in the teaching and learning process, as it enhances affective, cognitive, and psychomotor aspects (Rosarian et al., 2020:151). GBL can create a learning environment that is engaging, serious, and relaxed. This method is used to transform passive learning into active learning, turning a dull atmosphere into something enjoyable and fun. It aims to achieve effective and efficient learning outcomes. Typically, the pattern used in this learning method follows the "learning by doing" approach. GBL is a type of serious game designed for specific learning purposes.

Based on the opinions of the experts above, GBL can be described as a learning method that uses games or game elements, such as challenges, competition, and rewards, to enhance students' understanding of the material presented by the teacher. This method is considered capable of increasing student engagement and learning effectiveness, and it can be applied in various educational contexts. Baamboozle is a web-based educational game that provides interactive and engaging games using quizzes as its main game format (Mariani, 2022:209). Baamboozle is a type of learning medium that emphasizes games or edugames, similar to quiz competitions. This game is played in groups, promoting cooperation among students. The Baamboozle platform fosters a sense of competition among students, which can create positive rivalry (Uti, Munir & Said, 2021:15). Additionally, there are power-up elements that can add or subtract points, making the game more exciting and fun.

Learning motivation is defined as the internal and external drives that influence students to achieve optimal learning outcomes. This motivation is not only driven by internal factors within the students, such as interest and the desire for success, but also by a supportive learning environment, including effective teaching strategies and active teacher involvement (Hermawan, 2020:1570). Learning is a process within individuals that involves interaction with the environment to bring about behavioral changes. Learning motivation is the driving force or push to perform a task, which can come from within oneself or from external sources (Beatus, 2020:70).

From the various definitions provided by the experts above, it can be understood that motivation plays a significant role in shaping individual attitudes, ensuring that all goals or aspirations can be achieved. Motivation, whether it comes from the individual or from others, fosters the enthusiasm to act, such as learning in the classroom. If teachers can stimulate this motivation in their students, the learning material will be more easily accepted by the students, and learning objectives will be more readily achieved.

The results of research by several experts who have conducted feasibility tests on Game-Based Learning (Baamboozle) concluded that Game-Based Learning (Baamboozle) is suitable for use as a learning medium. This is because Baamboozle is a game medium that can create an

engaging, lively, enjoyable, and relaxed learning environment, while also having the ability to involve students actively in solving problems, thereby increasing their learning motivation.

In conclusion, Game-Based Learning (Baamboozle), or game-based learning using the Baamboozle platform, is a type of game that can be developed into a Game-Based Learning method. By using Baamboozle as a medium, it provides students with a direct learning experience, allowing them to build their own knowledge through activities that involve learning through play.

Method

The researcher employed an experimental technique combined with a quantitative approach. Experimental research can be considered a method for discovering, under favorable and controlled conditions, how one treatment affects another (Zainal Arifin, 2012:148). The experimental research method involves conducting experiments and is a quantitative method used to determine the effect of an independent variable (treatment) on a dependent variable (result) under controlled conditions (Sugiyono, 2019:111). In this quantitative research, the analysis is conducted both manually and using computer software to show the relationship between variables. Quantitative research tends to present and interpret numerical data accompanied by visuals, tables, graphs, or other displays (Machali Imam, 2017:17).

This study was conducted at Madrasah Ibtidaiyah Payungan, Kaliwungu District, Semarang, with the research sample consisting of 39 4th-grade students from Payungan who had been applying Science and Social Studies (IPAS) learning. Data collection techniques included questionnaires and observations. The data analysis methods used were descriptive techniques to illustrate the research findings and inferential techniques to draw general conclusions from the structured and processed data. To ensure data validity, normality and homogeneity tests were conducted.

Result

Natural and Social Sciences (IPAS) is a subject that requires an understanding of concepts that are sometimes abstract and complex, demanding high concentration and interest from students. In practice, many students lack motivation when learning IPAS. This is often due to teaching methods that tend to be monotonous, less interactive, and unable to engage students. The lack of student activity during the learning process often leads to boredom and a lack of enthusiasm for studying IPAS, which ultimately affects their learning outcomes.

GBL, as an innovation and solution for accelerating learning adaptation, is a teaching method that uses games to increase student motivation and learning outcomes (Wibawa et al., 2021:17). Baamboozle is a web-based educational game that provides interactive and engaging games using quizzes as the main format (Mariani, 2022:209). Baamboozle is an educational quiz-based platform that allows teachers to create interactive games tailored to their learning needs. Through Baamboozle, students are encouraged to learn through interesting and competitive challenges, which are expected to stimulate their interest and engagement in the learning process.

Based on observations, it was found that student motivation in IPAS learning is very low. This is indicated by the lack of student activity during the teaching and learning process. It was expressed that students should be able to understand the learning material presented by the teacher if they have high learning motivation, enabling them to achieve good results. MI Payungan

is one of the schools that has been relatively lacking in the implementation of diverse teaching methods and media. This is marked by the limited use of media, especially in IPAS learning, which has negatively impacted student attention and caused them to lose focus during lessons.

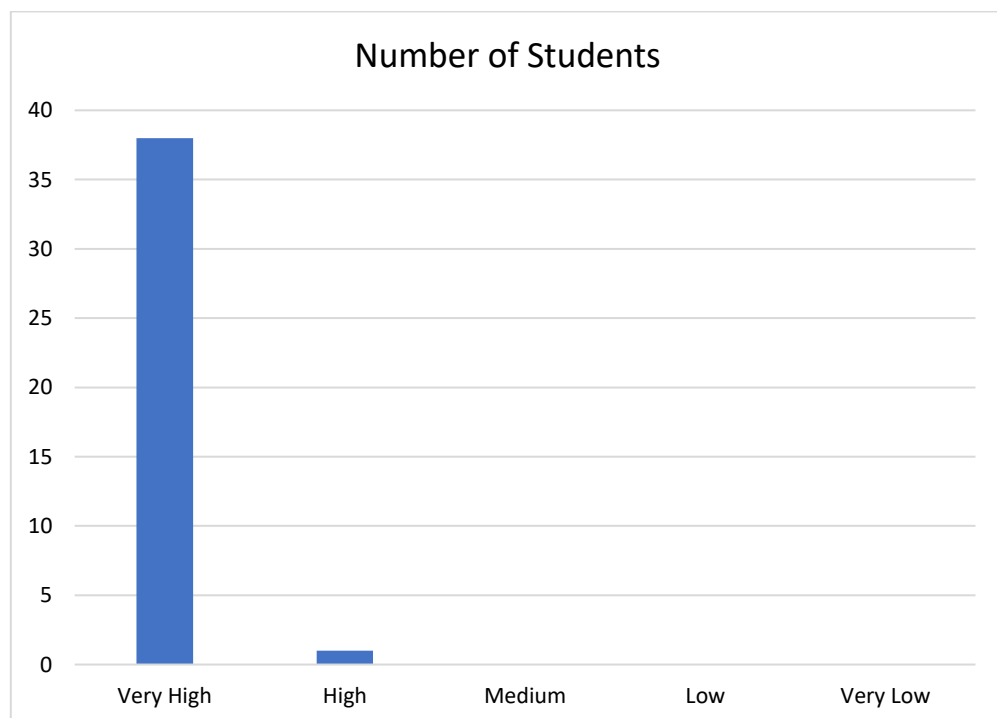
The research results after using Game-Based Learning (Baamboozle) for the Natural and Social Sciences (IPAS) subject in Grade VI at MI Payungan are as follows:

Table 1
Results of the Questionnaire on the Use of Game-Based Learning (Baamboozle)

Score Range	Category	Number of Students
$\geq 74,91$	Very High	38
$68,11 < X < 74,91$	High	1
$61,11 < X < 68,11$	Medium	0
$56,19 < X < 61,11$	Low	0
$\leq 56,19$	Very Low	0

Based on Table 1, it is evident that the majority of students have a very positive perception of the use of Game-Based Learning through the Baamboozle platform. A total of 38 students fall into the Very High category, with scores $\geq 74,91$. This indicates that the use of this method is generally well-received and considered effective by the learners. Conversely, there is 1 student in the High category, with scores ranging from 68,11 to 74,91, while no students fall into the Medium, Low, or Very Low categories. This suggests that most students perceive significant benefits from the game-based learning approach. For further details, the frequency distribution of Game-Based Learning (Baamboozle) usage can be observed in the following histogram:

Diagram 1
The frequency distribution of Game-Based Learning (Baamboozle) usage.



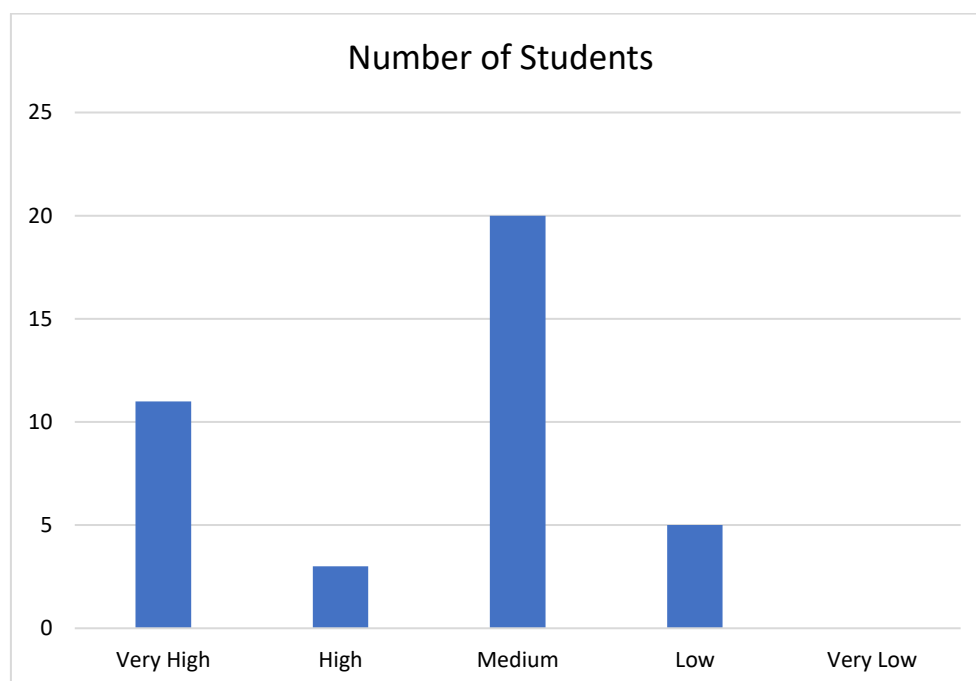
As for students' learning motivation in the Science and Social Studies (IPAS) subject in Grade IV of MI Payungan for the 2024/2025 academic year, it was measured using questionnaire results as follows:

Table 2
Results of the Questionnaire on Students' Learning Motivation in the Science and Social Studies (IPAS) Subject

Score Range	Category	Number of Students
≥ 80	Very High	11
$79,5 < X < 80$	High	3
$74,4 < X < 79,5$	Medium	20
$70,5 < X < 74,4$	Low	5
$\leq 70,5$	Very Low	0

Based on Table 2, the majority of students fall into the Medium category, with 20 students out of the total showing fairly stable learning motivation. However, 11 students are in the Very High category, and 3 students are in the High category, indicating that some students still exhibit excellent enthusiasm in IPAS learning. For further details, the frequency distribution of students' learning motivation in the IPAS subject can be observed in the following histogram:

Diagram 2
The frequency distribution of students' learning motivation in the Science and Social Studies (IPAS) subject.



In hypothesis testing, the calculated r value must be greater than the r table value at a significance level of 1% or 5%, meaning r calculated $> r$ table or r calculated $> 0,316$ or r calculated $> 0,267$. The processing was done using IBM SPSS 26 for Windows to facilitate hypothesis testing, and the results are as follows:

Table 3
Correlation Coefficient of GBL on Students' Learning Motivation

		X (GBL Baamboozle)	Y (Learning Motivation)
X (GBL Baamboozle)	Pearson Correlation	1	.758**
	Sig. (2-tailed)		0,00
	N	39	39
Y (Learning Motivation)	Pearson Correlation	.758**	1
	Sig. (2-tailed)	0,00	
	N	39	39

Based on the data above, it can be explained that the empirical r or calculated r shows a result of 0,758. When compared to the r table values at 5% and 1%, this means $0,758 > 0,316$ or $0,758 > 0,267$. Therefore, H_a is accepted, indicating a significant effect of using Game-Based Learning (Baamboozle) on students' learning motivation in the Science and Social Studies (IPAS) subject in Grade IV of MI Payungan for the 2024/2025 academic year.

Discussion

This research aims to answer the question of how significant the impact of using Game-Based Learning (Baamboozle) is on students' learning motivation in the Science and Social Studies (IPAS) subject in Grade IV of MI Payungan for the 2024/2025 academic year, namely:

1. The use of Game-Based Learning (Baamboozle) in the Science and Social Studies (IPAS) subject in Grade IV of MI Payungan for the 2024/2025 academic year was measured through a questionnaire. The use of Game-Based Learning (Baamboozle) in the Science and Social Studies (IPAS) subject in Grade IV of the Madrasah Ibtidaiyah is classified into five categories: very high, high, medium, low, and very low. The classification was based on the questionnaire results obtained by the students. According to the data, the highest score was 80, while the lowest was 74, with a mean of 78,64 and a standard deviation of 3,0261. Using the Likert scale formula, it was found that 38 students achieved very high scores, and 1 student achieved a high score in the use of Game-Based Learning (Baamboozle) in the Science and Social Studies (IPAS) subject in Grade IV of MI Payungan.
2. The students' learning motivation in the Science and Social Studies (IPAS) subject in Grade IV of MI Payungan for the 2024/2025 academic year was also measured through a questionnaire. The learning motivation was classified into five categories: very high, high, medium, low, and very low. The classification was based on the students' questionnaire results. According to the data, the highest score was 80, while the lowest was 72, with a mean of 77,15 and a standard deviation of 2,731. Using the Likert scale formula, it was found that 11 students achieved very high scores, 3 students achieved high scores, 20 students achieved medium scores, and 5 students achieved low scores in terms of learning motivation in the Science and Social Studies (IPAS) subject.
3. The effect of using Game-Based Learning (Baamboozle) on the learning motivation of Grade IV students at MI Payungan in the Science and Social Studies (IPAS) subject for the 2024/2025 academic year has been determined, as explained in the data above. After processing the data, the calculated r value was 0,758. When compared with the r table values at 1% and 5%, the result is r calculated $>$ r table, or $0,758 > 0,316$ or $0,758 > 0,267$. Thus, the hypothesis that

reads: "There is an effect of using Game-Based Learning (Baamboozle) on the learning motivation of Grade IV students at MI Payungan in the Science and Social Studies (IPAS) subject for the 2024/2025 academic year" is accepted.

Conclusion

From the explanation above, the following conclusions can be drawn:

1. The effect of using Game-based Learning (Baamboozle) in the Science and Social Studies (IPAS) subject in Grade IV of MI Payungan shows that, based on the data, 38 students achieved very high scores in the use of Game-based Learning (Baamboozle) in the IPAS subject.
2. The students' learning motivation in the IPAS subject in Grade IV of MI Payungan for the 2024/2025 academic year shows that, based on the data, 20 students achieved fairly high motivation scores in the IPAS subject.
3. The effect of using Game-based Learning (Baamboozle) on students' learning motivation in the IPAS subject in Grade IV of MI Payungan shows a calculated r value of 0,758. When compared to the r table values at 1% and 5%, the result is r calculated $>$ r table or $0,758 > 0,316$ or $0,758 > 0,267$.

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