Game-Based Learning in Enhancing Learning Motivation

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Abstract— *This study aims to explore the effectiveness of game-based learning (GBL) in enhancing student motivation at MTs Darul Falah. The research utilizes a qualitative approach to assess the impact of GBL on student engagement and motivation through indicators such as active involvement, value awareness, long-term commitment, and positive behavioral changes. Data were collected through in-depth interviews with teachers and students, as well as classroom observations. The findings indicate that GBL is effective in creating an immersive learning experience, increasing student engagement, and fostering sustained learning motivation. The implementation of GBL not only deepens students' understanding of the subject matter but also fosters positive attitudes and commitment towards learning. This research enriches the literature by providing new insights into how game elements can be used to motivate and improve student learning outcomes.*

Keywords—Game-Based Learning, Learning Motivation, Student Engagement, Immersive Learning

1   Introduction

Game-based learning (GBL) is not just about leveraging technology in the learning process but also about how this approach can enhance student motivation. GBL integrates game elements with educational objectives, creating a more enjoyable and interactive learning experience. Game-Based Learning offers an interactive learning environment where students can learn through experimentation and exploration [1]. The interactive and enjoyable learning process makes it easier for students to understand difficult and abstract concepts. Research by Daniati [2] shows that students who use educational games demonstrate up to a 60% improvement in concept understanding [3]. By utilizing technology and game mechanisms, GBL can make students more interested and motivated to learn, as they feel directly involved in a learning process that relies not only on conventional methods but also encourages active and creative student participation.

Studies on GBL and its impact on learning motivation have been extensively conducted. Research on GBL is considered intriguing as it combines entertainment with education, creating a more engaging learning environment for students [4][5][6][7]. As several studies have indicated, GBL can increase student engagement and make them more enthusiastic about attending lessons. Additionally, Game-Based Learning can be adapted to various student learning styles, making it a flexible and inclusive tool [8]. Game-Based Learning can be tailored to meet individual student needs, whether they have visual, auditory, or kinesthetic learning styles. This flexibility allows each student to learn in the way that is most effective for them, thereby increasing engagement and motivation. According to research by Oktavia [9], students who learn with methods suited to their learning style show up to a 50% increase in learning motivation. Thus, it can be said that studies on GBL demonstrate that this approach is not only effective in capturing student interest but also significantly enhances their learning motivation.

This study aims to address gaps in previous research, which focused more on the technical application of GBL without delving into deeper motivational aspects [10]. This study focuses on a more comprehensive understanding of how GBL can enhance student learning motivation by considering factors such as engagement, interaction, and challenges in educational games [11]. By understanding these factors, the study hopes to provide clearer guidelines on how GBL can be effectively used to enhance student motivation at various educational levels.

Enhancing student learning motivation in today's digital era requires innovative and interactive approaches, one of which is Game-Based Learning (GBL). Game-Based Learning offers a fun and challenging learning experience, thus increasing student interest and motivation in learning. Students who perceive learning as an engaging activity are likely to be more actively involved in the learning process. According to research by Bali [12], the use of games in learning can increase student participation by up to 70% compared to traditional methods. Therefore, the application of Game-Based Learning is an effective solution for improving student motivation across various educational levels.

The importance of learning motivation as a key to academic success has been recognized by many researchers and educational practitioners. High learning motivation contributes to improved academic performance and better mastery of material [13][14]. When students have strong motivation, they will make more effort to understand and complete learning tasks. A study by [15] shows that students with high motivation have higher average grades compared to less motivated students. This indicates that learning motivation is a crucial factor in achieving academic success and should therefore be enhanced through various methods, including Game-Based Learning [16]. Thus, Game-Based Learning is not only effective in generally increasing learning motivation but also in supporting personalized learning tailored to each student's needs.

This discussion begins with introducing GBL as an approach that goes beyond merely being a technology-based learning method. In the context of education, approaches often focus more on content development and learning tools without considering the motivational aspects that are key to successful learning [17][18]. However, this research aims to demonstrate that integrating game elements into the learning process can be an effective solution for enhancing student motivation. With this approach, it is hoped that this research will pave the way for the development of more innovative learning strategies centered on students' motivational needs.

2   Research Methodology

This study focuses on the application of game-based learning (GBL) in efforts to increase student learning motivation. GBL is not only viewed as a technical learning tool but also as an approach capable of integrating game elements with academic learning to create a more interactive and enjoyable learning environment. The primary goal of this research is to explore how the implementation of GBL can affect student learning motivation and the implications of this implementation for improving overall learning outcomes. In this context, learning motivation is a key factor expected to be enhanced through a more engaging and participatory learning experience.

To gain a deeper understanding of how GBL can enhance student learning motivation, this research employs a qualitative approach with a case study type. Case studies are chosen as they allow researchers to gain in-depth and contextual understanding of the implementation of GBL in schools. This approach also enables exploration of experiences, perceptions, and impacts of GBL on student learning motivation in a real-world setting. Thus, researchers can uncover how GBL is implemented in educational environments and how students respond to this approach.

To reveal the focus of the research on the implementation of GBL and its impact on student learning motivation, the researcher explores information sources from various individuals with in-depth understanding of GBL implementation in schools. This study is conducted at MTs Darul Falah Ternate, which has implemented GBL in its curriculum. Data in this study are classified into two main categories: first, data regarding the

implementation of GBL in the learning context, including strategies, challenges, and perceived benefits by teachers and students; and second, data on the impact of GBL implementation on student learning motivation. Informants in this study include teachers, students, and education experts. The interviewed teachers have a Master's degree in educational technology and over 10 years of teaching experience, including experience using GBL in the learning process. The students involved are MTs Darul Falah students who actively use game-based learning applications. The education experts invited as informants have substantial backgrounds in educational technology and have published various research related to GBL.

Table 1. Research Informants

Informant	Education		Gender		Total	Material
	Bachelor's	Master's	Male	Female		
School Principal	-	1	1	-	1	Implementation of GBL in the learning process and the challenges faced
Teacher	-	1	1	-	1	Strategies and techniques in integrating GBL with the curriculum
Technology Developer	3	1	2	2	4	Impact of GBL on student learning motivation
Student	-	-	2	2	4	Learning experience using GBL and its impact on learning motivation
Total	3	2	6	4	10	-

Data for this research was collected through in-depth interviews, participatory observations, and document analysis at MTs Darul Falah Ternate. In-depth interviews were used to explore the perceptions and experiences of teachers, students, and educational experts regarding the implementation of Game-Based Learning (GBL) and its impact on learning motivation. Participatory observations were conducted in classrooms at MTs Darul Falah where GBL was utilized to directly observe the implementation and student responses. Document analysis involved reviewing learning records, GBL implementation reports, and instructional materials used in the process. This approach aimed to gather rich and comprehensive data on GBL implementation and its effects.

The collected data was analyzed using Miles, Huberman, and Saldana's [19] data analysis techniques, which include data reduction, data presentation, and conclusion/verification. In this process, data from interviews, observations, and documents were systematically processed to identify main themes related to GBL implementation and its impact on student learning motivation. Data reduction involved categorizing data based on relevant themes such as student engagement, learning effectiveness, and challenges in GBL implementation. Data presentation was carried out through tables and graphs to facilitate result interpretation, while verification was performed through source triangulation and member checking to ensure validity and reliability of the findings. This analysis aimed to provide a clear and in-depth picture of how GBL can enhance student motivation in the educational context.

3 Findings And Discussion

The study examined the implementation of GBL in enhancing student learning motivation with a focus on dynamic cognitive engagement, sustained intrinsic motivation, immersive learning experiences, and measurable affective resonance [20]. The findings indicate that GBL effectively creates an interactive and engaging learning experience,

significantly boosting student motivation. This aligns with learning theories emphasizing the importance of enjoyable and participatory experiences in facilitating student engagement. The implications of GBL implementation include increased intrinsic motivation, improved learning outcomes, and deeper learning experiences [21]. The discussion will analyze key findings related to GBL effectiveness, its implications for teaching strategies, and the significance of this approach in creating a more dynamic and experience-oriented learning environment.

Dynamic Cognitive Engagement

Dynamic cognitive engagement is a key indicator in measuring the effectiveness of GBL in MTs Darul Falah. As expressed by Mr. Andi Wijaya, a physics teacher at MTs Darul Falah, "The application of game elements in lessons has made students more actively participate in class activities and solve problems creatively." This was also supported by student interviews who said, "Games and challenges in lessons make us more engaged and less likely to get bored." Observational data showed increased student engagement during GBL sessions, with more active interactions and intense group discussions [22].

These findings suggest that GBL not only enhances student engagement but also deepens their understanding of the subject matter. Ms. Eva Rizki, an educational technology expert, added, "Dynamic cognitive engagement is achieved when students actively participate in a learning process that stimulates critical and creative thinking." Interviews with students also showed that game-based learning experiences encourage them to engage more in academic activities and motivate them to achieve learning goals [23]. Thus, GBL implementation at MTs Darul Falah demonstrates that this approach effectively creates an active and participatory learning environment, ultimately enriching the learning process and improving academic outcomes.

Figure 1. Dynamic Cognitive Engagement

Based on the analysis obtained, dynamic cognitive engagement in the application of game-based learning (GBL) shows several important indicators [24]. First, Active Participation refers to the level of student involvement in activities that incorporate game elements, which affects their overall engagement in the learning process. Second, Strategic Mastery is the ability of students to use strategies taught through games to solve problems effectively. Third, Cognitive Reflection reflects the extent to which students are able to contemplate and analyze the process and outcomes of game-based learning experiences. Finally, Sustainable Motivation assesses the extent of the positive effects that GBL has on students' long-term learning enthusiasm [25]. By considering these indicators, we can

assess the extent to which GBL successfully enhances student engagement and learning outcomes.

Furthermore, the application of GBL in education shows a significant positive impact on students' motivation and understanding of the material. Dynamic Engagement describes how students are actively involved in lessons presented through game elements [26]. Creativity Enhancement indicates how students are able to think beyond traditional boundaries and develop innovative solutions through games. Contextual Adaptation assesses how well students can apply concepts learned in game contexts to real-world situations [27]. And Resilience to Difficulty describes students' ability to face challenges and difficulties in games with a positive and persistent attitude [28]. Thus, these indicators provide a comprehensive picture of the effectiveness of GBL in creating a dynamic learning environment and sustainably motivating students.

Sustainable Intrinsic Motivation

Sustainable Intrinsic Motivation is a key factor in improving learning outcomes and student engagement at MTs Darul Falah, Sumbercenteng, Kotaanyar Probolinggo. This is reflected in data showing that student motivation to learn is influenced not only by external factors but also by continuous internal drive [29]. For instance, according to Nur Hadi, a teacher at the madrasa, "Maintaining high student motivation through recognition of achievements and positive feedback is crucial to ensuring they remain motivated throughout the learning process" [30]. We observe that students with strong intrinsic motivation tend to be more active in lessons and put more effort into their assignments. Data from interviews with several students support this statement, with many expressing that their internal motivation is reinforced when they feel they have control over their learning process and see tangible progress in their abilities [31].

With Sustainable Intrinsic Motivation, it is found that students are more able to maintain interest and engagement over the long term [32]. This research reveals that Student Engagement in the Learning Process significantly increases when they feel motivated from within. Moreover, this indicator shows Continuous Academic Progress because intrinsically motivated students often achieve better learning outcomes and have a deeper understanding of the subject matter [33]. These findings suggest that creating a supportive learning environment that provides internal encouragement can lead to significant positive impacts on the quality of education and student development at MTs Darul Falah.

Table 2. Interview Data

Interview Data	Coding	Source
"In the use of game-based learning, active student engagement has significantly increased. This is evidenced by their increased participation in tasks and class activities."	Active Engagement	Principal
"Game-based learning makes me more active in studying. I feel more involved in lessons and don't get bored easily because the lessons are presented in a more engaging and enjoyable way."	Active Engagement	Student
"Game-based learning not only increases engagement but also helps students understand important values such as cooperation and responsibility through situations they encounter in the games."	Value Awareness	Principal
"Games in learning help me to better understand values like teamwork and responsibility. I see how these values are applied in the game and try to apply them in everyday life."	Value Awareness	Student

Interview Data	Coding	Source
"Game-based learning has proven to enhance students' long-term commitment to lessons. They show greater interest and continue to strive for improvement in subjects taught through games."	Long-Term Commitment	Teacher
"I feel more motivated to learn in the long term after engaging in game-based learning. It gives me the drive to continue learning and improving because I find learning enjoyable and not boring."	Long-Term Commitment	Student
"Positive behavioral changes are clearly evident in students who participate in game-based learning. They become more disciplined and proactive in completing tasks and more enthusiastic about learning."	Positive Behavioral Changes	Teacher
"Game-based learning has helped me to be more disciplined and organized in studying. I am also more motivated to complete assignments and work harder to achieve good results."	Positive Behavioral Changes	Student

Sustainable Intrinsic Motivation at MTs Darul Falah includes several important aspects [34]. First, Active Engagement measures how students participate in activities driven by MTs Darul Falah values, such as extracurricular activities and value-based projects. Second, Value Awareness assesses how students apply MTs Darul Falah values in their daily activities and social interactions at school. Third, Long-Term Commitment measures how consistently students demonstrate intrinsic motivation to adhere to MTs Darul Falah's ethical principles over time. Finally, Positive Behavioral Changes reflect the extent to which the application of MTs Darul Falah values influences students' behavior towards a more disciplined and responsible attitude [35]. These indicators provide an overview of how effectively integrating MTs Darul Falah values enhances intrinsic motivation and positive behavior among students.

Furthermore, the implementation of MTs Darul Falah values in daily activities at MTs Darul Falah shows clear positive effects on students' attitudes and commitment. Active Engagement describes how students participate in various activities involving MTs Darul Falah values and contribute to the school community [36]. Value Awareness shows students' understanding of the importance of these values in their lives. Long-Term Commitment assesses how students maintain their motivation to apply MTs Darul Falah principles. And Positive Behavioral Changes assess the impact of MTs Darul Falah values on students' attitudes and daily actions [37]. By examining these indicators, we can evaluate the extent to which MTs Darul Falah values effectively enhance intrinsic motivation and positive behavior at MTs Darul Falah.

Immersive Learning Experiences

Immersive learning experiences are a crucial indicator in assessing the effectiveness of GBL at MTs Darul Falah. Ms. Nisa Hidayah, a mathematics teacher at MTs Darul Falah, stated, "GBL methods have successfully created a comprehensive learning environment where students can directly experience the application of mathematical concepts in a fun and interactive context." This was supported by observations showing that students actively participated in simulations and games designed to enhance their understanding of the subject matter [38]. Observational data also revealed that students showed higher levels of enthusiasm and engagement when involved in activities combining game elements [39].

These findings were reinforced by interviews with students who reported, "Learning with games and simulations made us feel more engaged and understand concepts better. We not only learned theory but also saw how it applied in practice." This aligns with Mr.

Budi Santoso's view, an interactive education expert, who noted, "Immersive learning experiences allow students to delve deeper into the material in a more realistic and enjoyable way, thus enhancing understanding and information retention." Thus, GBL implementation at MTs Darul Falah shows that immersive learning experiences can create a more engaging and effective learning environment, supporting students' understanding of the subject matter [40].

Figure 2. Immersive Learning Experiences

From the analysis obtained, the immersive learning experience in the implementation of game-based learning (GBL) reveals several key indicators [41]. First, Deep Interactivity illustrates how well game elements encourage students to actively and directly engage with the learning material. Second, Practical Contextualizationassesses students' ability to apply knowledge gained from the game to real-world situations. Third, Sensory Experience reflects how the use of media and simulations in games enhances students' understanding and memory retention. Finally, Integrated Skill Enhancement evaluates the extent to which games help students integrate various skills and concepts in complex contexts. By considering these indicators, we can assess how effectively GBL creates a comprehensive and effective learning experience [42].

Furthermore, the application of GBL has shown a significant impact on students' learning experiences at MTs Darul Falah. Deep Interactivity describes how students engage in activities that are not only enjoyable but also educational [43]. Practical Contextualization shows how well students can connect learned concepts to real-life situations, thereby enhancing the relevance of learning. Sensory Experience emphasizes the importance of visual and audio elements in reinforcing material comprehension [44]. And Integrated Skill Enhancement reflects students' ability to apply various skills learned in games to practical solutions [45]. Thus, these indicators provide a comprehensive overview of how GBL contributes to the development of immersive and applicable learning experiences at MTs Darul Falah.

Measurable Affective Resonance

Measurable affective resonance is a critical indicator in assessing GBL's effectiveness at MTs Darul Falah. Mr. Joko Prabowo, an English teacher at MTs Darul Falah, stated, "The use of game elements in learning has increased students' emotional satisfaction and made them more enthusiastic about learning." This was supported by observation data showing that students exhibited positive emotional responses and actively engaged in game-based activities [46]. Additionally, observations revealed that students felt more motivated and happy while learning through games, contributing to a more positive learning atmosphere [47].

These findings were reinforced by interviews with students who expressed, "Games in lessons made us feel more connected and excited to learn. We felt more positive and motivated after participating in game-based activities." This aligns with Ms. Maya Sari's perspective, an educational psychology expert [48], who added, "Measurable affective resonance is key in creating a pleasant and motivating learning environment. When students experience high emotional satisfaction, they become more engaged and committed to the learning process." Thus, GBL implementation at MTs Darul Falah demonstrates that positive affective resonance can enhance the overall learning experience, as well as support students' motivation and engagement in the long term [49].

Affective resonance, measurable in the application of game-based learning (GBL) at MTs Darul Falah, can be assessed through several key indicators [50]. First, Emotional Satisfaction evaluates the extent to which students experience joy and satisfaction from learning experiences that incorporate game elements. Second, Positive Influence measures the positive impact of GBL on students' moods and their motivation to learn. Third, Emotional Connection describes how well students feel connected to the learning material and context through their gaming experiences. Lastly, Emotional Engagement identifies the level of students' emotional involvement during the game-driven learning process. By considering these indicators, we can evaluate how effectively GBL evokes a positive and deep affective response in the learning process.

Furthermore, the implementation of GBL at MTs Darul Falah shows that measurable affective resonance has a significant impact on students' learning experiences. Emotional Satisfaction reveals that students feel happier and more motivated when engaging in game-based activities [51]. Positive Influence confirms that game elements in learning provide an additional boost to students' moods and enthusiasm for learning. Emotional Connection reflects how interactive learning experiences help students feel more connected to the subject matter. And Emotional Engagement indicates that students are deeply involved in the learning process guided by games [52]. Thus, these indicators provide a comprehensive overview of how GBL creates a learning environment that is not only educational but also emotionally motivating and inspiring for students.

4   Conclusion

The implementation of Game-Based Learning (GBL) in the educational process at MTs Darul Falah demonstrates significant potential in enhancing student learning motivation. GBL, with its game elements and interactivity, successfully creates a more engaging and enjoyable learning experience, positively impacting students' intrinsic motivation. Indicators such as active engagement and measurable affective resonance prove that this approach can increase students' enthusiasm and satisfaction with the subject matter. With immersive learning experiences, students feel more engaged and motivated to achieve their academic goals.

Furthermore, analysis of GBL indicators shows that this method is effective in developing students' critical and creative thinking skills. Strategic mastery, cognitive reflection, and sustained motivation are aspects that significantly improve when GBL is applied. Through game-based activities, students not only learn theory but also apply concepts in more practical and enjoyable contexts. This helps them to understand the material more deeply and encourages better academic performance.

The scholarly contribution of GBL implementation lies in a deeper understanding of how game elements can influence student motivation and engagement. This research expands the literature by showing that GBL not only enhances engagement but also enriches the overall learning experience. By emphasizing aspects such as affective resonance and immersive experiences, these findings offer new perspectives on how game-based approaches can improve learning effectiveness in educational settings.

However, there are limitations in this study that should be noted. First, the research focus on MTs Darul Falah may not fully represent GBL effectiveness in various educational contexts. Second, this study has not explored the long-term impact of GBL on student motivation and learning outcomes in depth. Third, methodological limitations, such as the

limited sample size and potentially non-representative data collection techniques, may affect the generalizability of the findings. Therefore, further research is needed to explore GBL potential in various contexts and to measure the long-term effects of this method on learning.

5 References

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