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Gamified Learning Platforms: Enhancing Student Engagement and Achievement in Hybrid Classrooms

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Abstract

This research explores the impact of gamification on student engagement and learning outcomes in hybrid classrooms at SMA Negeri 1 Pinrang. The study aims to identify the role of gamified platforms in enhancing student participation and to analyze the relationship between student engagement and academic achievement. The research employs a qualitative approach, utilizing purposive and random sampling to select students from hybrid classrooms. Data were collected through gamification-based platforms, student engagement surveys, and academic performance tests. The findings indicate that the use of gamification significantly increases student engagement, motivation, and academic achievement, particularly when integrated into a hybrid learning environment. This study also highlights challenges such as technology access and the need for teacher training to maximize the benefits of gamification. The results provide practical recommendations for educators to implement gamified elements in their teaching strategies and for platform developers to enhance features that support hybrid learning. Future research should investigate the broader impacts of gamification, particularly on diverse learning styles and across different academic subjects.

Keywords: Gamification, Student Engagement, Academic Achievement, Hybrid Classroom

INTRODUCTION

The importance of technology in modern education has become increasingly evident, especially with the rise of hybrid classrooms as a solution to post-pandemic learning challenges. Hybrid learning combines in-person and online instruction, providing flexibility and accessibility to students regardless of their location (Thi Binh et al., 2024). This approach has been crucial in adapting to the ongoing changes in educational systems globally (Alam et al., 2023). The potential of gamification in education is significant, as it offers a dynamic and interactive way to engage students (Kang & Recard, 2023). By incorporating game-like elements such as points, rewards, and challenges, gamification can enhance student motivation, encourage active participation, and improve learning outcomes (Yusof et al., 2021). As technology continues to evolve, these innovations are transforming education into a more inclusive, engaging, and effective experience for both students and educators (Almusaed et al., 2023).

Gamification in education refers to the integration of game-like elements and principles into the learning process to enhance student engagement and motivation. Key elements of gamification include points, badges, leaderboards, challenges, and rewards, which provide students with immediate feedback and a sense of accomplishment (Swacha, 2021). These elements help to transform traditional learning experiences into interactive, enjoyable, and competitive activities, fostering deeper involvement (Hallifax et al., 2019). Previous studies on gamification have shown its positive impact on student motivation, participation, and learning outcomes. Research (Rasool et al., 2021) has found that students who engage with gamified content often display higher levels of commitment, improved problem-solving skills, and better retention of information. By combining technology and gamification, educators can create a more dynamic and personalized learning environment that resonates with modern students, as highlighted in the earlier discussion on the importance of technology and hybrid classrooms in contemporary education (Oliveira et al., 2023).

Student engagement in learning is influenced by several factors, including the relevance of the content, the teaching methods used, and the level of interactivity in the classroom. One key factor that can significantly enhance engagement is the integration of gamification, as it transforms learning into a more immersive and enjoyable experience, as discussed previously (Li & Xue, 2023). Gamified elements, such as rewards, challenges, and competition, stimulate intrinsic motivation, making learning more appealing and interactive. When students are more engaged, they are more likely to participate actively, retain information, and demonstrate improved academic performance. The level of engagement directly correlates with learning outcomes, as students who are highly engaged tend to achieve better results (Baskara, 2023). This relationship emphasizes the importance of utilizing innovative strategies like gamification and technology to foster deeper student involvement, ultimately leading to more effective and meaningful learning experiences (Ahmadi, Golchehreh, Mohammadi et al., 2023).

A hybrid classroom, which combines both in-person and online learning, offers a flexible and inclusive approach to education, making it a significant solution in the post-pandemic era, as discussed earlier. In a hybrid setup, students can

participate in lessons regardless of their physical location, allowing for greater accessibility and personalized learning experiences. This format also presents unique challenges, such as ensuring equal participation and engagement for both in-person and remote learners. It also provides opportunities to integrate technology and gamification, enhancing student involvement and motivation (Ulla & Perales, 2022). The use of gamified elements within a hybrid classroom can bridge the gap between remote and in-person students, offering interactive and engaging activities that appeal to all learners. By fostering deeper engagement, hybrid classrooms have the potential to improve learning outcomes, as more engaged students tend to perform better academically (Schlosser et al., 2023). This blend of technology, gamification, and flexible learning environments highlights the evolving landscape of education, which strives to meet the diverse needs of modern students while addressing the challenges of traditional classroom settings (Raes et al., 2020).

The theoretical framework for student engagement is often based on models that emphasize emotional, behavioral, and cognitive involvement in learning. One well-known model is the student engagement theory, which suggests that students are most engaged when they find learning activities meaningful, enjoyable, and interactive. This aligns with the use of gamification in educational settings, which encourages active participation and deeper emotional connections to the material (Wald & Daniel, 2020). As discussed earlier, gamification incorporates elements like points, challenges, and rewards to enhance motivation and engagement, which are key drivers of academic achievement. Studies have shown that gamified learning environments can significantly increase student engagement, as these elements make learning more dynamic and enjoyable (Bond, 2020). In turn, positively influences learning outcomes, as students who are more actively involved in their education tend to perform better academically (Olivier et al., 2019). Hybrid classrooms, combining the flexibility of online learning with the interactive nature of gamification can create a robust environment that fosters both engagement and achievement, helping students reach their full potential while overcoming the challenges of traditional or remote learning models (Bond & Bedenlier, 2019).

The issues at SMA Negeri 1 Pinrang related to the implementation of hybrid classrooms and gamification involve several interconnected challenges. The imbalance in participation between students attending in-person and those learning online leads to disparities in the quality of learning experiences, with online students often feeling isolated and less engaged, while students in physical classrooms tend to be more active but are limited by traditional teaching methods that lack variation. This approach hinders student engagement and reduces their motivation to learn. Although gamification has the potential to enhance motivation and interactivity, its implementation is obstructed by limited technological infrastructure, such as unstable internet access and inadequate devices. Additionally, there is resistance from some teachers who are accustomed to conventional teaching methods, as well as a perception among some students that gamification is mere entertainment rather than an effective learning tool. Without proper teacher training and infrastructure improvements, the implementation of gamification and hybrid classrooms is at risk of not reaching its full potential in improving learning outcomes.

The research gap in this study lies in the need for deeper understanding regarding the integration of hybrid classrooms and gamification in educational settings, specifically at SMA Negeri 1 Pinrang. While existing literature has highlighted the positive impacts of gamification on student engagement and academic performance in various learning environments (Learning & Lampropoulos, 2024), the specific combination of hybrid learning formats with gamified elements remains underexplored. Previous studies have produced mixed results regarding the effectiveness of gamification in different learning contexts, particularly in hybrid settings where both in-person and online interactions must be balanced (Duggal et al., 2021). Additionally, while the influence of gamification on motivation and cognitive load is well-documented (Chans & Portuguez Castro, 2021), its direct link to improved student outcomes in hybrid classrooms needs further investigation. This gap calls for a more targeted study to assess how these educational strategies impact student engagement and performance at SMA Negeri 1 Pinrang, considering the local context and unique challenges faced by the school.

The goal of this research is to explore the role of gamification platforms in enhancing student engagement and to analyze the relationship between student engagement and academic achievement in hybrid classrooms. By identifying how gamified learning tools can motivate students and increase participation, this study aims to provide valuable insights into their effectiveness in both online and in-person learning environments. The practical contributions of this research will benefit educators by offering actionable strategies to improve student involvement and performance through the integration of gamified elements. Additionally, the findings will enrich the literature on gamification in education, providing a deeper understanding of its impact on learning outcomes and helping to guide future educational practices and technology development.

METHOD

This research adopts a qualitative design to explore the role of gamification in enhancing student engagement and its impact on academic achievement in hybrid classrooms. The population consists of students enrolled in hybrid learning environments at SMA Negeri 1 Pinrang, with sampling methods including random and purposive sampling to ensure diverse representation. Data will be collected through gamification-based learning platforms and student questionnaires designed to measure engagement levels, along with tests to assess academic performance. The study will follow a stepwise implementation of gamification, including phases of introduction, engagement tracking, and assessment of learning outcomes. Data analysis will involve both descriptive and inferential statistics to examine the relationship

between student engagement and learning outcomes, supplemented by qualitative analysis to provide deeper insights into the experiences of students in the hybrid classroom setting.

RESULTS AND DISCUSSION

Results

Student Engagement Findings

The involvement of students in hybrid classrooms can fluctuate significantly before and after the implementation of gamification platforms. Before such platforms are introduced, student engagement may be limited, with learners adopting a passive approach to learning or struggling to navigate the complexities of hybrid environments. Traditional methods of instruction, such as lectures or textbook-driven assignments, often fail to capture students' attention or foster active participation. Without interactive elements, these conventional approaches fail to stimulate sustained interest, leading to a decrease in motivation and, ultimately, lower overall student involvement. Studies consistently show that engagement in traditional learning environments tends to suffer from a lack of interactivity and personalization, which are essential for maintaining student interest and motivation in the long term (Mar et al., 2023).

The introduction of gamification often triggers a noticeable shift in student engagement. By integrating elements such as rewards, challenges, leaderboards, and real-time feedback, gamified platforms make learning more dynamic and interactive. This transformation is especially significant in hybrid classrooms, where students may find it difficult to maintain consistent focus due to the blend of in-person and online learning formats (Zia & Noor, 2024). Hybrid learning environments can sometimes cause feelings of isolation or detachment, as students may struggle to stay motivated in the absence of a structured classroom setting. Gamification provides a mechanism to bridge this gap by offering tangible, game-like incentives that capture the learners' attention and keep them invested in their educational journey.

One of the most powerful effects of gamification is its ability to increase participation in hybrid classrooms. In traditional environments, students may attend class without actively engaging in discussions or activities. However, when gamification elements are introduced, students are more likely to interact with the content, collaborate with peers, and take an active role in their learning. Earning points or unlocking achievements can encourage students to complete assignments on time, attend virtual sessions regularly, or engage with supplementary materials (Tabassum et al., 2024). As they progress through levels or face new challenges, their sense of accomplishment and self-efficacy increases, leading to deeper interactions with the course material. The incorporation of game mechanics such as challenges and rewards ensures that learning is not only informative but also enjoyable.

Another notable benefit of gamification in hybrid classrooms is its ability to create a more personalized learning experience. In traditional setups, teachers often struggle to meet the diverse needs of students due to large class sizes and limited individual attention. Gamification can tailor the learning process to each student’s pace and performance. By offering personalized challenges or pathways, gamified systems ensure that students are not left behind or overwhelmed, as they can progress through content at their own pace. Furthermore, real-time feedback and progress tracking help students identify areas for improvement and motivate them to continue learning. This personalized approach fosters a sense of ownership over their educational experience, which is crucial for maintaining long-term motivation.

The impact of gamification extends beyond increasing student participation. Research has shown that it also fosters deeper engagement with the content. As students are incentivized to complete challenges, earn rewards, and track their progress, they are more likely to engage in critical thinking and problem-solving. The incorporation of game-like elements such as quizzes, puzzles, or simulations requires students to apply their knowledge in meaningful ways. Rather than passively absorbing information, students actively engage with the subject matter, leading to better retention and comprehension. This active learning approach can be particularly beneficial in hybrid classrooms, where maintaining focus can be challenging due to the split between in-person and online learning environments.

Over time, the sustained use of gamification has been linked to continuous improvements in student involvement. As students begin to see tangible rewards for their efforts and experience consistent progress within the gamified system, their intrinsic motivation grows. This growth in motivation translates into increased engagement, as students become more invested in both the online and offline components of their hybrid learning experience. The positive feedback loop created by gamification where students receive rewards, make progress, and experience success continues to reinforce their commitment to learning. As a result, students are more likely to stay engaged throughout the entire course, improving their overall academic performance and satisfaction.

The benefits of gamification in hybrid learning environments are well-documented, with research showing that gamified systems are an effective strategy for addressing many of the challenges associated with such settings. By increasing student engagement and motivation, gamification helps bridge the gap between in-person and online learning, ensuring that students remain focused, motivated, and actively involved in their education. The personalized and interactive nature of gamified learning ensures that students not only retain information but also enjoy the process of learning. With its ability to foster deeper connections to the content, enhance participation, and sustain motivation, gamification has proven to be a powerful tool in enhancing the overall learning experience for students in hybrid classrooms

Impact on Learning Achievement

The impact of gamification on student learning outcomes has been the subject of extensive research, consistently showing notable improvements when compared to traditional, non-gamified teaching methods. Gamified learning environments provide a dynamic and interactive platform that encourages students to engage actively with the material. Unlike conventional instruction, which can sometimes feel passive and disengaging, gamification motivates students by transforming learning into a more engaging and enjoyable experience. As a result, students tend to perform better, not only in terms of knowledge retention but also in applying what they have learned to real-world situations. This shift in engagement and motivation is one of the key reasons why gamification is increasingly being adopted in educational settings.

A study by (Durrani et al., 2023) highlights the academic benefits of gamified learning environments. The researchers found that students who participated in gamified courses showed higher levels of academic achievement compared to their peers who followed traditional, non-gamified learning methods. This improvement can be attributed to the inherent structure of gamification, which includes features like real-time feedback, progress tracking, and goal-setting. These elements help students monitor their progress and stay motivated throughout the learning process. As a result, students are more likely to stay on task, complete assignments, and engage with the content at a deeper level.

The ability to provide instant feedback is one of the most powerful aspects of gamification. In traditional classrooms, feedback is often delayed, which can hinder student progress and motivation. Gamified platforms allow students to receive immediate responses to their actions, enabling them to understand their strengths and areas for improvement right away. This real-time feedback fosters a growth mindset, encouraging students to view challenges as opportunities for learning rather than obstacles. By continuously tracking their performance and setting achievable goals, students in gamified environments are better able to maintain focus and persistence, ultimately enhancing their learning outcomes.

Gamification also has a profound impact on the depth of student learning. When students engage with gamified platforms, they are not just passively receiving information; they are actively participating in the learning process. This active engagement fosters deeper cognitive processing, which enhances knowledge retention and the ability to apply learned concepts in novel situations. Research by (Zainuddin et al., 2022) shows that students in gamified courses tend to outperform their peers in non-gamified settings, especially in subjects that require critical thinking and problem-solving skills. The immersive nature of gamification challenges students to think critically and creatively, leading to a more comprehensive understanding of the material.

The benefits of gamification go beyond just academic performance. Gamified learning environments promote a sense of ownership over the learning process, which is critical for long-term success. When students are given the opportunity to make choices, set their own goals, and track their progress, they develop a sense of responsibility for their learning. This sense of agency encourages students to take an active role in their education, leading to higher levels of motivation and persistence. As a result, gamification not only improves short-term academic outcomes but also cultivates important skills such as self-regulation and time management that are crucial for lifelong learning.

In conclusion, the integration of gamification into educational settings offers substantial advantages in terms of student engagement, motivation, and learning outcomes. By creating more interactive and rewarding learning experiences, gamification fosters increased participation and persistence in tasks, leading to higher academic achievement. The ability to provide real-time feedback and track progress ensures that students remain focused and motivated throughout the learning process (Le, 2020). Gamification encourages deep learning and critical thinking, helping students retain and apply knowledge more effectively. As more educational institutions adopt gamified models, the potential for significant improvements in student achievement continues to grow.

Analysis of Supporting and Inhibiting Factors

The success of gamified learning in hybrid classrooms is influenced by a range of internal and external factors that shape how effectively students engage with and benefit from gamified approaches. Internally, one of the most significant factors is student motivation. Highly motivated students are more likely to embrace the interactive, competitive elements of gamification, leading to enhanced learning outcomes. Research shows that intrinsic motivation, which is often cultivated through rewards and challenges embedded in gamification, can have a positive impact on academic performance (Marcaida et al., 2022). Students who are more motivated by personal achievement and game mechanics tend to engage more deeply with the material, enhancing their learning experience.

Alongside motivation, prior knowledge and technological skills are crucial internal factors that influence the effectiveness of gamified learning. Students with a solid foundation in the subject matter are better equipped to navigate the gamified environment and build on existing knowledge. Conversely, those who lack the necessary background may find it difficult to succeed. Similarly, technological proficiency plays a critical role. Students who are comfortable with digital tools and online platforms can more easily adapt to the hybrid learning environment, whereas those with limited technological skills may face challenges in engaging with gamified content effectively. This digital divide can lead to disparities in how students experience and benefit from gamified learning.

Self-regulation skills also play a crucial role in determining the effectiveness of gamification. Hybrid learning environments, which often require students to manage their time and tasks independently, demand a higher level of self-regulation. Students who are adept at setting learning goals, managing their time, and staying focused are more likely to succeed in a gamified setting. These skills enable students to engage with the game elements of the learning process

without feeling overwhelmed by the autonomy required. Without these self-regulation skills, students may struggle to maintain focus and effectively use the gamified tools to enhance their learning.

Externally, the availability of technology is a significant factor that can either support or hinder the success of gamified learning. In under-resourced environments where access to digital devices and stable internet connections may be limited, students may find it challenging to fully participate in gamified learning activities. Disparities in access to technology can create unequal learning opportunities, with some students missing out on the benefits that gamification offers. Conversely, in environments where students have easy access to the necessary technology, gamified learning can be more readily embraced, leading to better engagement and improved outcomes.

The role of educators and institutional support is another crucial external factor influencing the success of gamification in hybrid classrooms. Teachers who are familiar with gamification tools and who integrate them effectively into the curriculum can greatly enhance the learning experience. Studies indicate that when educators provide clear guidance, support, and consistent communication, students are better able to engage with gamified learning tools (Nguyen-Viet & Nguyen-Viet, 2023). institutional support for hybrid learning models and a culture that encourages innovation and flexibility in teaching can significantly improve the effectiveness of gamified learning. When both educators and institutions are committed to creating an environment conducive to gamification, students are more likely to experience positive educational outcomes.

Discussion

The findings of this study build upon existing research that highlights the positive effects of gamification on student engagement and academic achievement. Previous studies, such as (Sappaile et al., 2024), have established that gamified platforms significantly enhance student engagement by fostering active participation and motivation. This study, however, explores the application of gamification within the context of hybrid classrooms, a setting that introduces unique challenges not fully addressed in prior research. One of the key challenges in hybrid education is balancing the interaction between in-person and online students, a dynamic that can hinder equitable participation. This research offers new insights into how gamification can be adapted to bridge this gap, providing a more inclusive learning experience that supports both in-person and remote learners.

In comparing hybrid learning environments with traditional or purely online models, the study reveals that gamification can offer substantial benefits in overcoming the barriers presented by hybrid settings. As noted by (Mystakidis, 2020), the hybrid classroom model presents unique complexities, including managing diverse student needs and ensuring equal access to resources. However, by integrating gamified elements, educators can foster a sense of community and engagement across both in-person and online students. This can promote more active learning and a collaborative atmosphere that is often missing in more conventional educational models. The results of this study underscore the adaptability of gamification to different learning environments, demonstrating its potential to enhance student motivation and performance in hybrid classrooms.

The implications of these findings for hybrid education are far-reaching, particularly in terms of its potential to improve student outcomes. As highlighted by (Lopes et al., 2019), gamification has proven to be an effective motivator, driving engagement and improving learning outcomes. In a hybrid context, the flexibility inherent in combining in-person and online learning further amplifies these benefits. Educators can leverage gamified strategies to increase student participation, encourage self-regulation, and provide a more engaging and dynamic learning environment. However, this study also stresses the importance of addressing challenges such as technology access, teacher training, and student self-regulation to maximize the effectiveness of gamification. These findings offer valuable guidance for further developing hybrid education strategies that are both engaging and effective, ultimately fostering greater student success.

CONCLUSION

In conclusion, this study confirms that the integration of gamification in hybrid classrooms positively influences student engagement and academic achievement. The use of gamified platforms enhances motivation, fosters active participation, and supports better learning outcomes, aligning with prior research on gamification's benefits. However, the study also highlights the unique challenges of hybrid learning environments, including the need for adequate technological infrastructure and teacher training. Based on these findings, it is recommended that educators implement gamification as a strategic tool to increase student engagement, while platform developers focus on enhancing features that support both in-person and online learning. Future research should explore the broader impacts of gamification, including its effects on different learning styles and subject areas, to further understand its full potential. The study's limitations include the sample size, time constraints, and the reliance on specific gamification platforms, which may not represent the variety of tools available in educational contexts. These limitations suggest that further studies with larger, more diverse samples and different technological tools are needed to validate and extend these findings.

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