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The Influence of Gamification on Learning on the Affective Domain of Elementary School Students: Systematic Literature Review

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Abstract: Gamification is the application of game elements in non-game contexts, has become an innovative trend in education to improve students' motivation, engagement, and learning experience. This study aims to systematically examine the effect of gamification on the affective domain of elementary school students, which includes aspects such as interest, attitude, and emotional values in learning. Using the *Systematic Literature Review* (SLR) approach based on the PRISMA method, this study analyzed relevant literature from leading databases. A total of 40 selected articles from leading journals, conferences, and literature were identified, involving empirical studies on the implementation of gamification in education. The results of the analysis showed that gamification consistently increased students' intrinsic motivation, emotional engagement, and positive attitudes towards learning. This study also found that the effect of gamification on the affective domain was greatly influenced by the implementation design, educational context, and teacher ability in utilizing technology. Thus, this study concludes that gamification has great potential to improve the affective aspect of learning at the elementary school level, but its success is highly dependent on proper design and implementation. This study recommends the development of a gamification model that is more inclusive and relevant to students' learning needs, as well as the integration of systematic evaluation elements to measure its long-term impact and make an important contribution to understanding the potential of gamification as a pedagogical approach that can improve the quality of learning, especially in the affective aspects of elementary school students.

Keywords: Gamification; Affective Domain; Elementary School; Motivation; Student Engagement

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Introduction

The use of gamification in learning has become one of the topics that is increasingly being researched and applied in various levels of education, including elementary education (Deterding et al., 2011), (Kapp, 2012). Gamification, which refers to the application of game elements in non-game contexts, has the potential to change the way students interact with learning materials, not only in cognitive but also affective aspects (Hamari et al., 2014), (Nah et al., 2014). The affective domain includes emotional aspects, attitudes, motivations, and values that students have in the learning

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process (Krathwohl et al., 1964), (Bloom, Taxonomy of educational objectives: The classification of educational goals., 1956). Given the importance of developing attitudes and motivation in elementary education, it is very relevant to examine how the application of gamification impacts the affective domain of elementary school students (Huang & Soman, 2013), (Faiella & Ricciardi, 2015).

This study has a strong rationalization, because although many studies have explored the impact of gamification on cognitive domains such as improving learning outcomes or conceptual understanding, studies that specifically highlight the influence of gamification on the affective domain of elementary school students are still limited (Zainuddin et al., 2020). (Dichev & Dicheva, 2017)In fact, learning at the elementary education level is not only aimed at honing intellectual abilities, but also at fostering positive attitudes, such as emotional involvement, self-confidence, and a willingness to continue (Krathwohl, 2002), (Bloom et al., 1956).

Furthermore, this study aims to analyze the trend of gamification use in Elementary Schools, the challenges faced in its implementation, and opportunities for future development (Deterding, 2011), (Suh & Wagner, 2017). This trend is important to understand in the context of the digital revolution that is increasingly dominating the world of education (Selwyn, 2016), (West, 2012). Digital technology has created new opportunities for the implementation of more interactive learning strategies (Gee, 2003), (Johnson et al., 2015). However, its implementation in elementary schools still faces various challenges, both in terms of infrastructure readiness, teacher competence, and student and parent acceptance (Eickelmann & Gerick, 2020), (Ertmer & Ottenbreit-Leftwich, 2010).

Research shows that gamification has a positive impact on student motivation and engagement, although the results are context-dependent (Hamari et al., 2014). Game elements such as points and leaderboards have been shown to be effective in increasing student motivation (Dichev & Dicheva, 2017), especially when these elements support student autonomy and competence (Hanus & Fox, 2015)Gamification also increases engagement and academic achievement in the long term (Zainuddin et al., 2020), but challenges remain, such as limited infrastructure and technological skills (Kim et al., 2018). Gamification also plays a role in improving students' attitudes and self-confidence (Tsay et al., 2018), (Fredricks et al., 2004), although inappropriate implementation can lead to confusion. Therefore, this study aims to fill this gap by providing a more in-depth analysis of how gamification can affect the affective dimension of elementary school students (Kapp, 2012), (Triandini et al., 2019).

Method

The method used in this study is the *systematic literature review* (SLR) method, this method is used to collect, evaluate, and analyze all literature relevant to the topic being studied (Page et al., 2020), namely the influence of gamification on learning towards the affective domain of elementary school students. *Systematic literature review* (SLR) is a structured and systematic review method of a large number of literatures that discuss the same or related topics (Richardson et al., 1995). This systematic review follows the preferred reporting items for systematic review and meta-analysis guidelines (Page et al., 2020). RQ: How does gamification in elementary school learning affect students' learning motivation?

Systematic reviews are an effective tool for synthesizing evidence (Moher et al., 2009). Therefore, this systematic literature review was conducted to explore how gamification influences students' learning motivation in primary school learning over a five-year period, from 2020 to 2024. PRISMA (Page et al., 2020)was used to determine which articles to include and exclude. The PRISMA

Statement helps researchers strengthen review and reporting processes (Wahono, 2015). There are several steps in compiling a systematic literature review:

1. Database Selection

The selection of databases used in this study was designed to cover relevant and high-quality literature. The selected databases are ERIC (Education Resources Information Center), Sciencedirect, and Google Scholar.

2. Search Keywords

The keywords used in the database for literature search are gamification, gamification-based learning , affective domain , affect of gamification, and elementary school students.

3. Inclusion and exclusion criteria

a. Inclusion criteria

Systematic review inclusion criteria are features or prerequisites that determine which studies will be included. Inclusion criteria are the study population, type of intervention, study design, and outcomes measured. Inclusion criteria help ensure that the selected studies are relevant to the research objectives set out in the systematic review (Moher et al., 2009). Although the process of collecting studies follows these criteria, some studies will be removed if they do not have the desired specific features. So, here is a list of inclusion criteria for this SLR.

Table 1. Inclusion Criteria

No	Inclusion Criteria	Description
1	Publication Time Range	Articles published in the last five years between 2020-2024.
2	Content Relevance	The study focused on in this research is related to the influence of gamification of learning at the elementary school level on students' affective domain.
3	Publication Language	The languages used are Indonesian and English
4	Publication Type	The types of publications used include scientific journals, conference proceedings, and review articles.
5	Researcher's Place	The research covers educational environments and elementary school students conducted in any country.

b. Exclusion Criteria

Exclusion criteria are research used in the research selection process in a systematic review. These criteria are used to determine which studies will be included in the systematic review and which studies will be excluded. Exclusion criteria can include study characteristics such as the type of study design, population, or type of intervention studied. These exclusion criteria serve to exclude studies included in the systematic review that are relevant to the purpose of the systematic review (Wahono, 2015). The exclusion criteria applied are as follows:

Table 2. Exclusion Criteria

No	Exclusion Criteria	Description
1	Incompatibility with Study Focus	Articles that are not relevant to the main topic, namely, the influence of gamification on learning towards the affective domain in Elementary Schools. The article is not a research topic that is in accordance with gamification in the affective domain.
2	Irrelevant Publication Types	Articles that do not match the required data.
3	Gamification of other than the Affective Domain	This article focuses on the emotional domain of learning through play, and also excludes articles that are not particularly relevant to elementary schools, such as pure research or those unrelated to the affective domain in elementary schools.

4. Study Selection Process and Systematic Map Review

The study selection process in Systematic Literature Review (SLR) involves several steps that are systematically designed and structured to ensure that only the most relevant and high-quality literature is included in the analysis (Wahono, 2015). In identifying keywords in online journals, identifying articles to be included or excluded, and then determining the number of articles that match the keywords included. The number of these studies is 285, the next stage is eligibility which focuses on the title and abstract of the studies that passed this stage as many as 145 studies. In the final step, the author carefully reviewed the selected articles based on specific criteria relevant to this study and included 40 research articles for discussion to answer the required research questions.

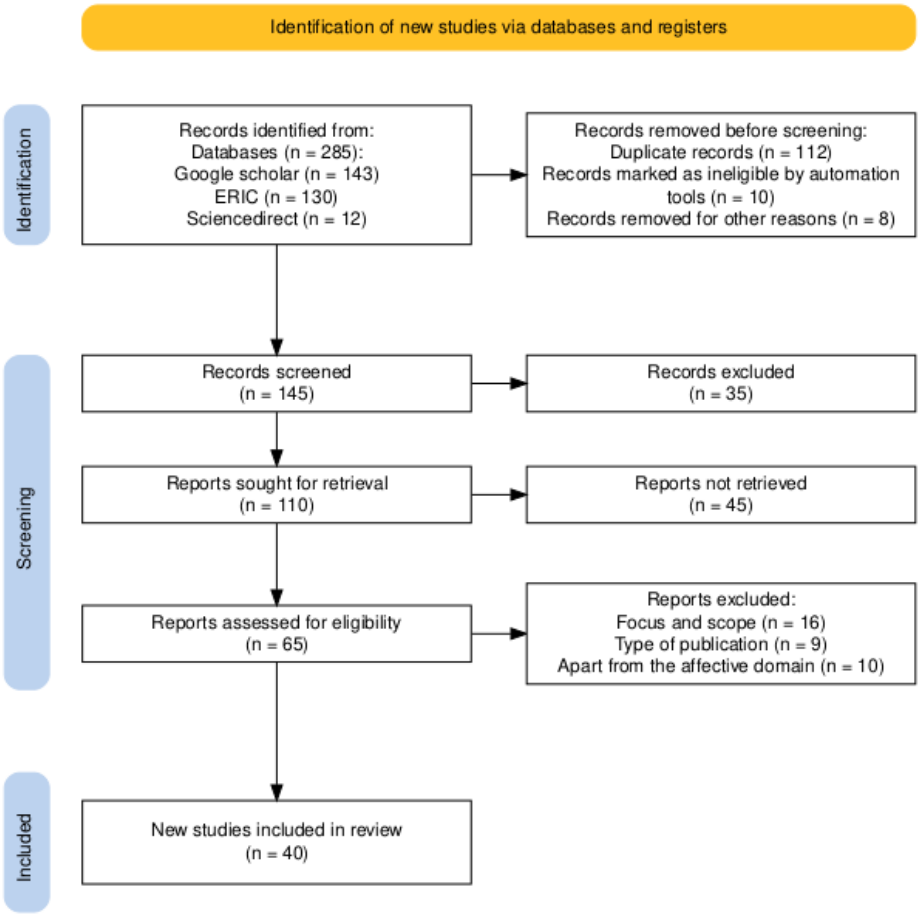

Figure 1. PRISMA diagram (https://estech.shinyapps.io/prisma_flowdiagram/)

Results

In this study, a total of 285 articles were identified from various relevant databases, from Google Scholar sources as many as 143 articles, ERIC as many as 130 articles, and Sciencedirect as many as 12 articles. Furthermore, identification was carried out on the articles found so that 145 articles were obtained that met the criteria. The final step was to select articles that could be fully accessed and met the inclusion and exclusion criteria, obtaining 40 articles for further analysis. The following is a grouping of articles based on the affective domain studied.

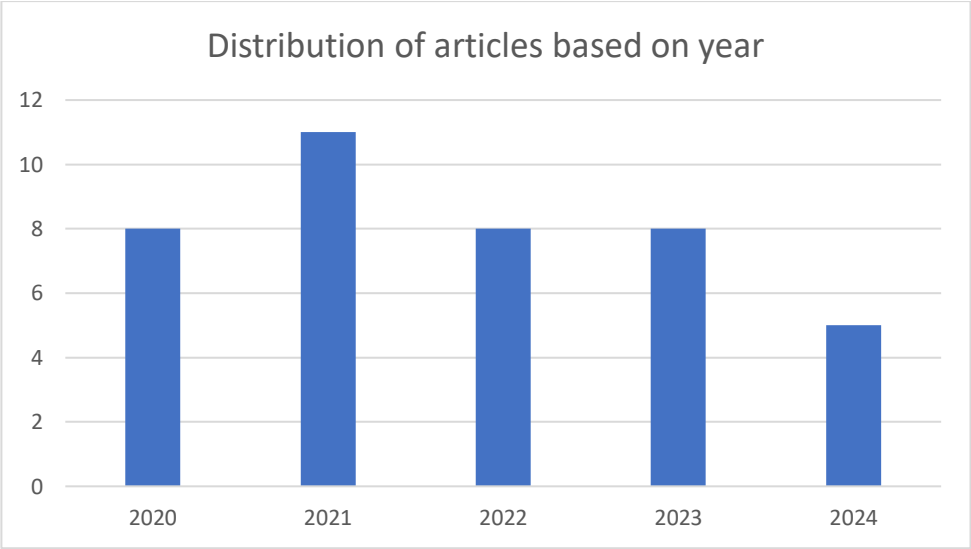

Figure 2. Distribution of articles based on year published

Gamification in Learning in Elementary Schools between 2020-2024

Based on Figure 2 above, In 2022, eight studies investigated gamification's impact on the affective domain in education, using various methodologies. Quantitative research highlighted gamification's role in enhancing motivation, fostering intrinsic engagement, and sustaining interest in learning (Alshaikhi, 2020; Liu et al., 2020; Gómez-García et al., 2020). Studies employing R&D approaches emphasized gamification's capacity to capture attention and maintain focus through structured game elements (Syawaluddin et al., 2020; (Chen et al., 2020)). Additionally, the Montessori approach demonstrated gamification's adaptability to child-centered strategies, promoting aptitude development (Lamrani & Abdelwahed, 2020). Other findings confirmed gamification's positive effects on attitudes and enthusiasm, reinforcing its effectiveness in educational engagement (Sabirli & Coklar, 2020; Alshammari, 2020). Collectively, these studies underscore gamification's potential to enhance various affective aspects of learning.

In 2021, eleven studies explored the impact of gamification on various affective domains in education, employing predominantly quantitative methodologies to derive their findings. Several studies focused on motivation, demonstrating how gamification enhances students' intrinsic drive to engage in learning activities (Vidergor, 2021; Ruiz-Bañuls et al., 2021). Attitudes were another key domain investigated, with studies highlighting gamification's role in fostering positive perceptions of learning environments and content (Prados Sánchez et al., 2021; Karamert & Kuyumcu Vardar, 2021; Kaplan et al., 2021). Interest and acceptance were examined in one study, emphasizing how gamification facilitates students' willingness to embrace and sustain their attention in educational tasks (Abdullah & Razak, 2021). Additionally, behavioral aspects were assessed, with findings

revealing that gamified environments positively influence student actions and engagement during learning processes (Kim & Castelli, 2021; Nurtanto et al., 2021). A comparative analysis explored the intersection of motivation and attitude, affirming gamification's potential to balance emotional and cognitive engagement (Mee Mee et al., 2021). Research also demonstrated its effectiveness in capturing and sustaining students' attention through structured game mechanics (Persada & Lutfi, 2020). Lastly, a study on interest underscored gamification's ability to make learning more appealing and relevant to students (Sipone et al., 2021). Collectively, these findings reinforce gamification's versatility in positively shaping the affective dimensions of learning across diverse educational contexts.

In 2022, eight studies examined the influence of gamification on various affective domains in education, employing diverse methods to uncover its impact. Quantitative research highlighted gamification's ability to enhance motivation and enjoyment, demonstrating its effectiveness in creating engaging and satisfying learning experiences (Oliveira et al., 2022). Mixed-method approaches revealed its dual impact on students' motivation and interest, providing insights into the emotional and cognitive benefits of gamified learning (Dirgantoro et al., 2022). Studies focusing on students' learning interest showed that gamification captures and sustains attention, leading to more consistent engagement with educational content (Maulidya et al., 2022; Jaafar & Yusoff, 2022). Using the ADDIE model in research and development, one study affirmed gamification's capability to boost student interest through iterative and well-designed educational interventions (Sarifah et al., 2022). Additionally, qualitative research explored its role in reducing anxiety while fostering motivation, showcasing gamification as a supportive tool for emotional well-being in learning environments (Edwards, 2022). Quantitative findings also demonstrated gamification's contributions to ease of learning, enjoyment, and fostering positive attitudes, emphasizing its utility in delivering knowledge effectively and enjoyably (Lin, 2022). These studies collectively underscore gamification's broad potential in positively shaping the affective aspects of education.

In 2023, eight studies examined the affective impact of gamification in education, employing a variety of methods to assess its effectiveness. Quantitative research demonstrated gamification's ability to boost students' motivation and engagement, fostering deeper participation in learning activities (Ku et al., 2023; Zourmpakis et al., 2023). Mixed-method approaches provided insights into the dual impact of gamification on motivation and attitudes, highlighting its capacity to promote positive emotional responses and sustained interest in educational settings (Ccoa et al., 2023; Tatlı et al., 2023). Qualitative studies further explored its role in enhancing motivation and attention, affirming its effectiveness in sustaining focus and fostering a conducive learning atmosphere (Lomos et al., 2023; Yan, 2023). Another quantitative study emphasized gamification's role in strengthening motivation, attention, and attitudes, reinforcing its versatility in supporting diverse affective domains (Casanova-Mata, 2023). Additionally, research highlighted the interplay between gamification and organizational culture, suggesting its potential to influence broader educational environments positively (de la Fuente-Anuncibay et al., 2023). Collectively, these studies underscore gamification's multifaceted contributions to enhancing students' affective experiences in learning.

The findings from the five studies published in 2024 highlight gamification's significant role in enhancing various affective domains in education, with all employing quantitative methods to uncover its impacts. One study demonstrated gamification's ability to reduce student anxiety, creating a more relaxed and supportive learning environment conducive to academic success (Ersozlu, 2024). Another

study emphasized its effectiveness in boosting motivation in language learning, showcasing how interactive and engaging gamified activities can drive intrinsic learning efforts (Jayanti et al., 2024). Similarly, gamification was found to consistently enhance student motivation across science and technology education, highlighting its relevance in diverse academic fields (Sappaile, 2024).

In addition to motivation, gamification positively influenced self-efficacy, interest, and enjoyment, as revealed in another study, which affirmed its potential to foster confidence and sustain student engagement in educational tasks (Rayan & Watted, 2024). Furthermore, research focused on simulation-based gamification demonstrated its ability to maintain motivation over extended periods, emphasizing its applicability in complex learning scenarios . Together, these findings underscore gamification's effectiveness in addressing a range of affective needs, making it a versatile and impactful tool in modern educational practices.

In the period 2020 to 2024, the application of gamification in elementary school classes is growing, influenced by technological advances and changes in educational paradigms, such as the implementation of the Merdeka Curriculum in Indonesia which emphasizes activity-based learning and creativity. Several studies have shown that gamification can increase students' interest and motivation to learn, as well as support them in developing cognitive and affective skills. The use of technological tools such as YouTube and WhatsApp during the COVID-19 pandemic has demonstrated the effectiveness of digital platforms in integrating gamification to increase student engagement (Azizan et al., 2020); (Awaluddin & Samsudin, 2021). Other studies suggest the use of gamification and game-based learning in mathematics learning to increase collaboration between students and create a more interactive and enjoyable learning experience (Fonseca et al., 2023). Thus, gamification is an effective tool in supporting the achievement of learning objectives in elementary schools, which is expected to foster curiosity and enthusiasm for learning among students.

Discussions

The Influence of Gamification on Learning on the Affective Domain of Elementary School Students

Gamification not only focuses on the cognitive aspect of learning, but also has a significant impact on students' affective domain. The affective domain includes students' attitudes, feelings, and motivations in facing learning tasks (Nah et al., 2014). Based on the analyzed studies, the influence of gamification on the affective domain of elementary school students can be explained through the following aspects:

Increasing Learning Motivation

Gamification has emerged as a transformative educational tool that significantly impacts students' motivation to learn. A growing body of research from 2020 to 2024 highlights how the integration of game elements, such as competition, rewards, and a sense of accomplishment, fosters intrinsic motivation in students. According to Buckley & Doyle (2016), gamification creates fun challenges and achievable rewards that not only make learning more engaging but also drive students to actively participate. This aligns with Sailer et al. (2017), who found that gamification enhances intrinsic motivation, sparking students' interest in learning without relying on external incentives. Studies conducted across diverse educational contexts support these findings, with research demonstrating that gamified environments help sustain students' interest and attention (Liu et al., 2020; Syawaluddin et al., 2020), particularly in elementary school settings where engagement is crucial

for fostering curiosity and enthusiasm for learning (Azizan et al., 2020; (Fonseca et al., 2023). Furthermore, gamification's ability to influence students' affective domains, such as positive attitudes and emotional responses, has been confirmed by several studies, emphasizing its role in enhancing students' overall learning experiences (Alshaikhi, 2020); (Ruiz-Bañuls et al., 2021).

In addition to increasing motivation, gamification plays a crucial role in fostering collaboration, interest, and sustained focus. Research indicates that gamification can boost students' interest in subjects such as mathematics (Fonseca et al., 2023), encourage collaborative learning, and create a more interactive, enjoyable classroom atmosphere (Awaluddin & Samsudin, 2021). Moreover, recent studies have shown that gamification can effectively reduce anxiety and support emotional well-being, further highlighting its broad utility in enhancing learning outcomes (Ersozlu, 2024); (Edwards, 2022). As digital tools like YouTube and WhatsApp became more widely used during the COVID-19 pandemic, gamified learning environments adapted to online platforms proved particularly effective in maintaining engagement and motivation (Azizan et al., 2020). These findings reinforce gamification's versatility in addressing diverse affective needs and its capacity to create dynamic, student-centered learning environments. Collectively, the research underscores gamification's potential to drive intrinsic motivation, improve learning experiences, and contribute to more collaborative and emotionally supportive educational settings.

Increasing Positive Attitudes and Student Engagement

Gamification has been shown to significantly enhance students' positive attitudes toward learning by creating engaging and enjoyable educational experiences. Based on research articles from 2020 to 2024 highlights that gamification fosters enthusiasm, positive perceptions of learning content, and emotional well-being, making students more receptive to educational tasks (Sabirli & Coklar, 2020); (Prados Sánchez et al., 2021); (Edwards, 2022). By incorporating structured game mechanics such as rewards, challenges, and interactivity, gamification not only improves the cognitive connection with the material but also strengthens the emotional bond between students and their learning experiences (Chen et al., 2023). This dual impact is further reinforced by findings that show gamification's ability to reduce anxiety and promote a relaxed learning environment, allowing students to feel more confident and enjoy the learning process (Ersozlu, 2024); (Lamrani & Abdelwahed, 2020). Such positive attitudes are essential for long-term engagement, as students who associate learning with happiness and enjoyment are more likely to remain intrinsically motivated.

In addition to fostering positive attitudes, gamification significantly enhances student engagement by capturing attention and sustaining focus through dynamic and interactive elements. Quantitative and mixed-method studies affirm that gamification boosts students' participation in learning activities, making tasks more appealing and relevant (Liu et al., 2020); (Ku Mohd et al., 2023). For instance, structured game-based learning interventions have been found to maintain students' interest over extended periods, especially in subjects like mathematics and science, where engagement often diminishes (Fonseca et al., 2023); (Sappaile, 2024). Furthermore, gamification's influence on emotions, such as creating feelings of joy and involvement, strengthens students' connection to the learning process, fostering deeper commitment and collaboration (Chen et al., 2020); (Alshammari, 2020). These findings underscore gamification's role not only as a tool for enhancing immediate engagement but also as a strategy for cultivating sustained and meaningful participation in diverse educational settings.

Reduce Stress and Anxiety

Gamification has demonstrated its ability to reduce student stress and anxiety by transforming traditional learning into a more enjoyable and engaging experience. The incorporation of game elements such as levels, rewards, and challenges creates an atmosphere of playful learning, helping students to focus on the process rather than the pressure of academic tasks (Galiç & Yıldız, 2023). Digital gamification tools, such as Kahoot, have proven effective in reducing anxiety, particularly in subjects like mathematics, where stress is often prevalent (Ersozlu, 2024). These platforms allow students to engage with content in a more relaxed manner, offering fun and interactive activities that distract from exam-related stress. Additionally, qualitative research underscores the role of gamification in fostering emotional well-being, as it encourages students to enjoy the learning journey while minimizing the apprehension often associated with traditional methods (Edwards, 2022); (Chen et al., 2023).

Moreover, gamification positively influences students' emotional responses by promoting happiness and a sense of involvement in learning activities. Studies have shown that integrating game-based strategies helps students not only understand the material but also enjoy the process, strengthening their positive relationship with education (Chen et al., 2023). This is especially critical in reducing the anxiety tied to academic performance, as gamified environments allow students to explore content at their own pace, providing a sense of achievement through structured challenges (Lamrani & Abdelwahed, 2020). By combining motivation-boosting mechanics with emotional support, gamification creates an inclusive and adaptive learning space that accommodates diverse student needs, ensuring a more relaxed and effective learning experience.

Increase Satisfaction, Sense of Accomplishment, and a Growth Mindset

Gamification has proven effective in strengthening students' sense of accomplishment, satisfaction, and growth mindset, as highlighted by recent studies. The integration of reward systems, such as points or badges for task completion or goal achievement, enhances students' self-confidence and reduces feelings of inadequacy, contributing to positive affective outcomes (Yildirim, 2017). Research by Alshaikhi (2020) and Oliveira et al. (2022) underscores how gamified approaches promote a sense of fulfillment by linking efforts to tangible rewards, creating a feedback loop that sustains engagement. Structured game mechanics, like progressive leveling or cumulative rewards, have been shown to encourage students to persist in challenging tasks, fostering both satisfaction and intrinsic motivation (Syawaluddin et al., 2020); (Chen et al., 2020). These findings align with the Montessori approach, which emphasizes personalized, achievement-oriented gamification to cultivate aptitude development and meaningful engagement (Lamrani & Abdelwahed, 2020).

Moreover, gamification supports the cultivation of a growth mindset, enabling students to view challenges as opportunities for learning rather than barriers to success. By incorporating elements such as incremental progress tracking and adaptive challenges, gamification teaches students that failure is a natural part of the learning journey and not a definitive endpoint (Haimovitz & Dweck, 2017). This perspective encourages resilience and adaptive thinking, essential traits for academic and personal growth. Studies by Ccoa et al. (2023) and Dirgantoro et al. (2022) demonstrate how gamification fosters a positive mental attitude, helping students develop perseverance and a constructive response to setbacks. Additionally, gamification’s role in reducing anxiety and fostering emotional well-being

further supports students' ability to approach learning with confidence and a focus on self-improvement (Edwards, 2022); (Ersozlu, 2024).

Critically, the effectiveness of gamification in fostering satisfaction and a growth mindset lies in its ability to balance challenge and reward, creating an engaging and emotionally supportive learning environment. Research by Rayan & Watted (2024) highlights how gamification not only enhances enjoyment and interest but also promotes self-efficacy, equipping students with the confidence to tackle increasingly complex tasks. This aligns with findings by Liu et al. (2020) and Gómez-García et al. (2020), which emphasize the role of intrinsic engagement in sustaining interest and motivation. Furthermore, by integrating gamified elements with digital platforms, such as during the COVID-19 pandemic (Azizan et al., 2020), educators can create accessible and scalable opportunities for student-centered learning. Collectively, these insights confirm that gamification is not just a tool for engagement but a transformative approach that nurtures satisfaction, accomplishment, and growth-oriented learning in diverse educational contexts.

Key Considerations for Implementing Gamification in Learning

Engagement through Interactivity

The integration of gamification in education emphasizes active participation through game elements like points, challenges, and rewards. This interactivity fosters emotional connections to learning, creating an engaging and enjoyable experience for students. Tools such as Kahoot! and Quizizz have been shown to enhance student enthusiasm and active involvement in the learning process (Wardana & Sagoro, 2019); (Ccoa et al., 2023). Such approaches can mitigate learning anxiety and promote positive emotional attitudes towards subjects (Ersozlu, 2024).

Promoting Motivation and Achievement

Gamification cultivates intrinsic motivation by offering students immediate feedback and a sense of achievement upon completing tasks (Ryan & Deci, 2020). Personalized progression systems further motivate students to pursue goals aligned with their abilities and interests, reinforcing their self-esteem and persistence (Oliveira et al., 2022). Research also highlights that gamification tools like ClassDojo encourage the development of positive behavior and attitudes in learners, leading to increased emotional and social well-being (Kaplan et al., 2021).

Building Social Values through Collaboration

Gamification that incorporates collaborative activities plays a vital role in fostering teamwork and social interaction. Educational robots and group-based learning games promote inclusivity and a shared sense of responsibility, enhancing social cohesion among students (Ku et al., 2023). These methods align with the findings of Lamrani & Abdelwahed (2020), which emphasize that collaborative gamification nurtures empathy and respect for diverse roles within teams, crucial for holistic affective development.

Ensuring Accessibility and Flexibility

The accessibility of gamification platforms on mobile devices allows for flexible and inclusive learning opportunities, making education more adaptable to students' individual needs and schedules (Su & Cheng, 2015); (Hamari et al., 2014). This adaptability, coupled with the fun and engaging nature of game-based learning, increases student participation and reduces barriers to education (Abdullah

& Razak, 2021); (Alshammari, 2020). Such systems demonstrate the potential of technology to transform traditional learning into an emotionally enriching experience.

In critically applying gamification in educational contexts, it is essential to consider potential drawbacks, such as the risk of fostering game addiction among students. While gamification offers significant benefits in enhancing motivation, engagement, and learning outcomes (Abdullah & Razak, 2021); (Ccoa et al., 2023), the line between educational engagement and unhealthy attachment to game-like features can blur. Studies have shown that the immersive and reward-based nature of gamification, if not carefully designed, may lead to over-reliance on external incentives, potentially diverting students from intrinsic learning goals (Chen et al., 2020); (Casanova-Mata, 2023). Therefore, educators and designers must balance gamification elements with a focus on promoting self-regulated learning and safeguarding students' well-being, ensuring that educational tools remain a means to an end rather than an addictive end in themselves.

Conclusion

Based on the analysis of various studies that have been conducted on gamification in education, there is evidence that the application of gamification can have a positive impact on students' affective domains, especially in terms of motivation, engagement, and attitudes towards learning. The studies reviewed show that gamification elements, including students' attitudes, interests, and values, can increase students' interest in learning.

In addition, the use of game-based learning has also been proven effective in increasing students' self-confidence and perception of their abilities. However, although gamification shows great potential in improving students' affective aspects, research results also show the need for the right approach in gamification design to avoid negative effects such as stress or dependency. Therefore, the implementation of gamification needs to consider the characteristics of students, the content being taught, and the learning objectives to be achie0ved. Gamification can be an effective tool in creating a more enjoyable and engaging learning experience for students, but it still requires careful planning and evaluation to achieve optimal results.

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