

Gamification as an Innovative Learning Strategy: A Literature Review

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Abstract. Educators in 21st century are required to be increasingly creative in designing learning activities in order to maximize their role as facilitators and to create a student-centered learning environment. Gamification Learning is a learning approach that incorporates various game elements to enhance enjoyment, motivation, and student engagement in the learning process. This study aims to review findings from previous research on Gamification Learning as an innovative learning strategy in educational contexts. The method employed was a literature review by selecting relevant scientific articles from national and international academic databases based on predetermined inclusion criteria. The selected articles were analyzed using a qualitative descriptive approach to identify key themes related to the conceptual foundations of Gamification Learning, its forms of implementation in learning activities, and the outcomes reported in prior studies. The results indicate that Gamification Learning is effectively implemented through a combination of mechanical elements (such as points, badges, and leaderboards) that provide immediate feedback and drive competitiveness, and dynamic elements (such as quests/challenges, levels, narratives, and progressive flow) that offer contextual meaning to learning activities. Learning activities designed by integrating these two categories of elements have been shown to enhance students' intrinsic motivation and active engagement across cognitive, affective, and behavioral domains. Therefore, Gamification Learning demonstrates significant potential as an innovative learning strategy when designed in a pedagogically sound and contextual manner. This review provides a theoretical foundation for educators and researchers in the development and empirical investigation of Gamification Learning in educational practice.

Keywords: *gamification learning; innovative learning strategy; student motivation; student engagement; literature review*

Abstrak. Pendidikan Abad-21 membentuk para pendidik untuk semakin kreatif dalam mendesain kegiatan pembelajaran guna memaksimalkan peran pendidik sebagai fasilitator dan menciptakan iklim Student Centered selama proses pembelajaran. Konsep Gamification Learning adalah pendekatan pembelajaran yang menggunakan berbagai elemen dalam games agar peserta didik merasa enjoy, termotivasi, dan mau lebih banyak terlibat dalam pembelajaran. Penelitian ini bertujuan untuk mengkaji temuan penelitian terdahulu mengenai Gamification Learning sebagai strategi pembelajaran inovatif dalam konteks pendidikan. Metode yang digunakan adalah kajian literatur dengan menyeleksi artikel ilmiah yang relevan dari basis data akademik nasional dan internasional berdasarkan kriteria inklusi yang telah ditetapkan. Artikel yang terpilih dianalisis menggunakan pendekatan deskriptif kualitatif untuk mengidentifikasi tema-tema utama yang berkaitan dengan landasan konseptual Gamification Learning, bentuk implementasinya dalam kegiatan pembelajaran, serta luaran yang dilaporkan dalam penelitian sebelumnya. Hasil kajian menunjukkan bahwa Gamification Learning secara efektif diterapkan melalui kombinasi elemen mekanis (seperti points, badges, dan leaderboards) yang berfungsi sebagai umpan balik langsung dan pemacu kompetisi, serta elemen dinamis (seperti quests/tantangan, tingkat/levels, narasi, dan alur progresif) yang memberikan konteks dan makna mendalam pada aktivitas belajar. Kegiatan pembelajaran yang dirancang dengan mengintegrasikan kedua kelompok elemen ini terbukti dapat mendorong motivasi intrinsik dan meningkatkan keterlibatan aktif peserta didik secara kognitif, afektif, dan perilaku. Dengan demikian, Gamification Learning memiliki potensi yang signifikan sebagai strategi pembelajaran inovatif apabila dirancang secara pedagogis dan kontekstual. Kajian ini memberikan landasan teoretis bagi pendidik dan peneliti dalam pengembangan dan penelitian empiris terkait penerapan Gamification Learning dalam pembelajaran.

Kata kunci: *pembelajar berorientasi gamifikasi; strategi pembelajaran inovatif; motivasi siswa; keterlibatan siswa; tinjauan pustaka*

INTRODUCTION

The rapid development of the digital age has strengthened the connection between technology and human life, particularly for the younger generation who have grown up as digital natives. For this generation, technology is no longer merely a communication tool or a supplementary medium; rather, it has become an integral part of their mindset and daily activities. Students in this era possess distinctive characteristics, such as the ability to process information quickly, a preference for dynamic visualizations,

and a tendency to actively engage in interactive learning. However, these characteristics often clash with conventional teaching methods, which remain one-way in nature. The mismatch between students' learning styles and teachers' instructional strategies risks reducing student engagement and diminishing the effectiveness of achieving meaningful learning objectives. Therefore, teachers are required to be adaptable in understanding students' needs in order to formulate innovative learning strategies relevant to the times.

One form of technology that is deeply intertwined with the lives of digital natives is gaming. The interactive elements, challenges, and reward systems in games have proven effective at evoking joy, stimulating motivation, and encouraging active participation. This phenomenon has prompted educators and researchers to adopt game mechanics into non-game contexts a practice known as gamified learning. Integrating game elements such as points, badges, leaderboards, and narratives into the learning process is an innovative strategy with the potential to enhance students' cognitive, affective, and behavioral engagement. As digital platforms continue to evolve, the trend toward gamification is on the rise, whether implemented directly in face-to-face classroom activities or through self-paced learning apps.

Although research on gamified learning has grown rapidly in recent years, the majority of previous studies still have limited scopes. Most studies have focused on short-term experimental tests oriented solely toward cognitive learning outcomes, such as a temporary increase in test scores. As a result, there remains a knowledge gap regarding how gamification can be integrated holistically and sustainably as an innovative learning strategy capable of maintaining students' intrinsic motivation in the long term. Furthermore, findings in the literature regarding the impact of competitive dynamics such as the use of leaderboards still show contradictory results; on the one hand, they can boost learning ambition, but on the other hand, they risk triggering anxiety or demotivation among students with lower achievement levels.

Given this urgency and these dynamics, this literature review was conducted to address a research gap by systematically summarizing, mapping, and analyzing key findings related to gamified learning. Specifically, this study aims to dissect the main elements of gamification, analyze its impact on learning outcomes, and identify pedagogical challenges in its implementation to provide comprehensive guidance for the application of innovative learning strategies in the modern era.

METHODS

Study area

This study focuses on the field of digital education by exploring the integration of gamified learning as an innovative teaching strategy. The study centers its analysis on key elements, the impact on learning outcomes, and the pedagogical challenges involved in its implementation, as drawn from various reputable scientific publications.

Procedures

Data Collection and Literature Search

The author employed a literature review method in this study to examine and interpret various primary scientific sources. The procedure began with gathering literature from various online sources, such as Google Scholar, scientific repositories, and national and international journal portals, to obtain comprehensive data on the application of gamification learning and game-based learning. The search focused on journal articles, conference proceedings, review articles, and chapters from scientific books using keywords related to gamification learning and innovative learning strategies in the titles, abstracts, and keywords of the articles, while excluding non-academic publications.

Selection and Categorization

The next step is to read and thoroughly examine the collected literature to broaden one's scientific knowledge. The identified literature is then screened and categorized based on its relevance to the topics of game-based learning and innovative learning strategies in order to obtain appropriate and valid sources.

Data Analysis

Data analysis was conducted by creating research notes that highlighted key points regarding gamified learning and innovative learning strategies. The author critically reviewed the categorized references, extracted key concepts, and developed a theoretical framework as the primary foundation for drawing research conclusions [1].

RESULTS AND DISCUSSION

Characteristics of Reviewed Studies

Table 1. Summary of Reviewed Studies on Gamification in Education

NO.	Penulis dan Tahun	Konteks dan Sampel	Elemen Gamifikasi yang digunakan	Materi atau Subjek Pembelajaran	Hasil Utama
1	Nurjannah and Andi Baso Kaswar (2021)	Mathematics / 27 middle school students (8th grade)	points, Badges, Leaderboards	Mathematics	There has been an improvement in learning outcomes through the use of gamification in the learning process
2	Christy Mahendra, Romanus Edy Prabowo, David Kritian Paath, Wilson Nasumi Mili, and Bergitta Dwi Annawati (2023)	Science / 9 ninth-grade middle school students and 74 twelfth-grade high school students	points, Badges, Leaderboards	Ideal gas law (Physics)	There was an increase in final scores at the junior high school level, with academic performance rising by 64%, and at the senior high school level, it rose by 76%.
3	M.Mahmubi dan Homaidi (2025)	Mata Pelajaran Umum	points, Badges, Leaderboards	Mata pelajaran umum	Terjadi peningkatan dalam keterlibatan siswa, menciptakan suasana kompetitif yang positif, serta memberikan umpan balik langsung yang mendukung proses belajar.
4	Rita Karmila Sari and Siti Nurani (2021)	English Language Learning	points, Badges, Leaderboards	English Language Learning	The results of the study show that gamified learning apps (Quiziz and Kahoot) offer various benefits for English language learning, including improving students' skills and motivation to actively and communicatively participate in the English language learning process.
5	Rahmi Siti Ayunda, Kuntum An nisa Imania, and Siti Husnul Bariyah (2026)	General Subjects in Junior High School	points, Badges, Leaderboards	General Subjects in Junior High School	The study's findings indicate that the implementation of gamification elements such as points, levels, badges, and leaderboards can significantly improve learning motivation, student engagement, and learning outcomes.

Based on the table of study characteristics above, gamification is being applied in the teaching and learning process in the classroom. The subjects covered in the table vary, ranging from general studies, mathematics, and science to language arts. The mechanical elements of gamification Points, Badges, and Leaderboards remain the primary options frequently tested by researchers. The majority of studies indicate that the use of gamification in the learning process leads to improved final outcomes, increased student motivation, and enhanced communication skills among students.

Key Elements of Gamification

As cited by Ranieri et al. [2], in order to better understand the concept of gamification, we have to first clarify that gamification does not employ games for non-entertainment purposes, as serious games, but rather it affords elements of a game experience to improve retention.

Mechanical Elements of Gamification

The mechanical elements of gamification known as PBL (points, badges, and leaderboards) are frequently used in the learning process because they are relatively easy to implement across various digital platforms. Sailer et al. [3] state that points serve to provide detailed feedback directly linked to the behavior or achievements of participants in the game; badges serve as visual symbols of collectible achievements; and leaderboards display participants' rankings based on accumulated points, thereby fostering a competitive dynamic among participants.

Empirically, Sailer et al. [3] found that the combination of badges, leaderboards, and performance graphs influences participants' competency development as well as their understanding of the significance of their tasks. In the context of language learning, Gokaslan and Kose [4] reported that the use of Kahoot! a gamification platform based on points and leaderboards has a positive effect on students' vocabulary mastery and retention.

Dynamic Elements

The second category includes elements that are more focused on the learning experience and narrative structure, namely quests/challenges, levels, immediate feedback, and narratives/stories. These elements serve to provide context and meaning to learning activities, rather than merely rewarding outcomes. Quests or challenges structure the learning material into a series of tasks that resemble real-world problems, so that learners have a clear direction and purpose as they go through the learning process.

Gamification Platforms and Implementation Channels

Mechanical and dynamic elements are generally implemented through digital platforms or gamified applications, including Kahoot, Quizizz, ClassDojo, and Duolingo. Kahoot is an interactive quiz platform based on points and leaderboards that is often used in classroom learning to support gamified learning. Kahoot can create a fun learning atmosphere and increase student engagement and perception of learning. Sari and Nurani [5] state that Kahoot can improve students' abilities and motivation to actively and communicatively participate in the learning process. Indonesian-language classroom use has likewise been discussed in the literature [17].

Quizizz offers a mechanism similar to Kahoot! but with an emphasis on personalized, real-time feedback displayed on each participant's screen, as well as a feature for reviewing answers. ClassDojo differs from the previous two platforms in that it focuses on gamifying classroom behavior management through a system of positive and negative points that teachers, students, and parents can access in real time. Meanwhile, Duolingo is a language-learning platform that integrates nearly all elements of gamification into a single ecosystem, ranging from points, levels, daily streaks, to narratives of learning progress.

Impact of Gamified Learning on Instructional Outcomes

The usage of gamification in education is a massive benefit for motivation, user interaction, and social effects. Form in the analysis by Saleem et al. [6] The gamified elements such as points, badge, feedbacks, level, rewards, challenges, etc. A review of the selected literature indicates that the outcomes of gamified learning are not singular but are distributed across three interrelated domains: cognitive, motivational, and behavioral. This categorization is necessary precisely because previous research has tended to focus solely on short-term cognitive outcomes, as mentioned in the introduction. The magnitude and stability of gamification's effects vary across these domains, so the general claim that gamification improves learning outcomes requires a more specific examination.

Cognitive Outcomes and Academic Achievement

The strongest quantitative evidence regarding the effect of gamification on cognitive achievement comes from a meta-analysis by Sailer and Homner [7], which synthesized the results of experimental studies and found a positive effect on cognitive outcomes of $g = 0.49$ (95% CI [0.30; 0.69]; $k = 19$; $N = 1,686$). These findings are supported by a meta-analysis by Bai et al. [8] of 30 interventions from 24 quantitative studies, which reported a moderate effect size (Hedges' $g = 0.504$; 95% CI [0.284; 0.723]) and found no evidence of publication bias. It is important to note that Sailer and Homner [7] confirmed that the effect in the cognitive domain remained stable when the analysis was limited to studies of high methodological quality, whereas the effects in the motivational and behavioral domains were less stable. Thus, claims regarding improvements in academic achievement have relatively stronger empirical support compared to claims regarding improvements in motivation.

A consistent pattern emerged across the studies reviewed in this review. Nurjannah and Kaswar [9] reported an improvement in mathematics learning outcomes among 27 junior high school students following the implementation of a combination of points, badges, and leaderboards. Mahendra et al. [10] found a 64% increase in science learning scores at the junior high school level and a 76% increase at the senior high school level. The consistency of these findings suggests that gamification has the potential to support academic achievement at the secondary level. It should be noted that both studies involved small samples and did not report follow-up measurements; therefore, their findings should be interpreted as preliminary indications rather than conclusive evidence.

Nevertheless, there are two limitations that need to be considered. First, most studies measure outcomes through post-tests administered immediately after the intervention ends, thus failing to address questions regarding long-term memory retention. The issue of duration arises in a different form in the analysis by Bai et al. [8] which found that the length of gaming experience moderates the magnitude of gamification's effect; this finding pertains to the duration of the intervention, not the persistence of learning outcomes after the intervention ends. Second, the available meta-analyses have not distinguished between lower-level cognitive outcomes such as factual recall and procedural mastery and higher-level cognitive outcomes, such as critical thinking and problem-solving. The instruments used in the primary studies generally consist of written tests with total scores; therefore, the reported effect sizes cannot yet be interpreted as evidence that gamification enhances higher-order reasoning.

Affective and Behavioral Engagement

In the affective and behavioral domains, the direction of gamification's effect remains positive, but with a smaller magnitude and lower stability. Sailer et al. [3] reported an effect size of $g = 0.36$ on motivational outcomes and $g = 0.25$ on behavioral outcomes. Moderator analysis in the same study showed that the inclusion of game fiction, as well as the combination of competition and collaboration, was the most effective configuration for fostering behavioral outcomes. These findings indicate that student engagement is determined more by the quality of the narrative and the structure of the challenges than by the accumulation of points, badges, or leaderboards. In line with this, Saleem, Noori, and Saleem et al. [6] concluded that the use of gamification in education provides significant benefits in terms of motivation, user interaction, and social influence through elements such as points, badges, feedback, levels, rewards, and challenges.

A qualitative synthesis by Bai et al. [8] of 32 studies identified four reasons why students prefer gamified learning: increased enthusiasm, the availability of performance feedback, the fulfillment of the need for recognition, and the encouragement of learning goal-setting. These four reasons can be interpreted through the self-determination theory framework: immediate feedback and a tiered system address the need for competence; the freedom to choose mission paths addresses the need for autonomy; and teamwork and player interaction address the need for relatedness. When these three psychological needs are met, the resulting motivation tends to be intrinsic and more enduring than motivation that relies solely on external rewards. This motivational interpretation is also consistent with self-determination theory [18].

At the behavioral level, the impact of gamification is evident through increased active participation, classroom attendance, and students' willingness to complete tasks independently. Mahmubi and Homaidi [11] noted an increase in student engagement, the creation of a positive competitive atmosphere, and the availability of immediate feedback that supports the learning process. The availability of such feedback allows students to recognize and correct their mistakes on the spot, thereby fostering self-regulated learning.

Conversely, findings regarding the reduction of test anxiety still show contradictory results. On the one hand, game-based formats are often assumed to reduce the psychological pressure associated with formal assessments, although this assumption is rarely tested directly. On the other hand, Bai et al. [8] found that gamification was also reported to cause anxiety and jealousy among some students, particularly when individual performance was publicly displayed. This contradiction underscores that the affective outcomes of gamification are highly dependent on the configuration of the selected elements and the characteristics of the students being served, and it serves as the starting point for a discussion of implementation challenges in the following subsection.

Implementation Challenges and Pedagogical Risks

The positive findings in the previous subsection should not be interpreted as a guarantee of success. In fact, a number of studies report neutral to negative outcomes, which Toda, Valle, and Toda et al. [12] categorized into four groups: loss of performance, undesired behavior, indifference, and a declining effect. The following four challenges represent the pedagogical risks that most consistently emerge in the literature.

Score Orientation and the Over-justification Effect

First, the most fundamental risk is a shift in learning orientation from mastering the material to pursuing points, which in motivational psychology is known as the over-justification effect. A meta-analysis by Deci, Koestner, and Deci et al. [13] shows that external rewards contingent on engagement in a task can weaken intrinsic motivation for that task. In the context of learning, activities that were originally undertaken out of curiosity are transformed into activities undertaken for the sake of achieving a score, causing motivation to collapse once the reward system is discontinued. The most frequently cited empirical evidence comes from a one-semester (16-week) longitudinal study by Hanus and Fox [14] that compared two classes with identical curricula. The class that implemented leaderboards and badges actually showed a decline in motivation, satisfaction, and learner empowerment over time and even received lower final exam scores, with intrinsic motivation acting as a mediating variable. Toda et al. [12] also noted a tendency for students to focus more on the mechanics of the game than on the substance of the assessment.

Novelty Effect and Declining Engagement

Second, gamification is susceptible to the novelty effect. Koivisto and Hamari [15] found that perceptions of enjoyment and utility regarding gamified systems decline as the duration of use increases; the longer users interact with the system, the less enjoyment and utility they perceive. Toda et al. [12] refer to this phenomenon as the “declining effect,” which is the fading of motivation and engagement resulting from a monotonous gamification process. In practical terms, repeatedly using a single gamification format throughout a semester risks losing its motivational impact. Varying formats, gradually increasing difficulty levels, and implementing a gradual fading mechanism that slowly reduces reliance on game elements are important design considerations.

Adverse Effects of Leaderboards

Third, leaderboards are the design element most frequently associated with negative effects. Toda et al. [12] found that a decline in performance was the most commonly reported negative effect, while leaderboards were the design element most often cited as the cause. This mechanism can be explained through social comparison: students who consistently rank at the bottom receive repeated public feedback about their inadequacy, which can potentially lower their self-efficacy and trigger anxiety and jealousy, as reported by Bai et al. [8] Alternative designs to consider include the use of personal progress indicators, team-based leaderboards, partial display of rankings, or ranking based on the magnitude of improvement rather than absolute scores.

Infrastructure, Time, and Teacher Competence

Fourth, there are technical and institutional challenges. Most popular gamification platforms rely on the availability of devices and a stable internet connection, so the digital divide between schools and among students has the potential to turn into a learning opportunity gap. In the Indonesian educational landscape, this disparity is particularly pronounced between well-equipped urban schools and under-resourced rural areas, where unequal access to information and communication technology (ICT) infrastructure directly limits the equitable implementation of gamified learning. Furthermore, designing gamified activities aligned with learning outcomes demands significant preparation time as well as substantial technical and pedagogical competencies from educators. Dichev and Dicheva [16] highlight that guidance on selecting and configuring game elements for specific learning contexts remains limited to date, so gamification is often implemented intuitively without an explicit design foundation. This situation is consistent with the findings of Toda et al. that undesirable behavior often stems from inadequate planning.

Discussion

The synthesis of the reviewed literature highlights the transformative potential of gamification across diverse academic disciplines, including general studies, mathematics, science, and language arts. A fundamental insight emerging from the findings is the conceptual distinction emphasized by Ranieri et al. [2] wherein gamification is differentiated from serious games; rather than utilizing fully fledged games for educational objectives, gamification strategically integrates specific game design affordances to enhance retention and engagement. Broader reviews of educational gamification similarly map recurring implementation patterns [19], [20].

The structural core of most educational gamification implementations remains centered on mechanical elements, particularly the triad of Points, Badges, and Leaderboards (PBL). As supported by Sailer et al. [3], PBL elements function as immediate visual feedback loops points quantify effort and achievement, badges signify mastery, and leaderboards establish competitive dynamic drivers among students. However, while mechanical elements excel at fostering extrinsic motivation and competitive dynamics, the analysis underscores the critical role of dynamic elements (e.g., quests, narrative structures, levels, and immediate

feedback) in providing contextual meaning. These dynamic components elevate learning from mere reward-seeking behavior to meaningful problem-solving that reflects real-world scenarios.

Furthermore, the implementation channels such as Kahoot!, Quizizz, ClassDojo, and Duolingo demonstrate how gamification mechanics adapt to specific pedagogical targets. While Kahoot! and Quizizz leverage real-time feedback, vocabulary retention, and healthy competition [4], [5], platforms like ClassDojo address behavior management, and Duolingo provides a comprehensive ecosystem combining mechanical and dynamic elements for sustained language acquisition. Overall, the collective evidence confirms that when mechanical and dynamic elements are thoughtfully combined, gamified learning yields significant positive outcomes, including heightened student motivation, enhanced communicative competence, and improved final academic performance. For literacy-oriented applications, the learning target should remain anchored in domain-specific developmental processes such as writing development [21].

CONCLUSION

This review demonstrates that gamification serves as an effective pedagogical strategy across various educational subjects when designed with rigorous pedagogical intent. By incorporating mechanical elements (PBL) alongside dynamic elements (quests, narratives, and feedback), gamified environments can successfully bridge the gap between student engagement and academic performance. Digital platforms such as Kahoot!, Quizizz, ClassDojo, and Duolingo offer scalable channels to operationalize these game elements in both classroom and self-paced learning contexts. However, this study also highlights critical pedagogical risks that cannot be overlooked, including the over-justification effect that may undermine intrinsic motivation, the fading engagement due to the novelty effect, and social anxiety triggered by public leaderboards. Ultimately, gamification does not merely alter the delivery method of instruction; its success is highly contingent on the careful alignment between game elements, specific learning objectives, and student characteristics. To prevent undesirable behaviors, future implementation must move beyond intuitive, superficial setups toward structured, balanced, and context-aware gamification designs.

REFERENCES

- [1] Ali, M. (2010). *Metodologi dan aplikasi riset pendidikan*. Bandung: Cendikia Utama.
- [2] Ranieri, M., Bruni, I., & Cuifati, S. (2018). Gamification in education: A systematic review. *Journal of e-Learning and Knowledge Society*, 14(3), 101–114.
- [3] Sailer, M., Hense, J. U., Mayr, S. K., & Mandl, H. (2017). How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction. *Computers in Human Behavior*, 69, 371–380. <https://doi.org/10.1016/j.chb.2016.12.033>
- [4] Gokaslan, S., & Kose, T. (2021). The effect of Kahoot! on vocabulary learning and retention. *International Journal of Assessment Tools in Education*, 8(2), 350–365.
- [5] Sari, R. K., & Nurani, S. (2021). Quizizz atau Kahoot!: Gamifikasi dalam pembelajaran bahasa Inggris. *Jurnal Pendidikan dan Kebudayaan (JURDIKBUD)*, 1(3), 78–86.
- [6] Saleem, A. N., Noori, N. M., & Ozdamli, F. (2022). Gamification applications in E-learning: A literature review. *Technology, Knowledge and Learning*, 27(1), 139–159.
- [7] Sailer, M., & Homner, L. (2020). The gamification of learning: A meta-analysis. *Educational Psychology Review*, 32(1), 77–112. <https://doi.org/10.1007/s10648-019-09498-w>
- [8] Bai, S., Hew, K. F., & Huang, B. (2020). Does gamification improve student learning outcome? Evidence from a meta-analysis and synthesis of qualitative data in educational contexts. *Educational Research Review*, 30, 100322. <https://doi.org/10.1016/j.edurev.2020.100322>
- [9] Nurjannah, A. B. Kaswar, and E. W. Kasim, "Efektifitas gamifikasi dalam pembelajaran matematika," *Jurnal MathEdu (Mathematic Education Journal)*, vol. 4, no. 2, pp. 189–193, 2021.
- [10] Mahendra, C., Prabowo, R. E., Paath, D. K., Mili, W. N., & Annawati, B. D. (2023). Gamifikasi dalam pendidikan STEM: Transformasi pembelajaran dan pemberdayaan siswa menuju industri 5.0. *Inovasi Pendidikan Fisika*, 12(3), 92–100.
- [11] Mahmubi, M., & Homaidi. (2025). Analisis implementasi pembelajaran berbasis gamifikasi pada peningkatan motivasi belajar siswa. *Al-Abshor: Jurnal Pendidikan Agama Islam*, 1(1).
- [12] Toda, A. M., Valle, P. H. D., & Isotani, S. (2018). The dark side of gamification: An overview of negative effects of gamification in education. Dalam A. I. Cristea, I. I. Bittencourt, & F. Lima (Ed.), *Higher Education for All (CCIS Vol. 832, hlm. 143–156)*. Springer. https://doi.org/10.1007/978-3-319-97934-2_9
- [13] Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125(6), 627–668. <https://doi.org/10.1037/0033-2909.125.6.627>
- [14] Hanus, M. D., & Fox, J. (2015). Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance. *Computers & Education*, 80, 152–161. <https://doi.org/10.1016/j.compedu.2014.08.019>

- [15] Koivisto, J., & Hamari, J. (2014). Demographic differences in perceived benefits from gamification. *Computers in Human Behavior*, 35, 179–188. <https://doi.org/10.1016/j.chb.2014.03.007>
- [16] Dichev, C., & Dicheva, D. (2017). Gamifying education: What is known, what is believed and what remains uncertain: A critical review. *International Journal of Educational Technology in Higher Education*, 14(1), 9. <https://doi.org/10.1186/s41239-017-0042-5>
- [17] Azis, A. (2019). Penggunaan media Kahoot! dalam pembelajaran bahasa Indonesia. *Jurnal Bahasa dan Sastra*, 5(1), 12–20.
- [18] Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037/0003-066X.55.1.68>
- [19] Majuri, J., Koivisto, J., & Hamari, J. (2018). Gamification of education and learning: A review of empirical literature. In *Proceedings of the 2nd International GamiFIN Conference (GamiFIN 2018)* (pp. 11–19).
- [20] Ayunda, R. S., Imania, K. A. N., & Bariyah, S. H. (2026). Studi literatur: Penerapan gamifikasi dalam pembelajaran untuk meningkatkan motivasi dan hasil belajar siswa SMP. *Jurnal Ilmiah Profesi Pendidikan*, 11(1).
- [21] Temple, C., Nathan, R., Burris, N., & Temple, F. (1987). *The beginnings of writing* (2nd ed.). Allyn and Bacon.