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Gamification in School Education: A Systematic Review of Its Effectiveness in Improving Student Motivation and Academic Outcomes

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ABSTRACT

The integration of technology in education has led to the growing adoption of gamification as a tool to enhance student engagement, motivation, and academic achievement. Despite its benefits, concerns remain regarding its impact on deep learning and disparities in technological access among institutions. This study conducted a systematic literature review to assess the effects of gamification on student motivation and learning outcomes across educational levels. Guided by the PRISMA framework, 278 articles were initially retrieved from the Scopus and ERIC databases. After screening and quality assessment, 21 peer-reviewed studies published between 2021 and 2024 were included, with quality scores ranging from 60% to 100% (average 82%). Findings indicate that gamification positively influences student motivation and often enhances academic performance, especially in primary and secondary education. The most effective game elements identified were points, badges, leaderboards, progress tracking, real-time feedback, collaboration, real-world applications, and autonomy support. However, the effectiveness of gamification varies depending on subject matter, educational stage, and technological infrastructure. While gamification offers notable benefits, its impact is context-dependent. To maximize its potential, educators must adopt balanced approaches that consider student needs, curricular goals, and available resources. Gamification can significantly enhance student learning and motivation when implemented strategically and supported by robust pedagogical and technological frameworks.

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1. INTRODUCTION

In recent years, gamification in education has become a popular approach to improve student engagement and improve outcomes through more interactive experiences. Gamification in education focuses on the application of game elements, such as challenges, badges, and levels, which not only enhance hands-on learning but also promote skills referred to as "tacit learning", which are skills such

as collaboration, problem-solving, and perseverance that are essential in increasing motivation to learn (Acosta-gonzaga & Ruiz-ledesma, 2023). Several studies have shown that the use of game elements, such as challenges, badges, and leaderboards, has been successful in increasing students' intrinsic motivation in a variety of educational contexts. For example, a study of primary school students in Spain showed an increase in intrinsic motivation through the Class Dojo application in gamified physical education learning, although it did not reduce motivation in students Sotos-Martínez et al., (2023) An example of its implementation, gamification in geometry subjects in secondary schools also increases student motivation and positive perceptions of the subject, showing significant benefits in secondary education (Fuentes-riffo et al., 2023).

However, evidence on the effects of gamification on academic achievement is mixed. For example, in online physics classes, the use of badges and leaderboards increases motivation but does not show a significant improvement in student academic achievement (Balci et al., 2024). In contrast, a study of college students showed that the use of gamification platforms in physical classrooms improved academic outcomes compared to traditional methods, suggesting that the effects of gamification can vary depending on the context in which it is used (Ferriz-valero et al.,2021).

The results of the study show that the gamification elements applied affect the results achieved. A study of game-based challenges in statistics education found a significant improvement in learning outcomes, especially in engineering students, demonstrating the importance of selecting game elements that are appropriate to the learning context (Legaki et al., 2020). Other studies have highlighted that gamification can improve motivation and academic achievement at different levels of education, although the effects have been inconsistent across studies (Mula-Falcón et al., 2022).

Overall, gamification is very important in improving students' motivation to learn, but its effect on academic achievement needs to be further researched. In the context of flipped classrooms, gamification has been shown to encourage intrinsic motivation and a higher learning process, which has a positive impact on students' comprehension (Yang, 2023). In addition, the study Pambudi et al., (2022) highlights that gamification, when applied appropriately, can help students maintain focus and participate more actively in learning. However, the effectiveness of gamification is not always uniform; Several studies have revealed mixed results. For example, Paradise (2021) shows that the success of gamification is highly dependent on the design and implementation of game elements that are in line with educational goals. The study also found that incompatibilities between game elements and learning materials can hinder students' understanding. On the other hand, Karem et al. (2023) found that, in a blended learning environment, gamification can have positive outcomes on student motivation even though challenges such as access to technology remain major constraints.

The rapidly evolving context of online and hybrid education in the wake of the COVID-19 pandemic has also played a significant role in the rising popularity of gamification. According to research by Sam-epelle et al., (2022) and gamification helps maintain student engagement amid the uncertainty of distance learning. This is reinforced by the findings Nhan et al., (2022), which shows that the element of competition and reward in gamification can help students stay focused even while learning from home.

However, research by Kwon & Özpolat (2021) warns that excessive gamification can reduce students' intrinsic motivation, especially when students are only motivated by external rewards, such as points and levels, without understanding the essence of the learning material. This systematic review aims to further analyze the influence of gamification on students' motivation and academic achievement by synthesizing findings from the latest study in 2021-2024. By reviewing these studies, this study is expected to provide a more comprehensive insight into effective gamification practices and their limitations in the current educational context. This study occupies an important position in the literature on gamification in education, mainly because of its focused approach to a *Systematic review* to assess the effectiveness of gamification in improving student motivation and overall academic outcomes. Previously, research trends in gamification tended to focus on specific design aspects or subjects and were conducted experimentally on a small scale. Many studies focus on only one of two

variables, motivation or academic outcomes, which often results in a limited picture. Furthermore, even though there are already several *Reviews* On gamification, most of them are narratives and do not have a strict methodology.

The novelty of this study lies in the integration of two main outcomes, namely motivation and academic outcomes, thus offering a more holistic view of the effectiveness of gamification. By combining results from different levels of school education, this study has the potential to provide a deeper understanding of the impact of gamification on elementary to high school students. In addition, if this study also considers the long-term effects of gamification, it will make a more meaningful contribution compared to previous studies that generally focused on short-term effects. The study can also open up new insights by identifying specific elements of gamification that are most effective in improving motivation and academic outcomes. Thus, this study not only fills in the gaps in the literature but also provides a more comprehensive guide for educators and researchers regarding the potential of gamification in creating more engaging and productive learning experiences in schools.

The purpose of the *Systematic Literature Review (*SLR) is to gamify in education guided by the following four research questions:

1. RQ1: How is the distribution of countries, samples, and Gamification factors?
2. RQ2: What is the impact of gamification on student academic outcomes at different levels of school education?
3. RQ3: What gamification elements contribute the most to improving student motivation and academic outcomes in schools?

2. METHOD

In general, Systematic Literature Review (SLR) is an explicit and systematic method of compiling and synthesizing research findings that answer formulated questions by identifying, summarizing, and synthesizing the findings of previous research to provide reporting on the subject to be investigated based on the results of previous research (Page et al., 2021). The study determines criteria and collects data using Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) (Höfrová et al., 2024). The stages that will be carried out consist of: (a) identification; (b) screening; (c) quality assessment, and (d) Data analysis. The stages of search and selection can be seen in Figure 1.

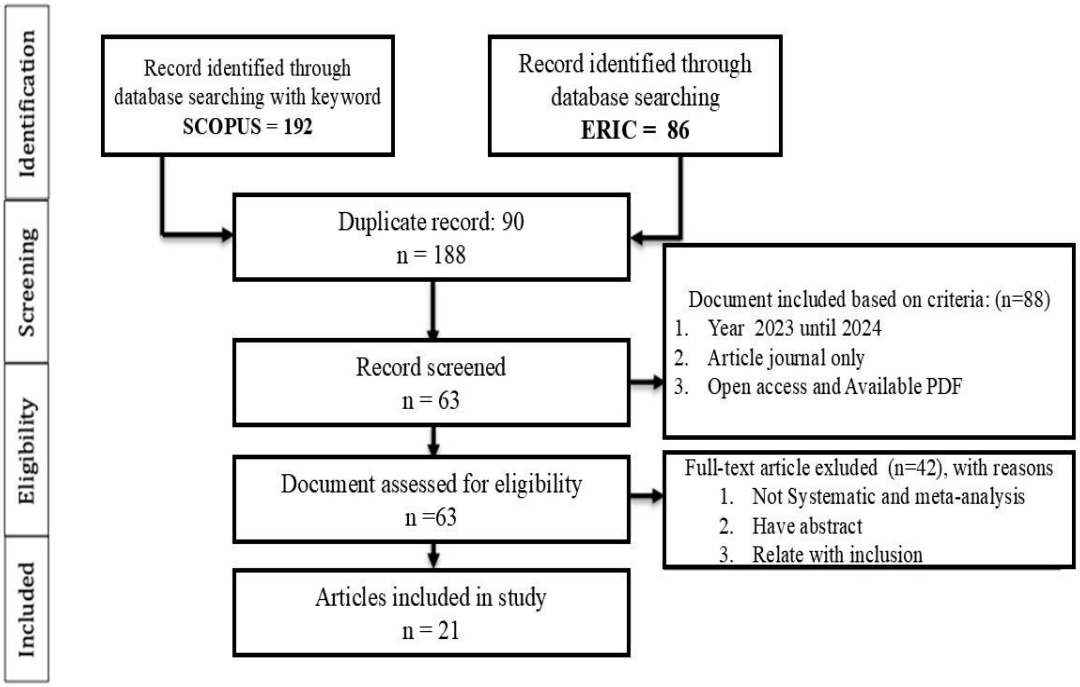

Figure 1. Systematic Literature Review (SLR) flowchart

Figure 1 presents a flowchart illustrating the Systematic Literature Review (SLR) process used in this study. The process follows four key stages: identification, screening, feasibility assessment, and inclusion, each outlining the progression from the initial search to the final selection of relevant articles.

2.1 Literature search

At the identification stage, searches were carried out in two databases, namely SCOPUS and ERIC, with results of 192 and 86 articles, respectively. After that, as many as 90 articles were identified as duplicates, leaving only 188 articles for the screening process.

2.2 Study selection criteria

Furthermore, at the screening stage, articles are filtered based on several inclusion criteria: (1) publications from 2023 to 2024, (2) articles derived from scientific journals, and (3) available in open access and accessible PDFs. From this process, as many as 63 articles passed the feasibility test stage. At the test feasibility stage, 63 articles were examined, but 42 of them were excluded because there were no criteria, because: (1) it was not a systematic or meta-analysis article, (2) it was only abstract, and (3) there was no inclusion of relevant criteria that had been defined. Finally, a total of 21 articles were selected and included in the study. This SLR process ensures that only relevant articles that meet the high standard methodology are included in the research, so that the results obtained on their own are valid and of good quality for the study, answering questions.

2.3 Quality assessment

The authors used the evaluation criteria of quality standards for the study developed by the assessment criteria consisting of fourteen quality indicators with detailed guidelines. Based on the research method and the purpose of the article, three quality indicators and three assessment categories were used: a) Is the question/objective adequately described? b) Is the research design clear and appropriate? c) Are the characteristics of the subjects and comparison groups, if applicable, adequately described? The results showed that the overall quality score for the study ranged from 60 to 100%, with an average score of 82% (Kmet et al., 2004).

3. FINDINGS AND DISCUSSION

In recent years, the application of gamification in education has become an interesting topic for many researchers, especially regarding its impact on student motivation and academic outcomes at various levels of education. Gamification refers to the Distribution of countries, samples, and factors of Educational Gamification and the application of game elements, such as points, levels, and rewards, in a non-game context, to increase student engagement and motivation.

3.1. Research Question 1

What is the distribution of countries, sample characteristics, and gamification factors? Based on the findings from the Systematic Literature Review, several studies conducted in the four years following the COVID-19 pandemic have focused on examining key gamification factors. The distribution of research across countries, as well as the characteristics of study samples, is summarized in Figures 2 and 3 below.

Figure 2. Country Distribution

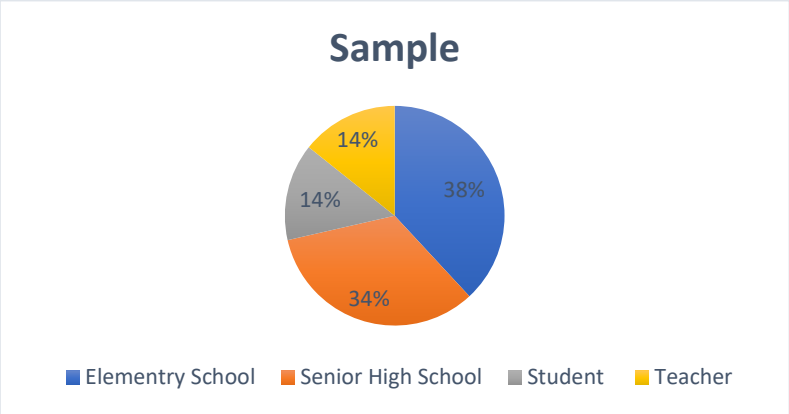

Figure 3. Characteristics of Research Sample

Figures 2 and 3. Country Distribution and Characteristics of Research Sample Overall, Thailand and Spain are the countries where research on gamification is most often conducted at the elementary school to university level. The main focus of the research is on elementary and junior high school students, while research involving teachers as a sample is still limited. Commonly used gamification elements include points, challenges, leaderboards, and achievement-based rewards, which have been shown to increase student engagement and motivation. We will detail it again in the form of columns to facilitate the understanding of gamification factors at various levels of education, and in various countries, will be explained through the following table 1

Table 1. Descriptive Analysis

No	Country Distribution	Sample Characteristics	Educational Gamification Factors
1	**Ecuador**	Students of the Information Technology program, Mathematics subject at the university level	Project-based learning uses real economic data, information and communication technology (ICT) integration to build mathematical equations; Increase understanding and motivation to learn mathematics
2	**Spain**	Students in university-level Online Education programs	Weekly challenges, story narratives, virtual characters, hidden missions to increase student motivation and engagement in online classes
3	**Thailand**	2nd grade elementary school students in English as a Second Language (ESL) lessons	Use of Bamboozle digital gamification platform to improve English word memory, motivation through an attractive and competitive interface

4	**Cyprus**	High school students German as a foreign language	Use a mobile gamification course called *MISSION BERLIN* on the Moodle platform; elements such as coins, challenge collaborations, and collectible artifacts to increase engagement and competition
5	**Thailand**	Grade 2 elementary school students (language) English as Language second)	*Bamboozle digital platform t*o improve English vocabulary memory, with an attractive and competitive game interface
6	**Malaysia**	Pre-service teacher base (school internship program) for teaching languages)	Use cooperative games and simple gamification elements to improve social skills, critical thinking, and creativity in language learning
7	**Spain**	Grade 12 high school students in English as a Second Language lessons	The role of games in learning English with virtual business scenarios. Using elements of CEO, marketing, and teacher roles to improve communication skills and motivation Language Learning
8	**Portugal**	Secondary school teachers in gamification training programs	*Educaplay*, *Edmodo*, and *Bluerabbit platforms with* Octalysis Framework *implementation*, including points, board ratings, and graphical feedback, to increase Learning motivation through competitions and collaborations
9	**Thailand**	Grade 9 students in eight high schools	Winner's English program, including leaderboards, reward systems, increased engagement, and motivation to learn
10	**Indonesia**	High school students in East Java, studying chemistry about hydrocarbons	Use of *the educational game Hydrocarbons Chem-Rush*, featuring characters, level challenges, points, and game-based feedback to increase learning motivation and retention
11	**Turkey**	4th-grade elementary school students, English lessons	Gamification apps for language teaching, including avatars, task maps, and rewards, which significantly improve student attitudes and reduce task procrastination behaviors
12	**Malaysia**	3rd grade elementary school students, online tutorial (motivation and learning control)	Self-motivation-based learning control, gamification through online tutorials with elements of self-control, selection of customized learning materials
13	**Taiwan**	EFL student school (language) vocational English)	Learn English with interactive gamification through authentic online communication to improve vocabulary and conversation skills
14	**Indonesia**	Muhammadiyah Elementary School Students, Mathematics Lesson	Use of digital gamification based on metacognitive skills to solve math problems, including level challenges, point systems, and problem-based interactions
15	**Indonesia**	Grade 4 students, learning English	E-learning-based tasks: to increase engagement, reading, and reduce cognitive dissonance through task-based activities

16	**United States**	Primary school students in specialist classes (library)	Gamification with elements such as points, awards, and competitions, to improve class management and student participation
17	**Turkey**	Elementary school students taking robotics classes	The implementation of gamification-based robotics using the Arduino platform aims to improve 21st century skills such as critical thinking, problem-solving, and creativity through competition.
18	**Colombia**	4th and 5th grade students at an elementary school in a conflict-hit area	The Social Emotional Learning (SEE Learning) program involves the components of mindfulness and social ethics development that aim to improve intrinsic motivation, academic mindset, and classroom environment support.
19	**Spain**	Technology students	The APAR framework includes key gamification elements: Actions, Points, Achievements, and Rewards, with a focus on intrinsic and extrinsic motivations that support engagement in digital learning platforms.
20	**Spain**	Teachers at various levels, especially in basic education	Use social media platforms (Twitter, Instagram, TikTok) to share and create gamified content such as interactive games, badges, and leaderboards. Encouraging collaborative and motivated student learning
21	**Philippines**	Grade 9 student, private school in Cagayan de Oro	Gamification-Incentives-Feedback (GIF) models, the use of gamification activities such as Jeopardy, *Boards Up*, and emoji-based prompts for retention and motivation to learn

3.2. Research Question 2

Are there differences in the effectiveness of gamification on students' motivation and academic outcomes based on their level of education or the characteristics of the subjects studied?

Table 2. Analysis of Gamification Effectiveness Based on Education Level

Group	The Effectiveness of Gamification on Academic Motivation and Outcomes
Primary School	Gamification is particularly effective in increasing student motivation and engagement at a basic level, especially in the subject language, social-emotional skills, and 21st-century skills. The impact on academic outcomes is seen more in basic understanding and the problem of simple skill details, although not always recorded in quantitative data. Example: language and digital literacy-based gamification in libraries and online classes shows increased social engagement and motivation.
Secondary School	At the intermediate level, gamification shows an increase in motivation, especially in learning foreign languages and special skills such as damage problems. Its effectiveness on academic outcomes is seen more significantly in retention of knowledge and project-based skills, such as in the areas of English and natural science knowledge. Example: gamification in role-playing for English shows higher motivation, while programs based on awards and rankings increase achievement in science and technology classes.
Higher Education	In higher education, gamification is effective in increasing motivation in independent learning, especially in an online environment, and in technology-based subjects and

	pedagogy. The influence on academic outcomes was also observed in technical performance and academic satisfaction, especially through social media supported learning or application projects. Example: in online classes, gamification plays a role in increasing the engagement of active, academically minded students who take part in project-based and information-based eye studies.

3.3. Research Question 3

Based on the systematic review findings, several key gamification elements have been identified as particularly influential in enhancing students' academic motivation and learning outcomes in school settings. Reward-based elements—such as points, badges, leaderboards, and ranking systems—are among the most effective in fostering both extrinsic and intrinsic motivation. These features create a sense of achievement and healthy competition among students, encouraging them to engage actively with learning activities. Studies (Esparrago-Kalidas et al., 2024; Jackson, 2024; Twenge et al., 2010) demonstrate that recognition, whether in physical classrooms or digital platforms, can significantly boost learners' enthusiasm and willingness to participate. This motivational boost is often linked to the visible and immediate gratification these elements provide, which can lead to higher levels of sustained engagement. Progress tracking and feedback mechanisms also play a critical role in gamified learning environments. These elements give students a tangible understanding of their learning journey by showing progress over time and pinpointing areas that need improvement. Tools such as level-based challenges, scoreboards, and continuous feedback systems (as observed in research by Ángeles Hernández-Prados et al., 2021; Laksana et al., 2024; me me et al., 2020), Empower students to take ownership of their learning. By seeing their advancement clearly, students gain confidence and feel more competent, which in turn increases intrinsic motivation and encourages deeper cognitive involvement.

Another important dimension is social and collaborative interaction. Elements that promote peer interaction, such as discussion forums, team challenges, and cooperative tasks, enhance learning by fostering a sense of community and belonging. Research (Bae, n.d.; Mgbeodichinma, 2023; Moreno et al., 2024), shows that these collaborative elements not only promote mutual support and shared knowledge but also enhance motivation through social accountability and encouragement. Learning becomes a more enjoyable and collective experience, reducing isolation and boosting participation and understanding. Real-world and contextual gamification elements are also highly impactful. These involve connecting learning content with real-life scenarios and applications, such as project-based tasks or simulations. When students understand how the knowledge they gain can be used in everyday contexts, their motivation and engagement tend to increase significantly. As highlighted by studies like those of Inca et al., (2024) and Sudatha et al., 2024), This relevance drives a deeper interest in the subject matter and supports the development of problem-solving and critical thinking skills, making the learning experience more meaningful and applicable.

Finally, self-regulatory support and autonomy-oriented elements help students build discipline and long-term motivation. Features like self-paced modules, customizable tasks, and reflective assessments enable learners to take control of their educational process. Studies (Araújo & Carvalho, 2022; Leow & Abdul Razak, 2024; Panyajamorn et al., 2022; Tatlı et al., 2023; Wang et al., 2024; Wu & Texas, n.d.) emphasize that these components are essential for developing independent learning habits. By encouraging learners to plan, monitor, and evaluate their progress, gamification fosters a sense of responsibility and academic ownership that can support lifelong learning skills. In summary, the effectiveness of gamification in education is greatly enhanced when it integrates a balanced mix of reward systems, feedback mechanisms, social collaboration, contextual relevance, and learner autonomy. Each of these elements contributes uniquely to strengthening both motivation and academic achievement, particularly when tailored to the developmental and contextual needs of students.

Discussion

Overall, the results of the study show that the application of gamification has a significant impact on academic student outcomes, especially in primary and secondary schools. Gamification programs, such as the "Hydrocarbons Chem-Rush" for chemistry learning and the "Gamification-Incentive-Feedback (GIF)" model in the language of learning, show improved material comprehension and knowledge retention of students. Other research also shows that students who engage in gamification-based learning tend to have higher motivation to learn, especially when elements such as leaderboards, points, and rewards are applied to create a healthy competitive atmosphere in the classroom (Rosidah, 2024; Sotos-Martínez et al., 2023).

However, the effectiveness of gamification tends to vary depending on the level of education and the characteristics of the subject being studied. For example, the application of gamification in foreign language learning in secondary schools has a different impact compared to the application at the primary school level, especially in terms of social and emotional skills development. This difference in effectiveness shows that gamification elements need to be adjusted to the needs and levels of development of students at each level of education. The gamification elements that contribute the most to improving student motivation and academic outcomes in schools include reward systems, leaderboards, and points. These elements help to increase students' extrinsic motivation by providing immediate feedback and rewards for each achievement. In addition, several studies have also highlighted the importance of collaborative elements and real projects in gamification, allowing students to interact and work together in achieving the common goal of educational gamification.

At the school student level, gamification elements that follow the characteristics and level of student development can use reward elements, such as points, badges, leaderboards, and system rankings, which have proven to be the main drivers in increasing student motivation, both in extrinsic and intrinsic ways (Esparrago-Kalidas et al., 2024). In addition to reward elements, Context-based elements, such as real projects and problem-based scenarios, connect learning with world applications, such as the help of Augmented Reality, and interactive media, according to student development (Inca et al., 2024; Sudatha et al., 2024)

At the junior high and high school level, the gamification elements of Progress Tracking and Feedback, here the teacher plays an important role in presenting student evaluations in the form of Kahoot or Wordwall games that require feedback (Lutfi et al., 2023). This element is tracking student progress, whether it has reached the target of passing or not, and what material must be studied further (Laksana et al., 2024). At the higher and upper secondary education levels, gamification elements of social interaction, collaboration, support for self-regulation and autonomy, Duggal et al., (2021) highlight the importance of adaptive design so that the gamification system can adapt to the individual needs of students with students collaboratively, so that they remain motivated and focused on understanding the material, not just the elements of the game. The study also found that gamification platforms like Quizizz are effective in creating high engagement in both synchronous and asynchronous environments, although their designs require careful planning and adjustment in the presence of self-evaluation (Tolstikova et al., 2023).

Gamification in education has the potential to increase student motivation but tends to be directed more towards extrinsic motivations, such as rewards and points, than intrinsic motivation. Reliance on these external elements can reduce pure interest in learning, and risk lowering student motivation when gamification elements are eliminated (Fuentes-riffo et al., 2023). However, some studies have found that even though motivation increases, the increase in material comprehension is not always in line because students focus more on the elements of the game, rather than on in-depth conceptual comprehension (Hanus & Fox, 2015). Challenges in implementing gamification in education include the readiness of technology and resources, which vary from institution to institution. A study shows that students' technological readiness level in using Enterprise Resource Planning (ERP) software for gamification learning still varies, with most being at a moderate level of readiness. Below is a table summarizing study findings by education level or gamification elements to improve readability

Table 3. Study Findings by Education Level and Gamification

Education Level	Motivational Impact	Academic Outcome Impact	Effective Gamification Elements
Primary School	High increase in engagement, especially in language and emotional skills	Basic understanding, improved retention in literacy, and social skills	Points, rewards, competitions, simple progress tracking (e.g., badges, Kahoot)
Secondary School	Notable boost in motivation for language and STEM subjects	Better retention and performance in project-based and contextual tasks	Role-play, leaderboards, ranking systems, feedback loops
Higher Education	Effective in promoting self-directed and online learning motivation	Improved performance in tech-based and project-driven subjects	Autonomy, real-world projects, social media-based gamification, self-evaluation tools

While gamification has the potential to enhance student engagement, its effectiveness largely depends on the technical readiness and digital adaptability of both students and teachers (Septiawan et al., 2023). As a collaborative learning tool in technology education, gamification still faces challenges related to implementation and technical limitations. Studies have shown that tools like World Wall and Educaplay, used in both synchronous and asynchronous learning environments, can boost student motivation and participation. However, they require careful customization to meet diverse learning needs (Carlota & García, 2024). Additionally, gamification models that incorporate technology-based or machine-learning approaches have shown promise in further increasing engagement. Still, their success hinges on having adaptive systems that can respond to varying levels of student skills and motivation in order to achieve optimal outcomes in today's digital learning environment (Araújo & Carvalho, 2022).

Gamification in education shows strong potential for enhancing student motivation and improving learning outcomes, especially in today's digital era. Common game elements—such as points, leaderboards, and level-based challenges—have been found to increase student participation and provide instant feedback, which supports more active learning. In the context of Massive Open Online Courses (MOOCs), features like progress tracking, feedback mechanisms, collaboration tools, social interaction, and autonomous learning support have been shown to boost student engagement in both online and in-school learning environments. Research by Panyajamorn et al. (2022) indicates that these elements not only improve short-term motivation but also help students develop better self-management and independence in their learning, whether in offline or online settings.

Similarly, Sam-Epelle et al. (2022) highlight how gamification can enhance collaboration among students. Reward systems, weekly challenges, and goal-based activities encourage students to interact, support each other, and work collectively toward shared objectives. This collaborative environment not only increases engagement but also helps students build essential teamwork skills that are increasingly valuable in digital learning contexts.

However, the effective implementation of gamification is not without its challenges. The technology supporting gamification must be flexible and adaptable to accommodate different levels of student skills and motivation. Another critical challenge lies in teacher readiness, particularly in terms of their competence in designing and managing gamified learning experiences. Additionally, the availability of adequate infrastructure and ongoing support systems is necessary to sustain the long-term use of gamification. Educators and institutional stakeholders must work together to ensure that gamification continues to positively impact student motivation and achievement across all educational levels—from elementary to higher education.

This study has some limitations, especially in the method that focuses more on the short term without evaluating the impact of gamification on an ongoing basis. In addition, the research sample is mostly limited to students, while the role of teachers and their readiness in gamification

implementation is rarely discussed in the literature. From the quantitative data on the distribution of gamification elements, there is a lack of variation in the social and cultural contexts of the countries reviewed. Data on elements is also often poorly tailored to the specific needs of students who can only be presented in the last 4 years, so their effectiveness in understanding academic material is not always consistent. In addition, this study tends to emphasize extrinsic rather than intrinsic motivation, which risks lowering pure learning interest when gamification elements are removed and deepening the variation of social contexts across countries.

4. CONCLUSION

The conclusion of this study shows that gamification has great potential to improve student motivation and academic outcomes in various countries, ranging from Asia to European countries. Overall, Thailand and Spain are the countries that research gamification most often at the elementary school to university level. The main focus of the research is on elementary school and junior high school students, while research involving teachers as a sample is still limited. Factors that affect gamification in various educational settings include cooperative games and simple gamification elements to improve social skills, critical thinking, and creativity in language learning. By applying the right elements and adapting them to the characteristics of students, gamification can be an effective tool in enhancing a more interactive and enjoyable learning experience.

Research shows that gamification in education significantly improves student motivation and, in some cases, learning outcomes. Elements such as points, leaderboards, contextual, real-world and rewards encourage active engagement and increase retention of material at the elementary level. Meanwhile, the elements of collaboration, progress, and feedback are in accordance with the abilities of secondary students who are already at the formal operational stage. Finally, at the level of higher education, it is necessary to support self-regulation and autonomy in order to continue to assess the extent of their work, students are more responsible for their learning process.

Based on the above research, the author suggests that a structured gamification program is effective in improving learning outcomes at various levels of education when gamification elements are adjusted to the needs of students. However, gamification is more effective on extrinsic motivation than intrinsic motivation, which sometimes makes students focus more on the game aspect, so it is implemented with a balanced strategy and according to the educational context of the student.

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