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GAMIFICATION AS A STRATEGY FOR INCREASING STUDENT MOTIVATION AND ENGAGEMENT IN MODERN TEACHING

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Abstract. The digital transformation of education has significantly changed contemporary teaching practice, emphasizing the need for: active learning, greater engagement of students and the application of innovative pedagogical approaches. In this context, gamification is increasingly recognized as an important strategy for increasing the motivation and active participation of students in the learning process. The aim of this paper is to analyse the pedagogical potential of gamification in modern teaching, with a special focus on its impact on student motivation and engagement. The paper discusses the concept and basic characteristics of gamification, as well as the differences between gamification, educational games and game-based learning. Special attention is paid to the analysis of gamification elements, such as: points, badges, levels, challenges, prizes and quizzes; as well as their application in a digital educational environment. Also, the influence of gamification on the internal and external motivation of students, active learning, feedback and participation in the teaching process is discussed. In addition to the benefits of gamification, its limitations are also analysed, including overreliance on rewards, the potential for distraction, and the risk of superficial learning. The analysis indicates that gamification can contribute to the creation of a more interactive, motivating and student-oriented educational environment, if it is applied in a pedagogically thoughtful and balanced way.

Key words: gamification, student motivation, student engagement, active learning, modern teaching

1. Introduction

The digital transformation of education has significantly influenced changes in modern teaching practice, with increasing importance being attached to active learning, student engagement and the application of innovative teaching approaches. In the modern educational environment, the student is no longer a passive recipient of information, but an active participant in the learning process, which implies greater interaction, cooperation and individualization of the teaching process. At the same time, the development of digital technologies has opened opportunities for the application of various strategies that can contribute to increasing student motivation and participation in classes.

One of the approaches that has attracted significant attention in the field of education in recent years is gamification. Gamification implies the application of elements characteristic of games in contexts that are not primarily related to the game, with the aim of increasing motivation, engagement and active participation of users. In education, gamification is most

often realized using points, levels, badges, challenges, rewards and other elements that make the learning process more interactive and stimulating.

Contemporary research indicates that gamification can have a positive effect on students' motivation, attention, engagement and persistence in learning. The special importance of gamification is reflected in the possibility of creating a dynamic and student-oriented environment that encourages active participation and feedback during the teaching process. However, in addition to numerous advantages, the application of gamification in education also opens certain questions and challenges.

Research indicates that motivation is one of the key factors in the success of the teaching process, since it directly affects the level of student engagement, attention, perseverance and readiness for active participation in learning. Modern education is facing numerous changes caused by the development of digital technologies, which is why more importance is attached to the application of innovative and interactive teaching strategies. In this context, gamification stands out as an approach that can contribute to the creation of a stimulating and dynamic learning environment, connecting educational content with game elements that enable students to have a more active, interesting and meaningful learning experience.

Based on the above, the goal of the work is focused on the analysis of the pedagogical potential of gamification and its impact on the motivation and engagement of students in modern teaching, with a special focus on its impact on student motivation and engagement. The paper will discuss the concept and basic characteristics of gamification, elements of gamification in teaching, as well as the advantages and limitations of its application in the modern educational environment.

2. Methodology of Literature Review

This paper is based on a narrative literature review that aims to examine the pedagogical potential of gamification and its impact on student motivation and engagement in modern teaching.

Studies that met predefined criteria were included in the literature review. Original empirical studies, review articles and systematic reviews, as well as relevant theoretical publications dealing with the application of gamification in education were taken into account. Preference was given to peer-reviewed papers published in international scientific journals indexed in the Scopus and Web of Science databases, while significant books, conference papers and international reports were included when they represented important theoretical or methodological sources. The analysis did not include works that referred exclusively to video games or entertainment applications without an educational context, as well as publications that were not directly related to motivation, engagement or application of gamification in teaching.

The search process primarily included studies published between 2011 and 2025, using the following keywords: gamification, student motivation, student engagement, active learning, educational technology, digital education, and game-based learning. Previous significant theoretical works were also included to provide a conceptual basis for the study.

A total of 52 publications were initially identified through searches of Google Scholar, Scopus and Web of Science databases. After the initial search, each paper was screened against the title, abstract and full-text content. Only publications that directly dealt with gamification in education and provided theoretical or empirical findings relevant to the aim of this review were included in the final analysis. The final sample comprised predominantly peer-reviewed journal articles indexed in Scopus and Web of Science, supplemented by scholarly books, conference proceedings, international reports and other relevant sources retrieved via Google Scholar. The final selection of literature was not based solely on the

number of publications found, but primarily on their scientific relevance, quality of methodology and contribution to the understanding of the pedagogical effects of gamification in modern education.

The selected literature was analysed using a qualitative content analysis approach. The studies were examined in terms of the concept and characteristics of gamification, key elements of gamification, its effects on student motivation and engagement, advantages and limitations of implementation, and examples of its application in educational settings. The results were synthesized and organized into thematic categories to provide a comprehensive overview of current theoretical and empirical knowledge on gamification in education.

The results are synthesized and organized into thematic categories corresponding to the main sections of the paper, enabling a systematic presentation of current theoretical and empirical perspectives on gamification in education. To achieve this goal, a narrative literature review was conducted, focusing on contemporary theoretical and empirical studies on gamification in education.

3. Contemporary teaching and the active role of students

Modern education is characterized by intensive changes caused by the development of information and communication technologies, the digitalization of society and changes in the way of accessing knowledge and learning. Traditional teaching models, based mainly on the transmission of content and the dominant role of the teacher, are increasingly being replaced by modern approaches that place students at the centre of the teaching process. In such an environment, the emphasis shifts from the reproduction of facts to the development of competencies, critical thinking, cooperation, creativity and active participation of students in the learning process (UNESCO, 2023; Wang et al., 2024).

Modern teaching involves the application of flexible and interactive work methods that enable greater involvement of students and encourage their independence and responsibility for their own learning. The student is no longer a passive recipient of information, but an active participant who constructs knowledge and develops various cognitive and social skills through research, problem solving, cooperation and exchange of experiences. This approach is based on constructivist theories of learning that emphasize the importance of active experience, interaction and individual engagement in the process of acquiring knowledge (Jonassen & Rohrer-Murphy, 1999).

In the modern educational environment, digital technologies that enable various forms of interactive and personalized learning are of particular importance. The use of digital tools and platforms contributes to greater availability of educational content, flexibility of the teaching process and adaptation of learning to the individual needs of students. At the same time, the digital environment enables greater communication, collaboration and feedback, which encourages more active student participation in classes (UNESCO, 2023; Urošević et al., 2015; Barreto, Rottmann & Rabidoux, 2020; Pavlenko, 2022).

One of the key challenges of modern teaching is related to maintaining the motivation and attention of students in the conditions of a digital environment and great exposure to different contents. That is why teaching strategies are increasingly being developed that aim to increase student engagement through interactive, dynamic and student-friendly forms of work. In this context, approaches that connect learning with game elements, challenges, feedback and a sense of achievement gain special importance, among which gamification stands out as one of the significant modern pedagogical approaches (Deterding et al., 2011; Kapp, 2012; Hamari, Koivisto & Sarsa, 2014).

4. Concept and characteristics of gamification

Gamification is one of the modern approaches that is increasingly applied in education with the aim of increasing motivation, engagement and active participation of students in the learning process. The development of digital technologies and changes in educational paradigms have contributed to the more intensive application of game elements in various fields, including education, where gamification occupies a significant place as a strategy that can improve the quality of the teaching process and the student's experience during learning (Kassenkhan et al., 2025; Sulisworo et al., 2024).

The term gamification is most often defined as the application of elements and mechanisms characteristic of games in contexts that are not primarily related to the game. The goal of gamification is not the creation of the game itself, but the use of certain elements of the game in order to encourage user motivation, increase engagement and make certain activities more interesting and dynamic. In education, gamification is applied through various activities that include points, badges, levels, challenges, rankings, rewards, and progression systems, which strives to make the learning process more interactive and stimulating for students (Deterding et al., 2011; Kapp, 2012).

Literature particularly emphasizes the need to distinguish gamification from educational games and game-based learning. Educational games are specially designed games whose main goal is to learn and acquire certain knowledge or skills through the game. On the other hand, game-based learning involves using complete games as a means to achieve educational goals. Gamification differs from these approaches because it does not necessarily imply the use of a complete game, but rather the integration of individual game elements into the existing teaching process in order to increase student motivation and engagement (Landers, 2014).

The special importance of gamification in education is reflected in its potential to contribute to the creation of a dynamic and student-cantered learning environment. By integrating game elements, students are enabled to participate more actively in teaching activities, continuous feedback, monitoring their own progress and a sense of achievement during the learning process. In this way, gamification can contribute to greater student motivation, the development of cooperation, perseverance and a more positive attitude towards learning and teaching content (Kassenkhan et al., 2025; Sulisworo et al., 2024; Hamari, Koivisto & Sarsa, 2014).

5. Elements of gamification in teaching

The application of gamification in education is based on the use of various game elements aimed at increasing motivation, engagement and active participation of students in the learning process. These elements enable the creation of a more interactive and dynamic teaching environment, in which students develop greater interest in teaching content through challenges, feedback and a sense of progress. The effectiveness of gamification largely depends on the way in which certain elements are integrated into the teaching process and aligned with educational goals (Kapp, 2012).

One of the most frequently used elements of gamification are points which allow students to monitor their own progress and provide immediate feedback on the success of the activities performed. Points often form the basis of reward systems and can contribute to increasing student motivation, especially when linked to clearly defined goals and tasks. In addition to points, badges also play an important role, representing symbolic recognition for achieved results, progress or developed skills. Badges can contribute to a sense of achievement and encourage students to stay engaged in learning activities (Subhash & Cudney, 2018; Almeida et al., 2023).

An important element of gamification is the levels and progression systems, which enable students to gradually master the content and gain a sense of development and

success during the learning process. Progressing through the levels can contribute to greater student persistence and encourage them to participate more actively in teaching activities. Also, challenges and missions represent a significant part of gamified learning, because they encourage problem solving, research and active application of knowledge in different situations (Sulisworo et al., 2024; Zichermann & Cunningham, 2011).

In a gamified teaching environment, ranking lists are often used, which enable comparison of results among students and can contribute to the development of a competitive spirit and additional motivation. However, research indicates that excessive reliance on competitive elements can cause negative effects in individual students, such as a sense of failure or reduced internal motivation. Therefore, it is important that the teacher carefully plans the application of these elements and adapts them to the needs and characteristics of the students (Hanus & Fox, 2015).

Modern digital platforms enable simple application of gamification elements in teaching. Tools like Kahoot!, Quizizz, Duolingo and ClassDojo use various gamified mechanisms such as points, quizzes, rewards, levels and progression systems to increase student engagement and create a more interactive learning environment. Application of these tools can contribute to greater student motivation and more active participation in the teaching process, especially in digital and blended learning environments (Kassenkhan et al., 2025; Wang & Tahir, 2020).

5.1. Overview of key empirical and review studies on gamification in education

Table 1. *Overview of key empirical and review studies on gamification in education*

AUTHORS	SAMPLE/CONTEXT	MAIN FINDINGS
HAMARI, KOIVISTO AND SARSA (2014)	Review of empirical studies	Gamification generally has positive effects on motivation and engagement, but outcomes depend on context and implementation.
HANUS AND FOX (2015)	University students	Over-reliance on badges, points, and rankings can reduce intrinsic motivation over time.
SUBHASH AND CUDNEY (2018)	Systematic literature review	Gamified learning improves participation, engagement, and the overall learning experience in higher education.
WANG AND TAHIR (2020)	Literature review on Kahoot!	Using Kahoot! has a positive impact on student motivation, participation, and interaction in the classroom.
ALMEIDA ET AL. (2023)	Systematic mapping study	Poorly designed gamification can lead to distraction, excessive competition, and superficial learning.
KASSENKHAN ET AL. (2025)	Review study	Gamification integrated with digital technologies and artificial intelligence can support critical thinking and student engagement.

Table 1 shows that most studies report positive effects of gamification on student motivation and engagement. However, the findings also suggest that the effectiveness of gamification depends on pedagogical design and implementation. While most authors

emphasize increased participation, engagement, and motivation, some studies warn of the potential negative consequences of over-reliance on external rewards and competitive elements.

The reviewed studies show that gamification should not be viewed simply as the application of game mechanics, but as a pedagogical strategy that requires careful planning and alignment with educational goals. A balance between intrinsic and extrinsic motivation, as well as the appropriate integration of digital technologies, appears to be crucial for achieving sustainable educational benefits.

5.2. Conceptual model of the effects of gamification in education

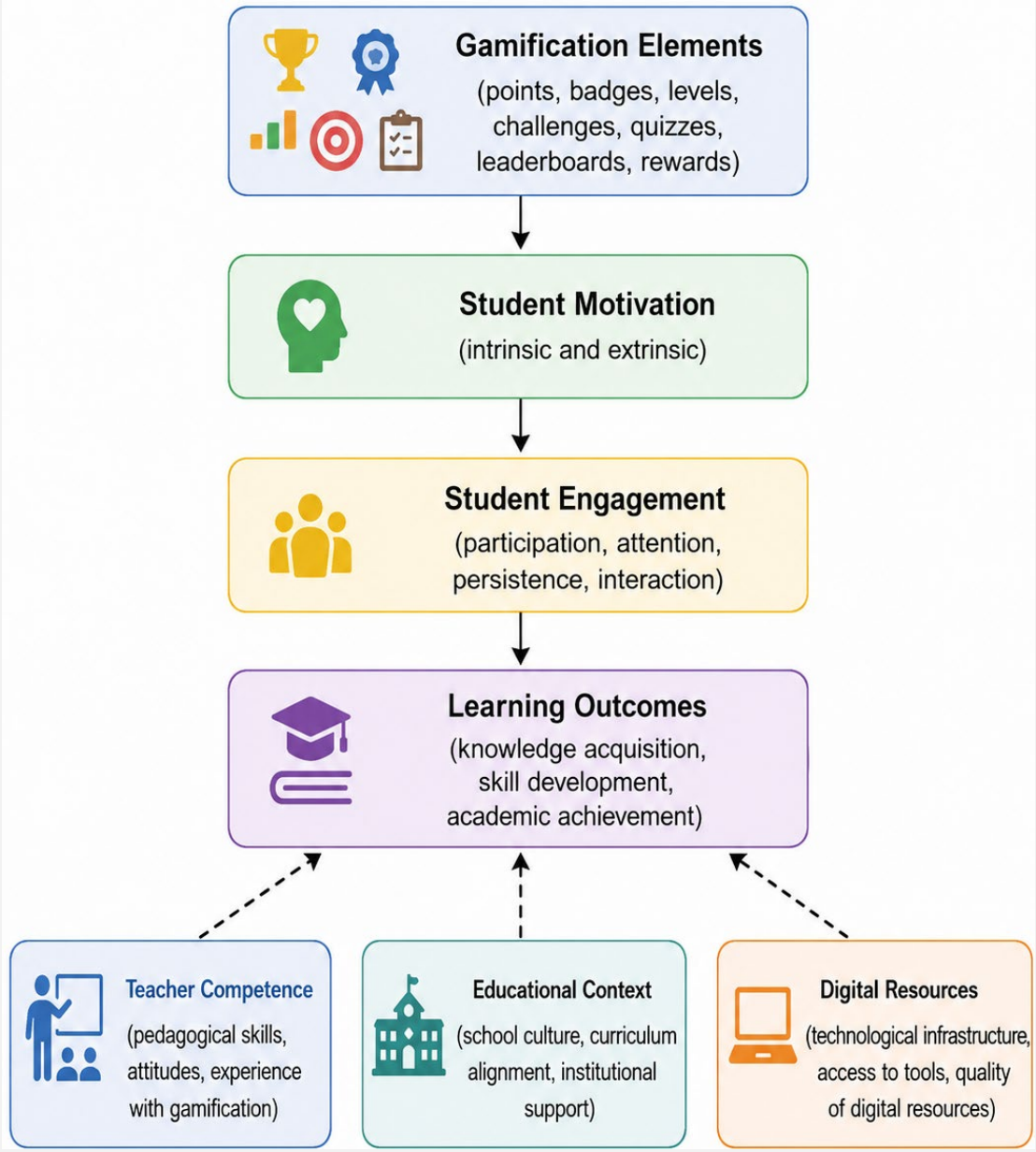


Figure 1. *Proposed theoretical framework of gamification effects in education.* Source: Authors' own elaboration based on the reviewed literature.

The framework presented in Figure 1 synthesizes the relationships identified across the reviewed studies. It provides a conceptual interpretation of how gamification elements may influence students' motivation, engagement, and learning outcomes. Derived from a

synthesis of the reviewed literature, it should be viewed as a theoretical framework intended to organize existing knowledge rather than as an empirically validated model.

Higher levels of engagement may subsequently contribute to improved learning outcomes, including knowledge acquisition, skill development, and academic achievement. However, the model also assumes that these relationships are not automatic. Their strength depends on several moderating factors, including teachers' competencies in implementing gamified activities, educational context and institutional support, and the availability and quality of digital resources.

The proposed theoretical framework emerges from a synthesis of the contemporary theoretical and empirical studies examined in this paper. Its purpose is to systematize existing knowledge regarding the educational effects of gamification and to provide a conceptual foundation for future empirical research, rather than to present empirically validated cause-and-effect relationships.

6. Gamification as a factor of student motivation and engagement

Student motivation is one of the key factors in the success of the teaching process, because it directly affects the level of engagement, attention, perseverance and readiness of students for active participation in learning. Teaching strategies that stimulate student interest and enable the creation of a dynamic and interactive learning environment are of particular importance in modern education. In modern education, gamification is increasingly used as a strategy to encourage more active and motivated participation of students in the teaching process (Hamari, Koivisto & Sarsa, 2014; Subhash & Cudney, 2018).

In literature, intrinsic and extrinsic motivation are particularly distinguished. Intrinsic motivation implies learning that results from personal interest, pleasure and the desire to acquire knowledge, while extrinsic motivation is based on external incentives, such as prizes, points, recognition or competitions. The application of game elements in teaching enables the connection of internal and external motivation through various forms of reward, advancement and feedback.

Numerous studies link gamification with greater student engagement and more active participation in teaching activities. Through interactive activities, challenges, quizzes and progression systems, students participate more actively in learning and develop greater interest in teaching content. In particular, the possibility of immediate feedback is highlighted, which allows students to monitor their own progress and contributes to a sense of achievement and competence. Such an environment can positively affect the attention of students, their concentration and willingness to continuously participate in teaching activities (Kapp, 2012; Wang & Tahir, 2020).

Some authors emphasize that gamification can contribute to the development of active and experiential learning through problem solving, research tasks and collaborative activities (Landers, 2014; Subhash & Cudney, 2018). However, the effectiveness of this approach largely depends on the method of pedagogical implementation and the alignment of gamified activities with educational goals. By integrating game elements, students' independence, cooperation among peers and the development of critical thinking are encouraged. In such a teaching environment, the student becomes an active participant in the learning process, while the teacher has the role of organizer and support in learning (Landers, 2014; Subhash & Cudney, 2018).

7. Advantages of gamification in teaching

The literature points to several pedagogical advantages associated with the application of gamification in the educational environment (Hamari, Koivisto & Sarsa, 2014; Subhash & Cudney, 2018). One of the most frequently emphasized advantages refers to the

increase in student motivation for learning and more active participation in teaching activities. Elements such as points, levels, challenges and rewards can contribute to the creation of a stimulating environment in which students show greater interest in teaching content and greater willingness to participate in the learning process (Hamari, Koivisto & Sarsa, 2014; Kapp, 2012).

Gamification can also contribute to the development of active learning, because students through various tasks, missions and interactive activities have the opportunity to explore, solve problems and apply knowledge in concrete situations. In this way, students become active participants in the teaching process, while the teacher plays the role of organizer and facilitator of learning. Contemporary research indicates that gamified approaches can increase students' engagement, their persistence and readiness for independent learning (Subhash & Cudney, 2018; Landers, 2014).

One of the significant characteristics of gamified learning is the possibility of immediate feedback. Through various gamified activities, students can quickly get information about their progress, achievements and areas that require additional work. Such feedback can contribute to a greater sense of competence and motivate students to participate more actively in learning and achieving educational goals (Kapp, 2012; Hamari, Koivisto & Sarsa, 2014).

Interactive activities, shared challenges and game elements also encourage communication, teamwork and social interaction among students, thus supporting the development of both academic and social competences (Subhash & Cudney, 2018; Wang & Tahir, 2020; Kapp, 2012).

8. Limitations of gamification in teaching

Despite its well-documented educational benefits, gamification is not without limitations. The reviewed literature indicates that its effectiveness depends on thoughtful pedagogical design, appropriate implementation, and the educational context in which it is used. When these conditions are not met, gamification can lead to unintended effects that diminish its educational value (Hanus & Fox, 2015; Almeida et al., 2023).

In addition, some authors indicate the possibility of distraction and superficial learning in a gamified environment. Too much focus on the elements of the game can lead to students paying more attention to the competition and prizes than to the understanding of the teaching content. In such situations, the learning process can become focused on short-term results, instead of developing lasting and meaningful knowledge (Almeida et al., 2023).

The limitations of gamification refer to the technical and organizational conditions of its application in teaching. Effective implementation of gamified activities often requires appropriate digital infrastructure, internet access, availability of digital devices and developed digital competences of teachers and students. The lack of technical conditions can make it difficult or limit the application of gamification, especially in environments with weaker material and technological resources (Subhash & Cudney, 2018).

In addition to pedagogical challenges, some authors point to the problem of digital inequality, which can limit the effective application of gamification in education (Selwyn, 2016). Differences in access to digital devices, the Internet and technological resources can lead to unequal opportunities for students to actively participate in gamified activities. These findings indicate that the successful implementation of gamification requires not only appropriate technological resources but also careful lesson planning, teacher preparedness, and equal learning opportunities for all students (Selwyn, 2016; Teräs, 2022).

9. Examples of the application of gamification in teaching

The application of gamification in modern teaching is achieved through various digital tools and platforms that enable the integration of game elements into the learning process. The use of gamified activities contributes to the creation of a more interactive and dynamic educational environment, in which students participate more actively in teaching activities, receive immediate feedback and develop greater motivation for learning (Kapp, 2012; Hamari, Koivisto & Sarsa, 2014).

One of the most frequently used tools in teaching is Kahoot!, which enables the organization of interactive quizzes and competitive activities in real time. The application of this tool can contribute to increasing the attention, engagement and motivation of students through the use of points, ranking lists and time-limited tasks. The special importance of such activities is reflected in the possibility of providing immediate feedback and active involvement of all students in the process of checking knowledge (Wang & Tahir, 2020).

Similar possibilities are provided by Quizizz, which enables the realization of gamified quizzes in individual and group work. By using various game elements, such as avatars, points and progression systems, students are provided with a more interactive learning experience and greater independence while working. The advantage of such tools is reflected in the possibility of adapting activities to different levels of knowledge and individual needs of students (Zhao, 2019).

A notable example of gamification is Duolingo, a language learning platform that uses levels, rewards, challenges and continuous progression systems to encourage regular learning and keep users motivated. The application of game elements in this environment is based on the gradual achievement of goals and a sense of achievement, which can contribute to greater persistence of students in learning (Munday, 2016).

In the school environment, digital tools such as the ClassDojo platform, which enable monitoring student activities, providing immediate feedback and encouraging positive behaviour through various elements of gamification, are also widely used. Application of such tools can contribute to greater engagement of students, improvement of communication between teachers, students and parents, as well as creation of a stimulating and cooperative atmosphere in the classroom. Research indicates that the integration of game elements and continuous feedback can have a positive effect on student motivation and their more active participation in the teaching process (Kapp, 2012; Hamari, Koivisto & Sarsa, 2014).

Although the application of gamified tools can contribute to greater motivation and engagement of students, their effectiveness depends on the method of pedagogical application and compliance with educational goals. Gamification should not be a substitute for the teaching process, but a strategy that can contribute to higher quality, more interactive and student-friendly learning (Subhash & Cudney, 2018; Hamari, Koivisto & Sarsa, 2014).

10. Conclusion

The results presented in this review indicate that gamification has significant potential to improve student motivation, engagement, and learning outcomes in a variety of educational contexts. The studies reviewed consistently suggest that the integration of game-based elements, such as points, badges, challenges, levels, quizzes, and rewards, can create more interactive and stimulating learning environments that encourage active participation and sustained interest in learning activities. However, the effectiveness of gamification depends not only on the presence of game elements but also on their pedagogically meaningful integration into the teaching process.

The proposed theoretical framework presented in this review contributes to a better understanding of the mechanisms through which gamification may influence educational outcomes by highlighting the interrelated roles of motivation and engagement.

The results of this review show that the successful application of gamification does not depend exclusively on the use of digital tools and game elements, but primarily on their thoughtful pedagogical planning. Educators should use gamification as a tool to encourage active learning, collaboration, and continuous feedback, not solely as a reward mechanism. At the same time, educational institutions have an important role in providing professional training for teachers, appropriate digital infrastructure and institutional support that enables the sustainable application of gamification in teaching practice.

The review also has several implications for educational policy and school development. Promoting digital competences, encouraging innovative teaching approaches, and creating supportive learning environments can enhance the educational value of gamification and contribute to more student-centred teaching practices.

Future research should be focused on longitudinal research that would enable the long-term effects of gamification on students' motivation, engagement and educational achievement to be seen. Also, it is desirable to conduct comparative research at different educational levels and in different educational systems in order to better understand the differences in the effects of the application of gamification. Special attention should be paid to examining the possibility of integrating gamification with artificial intelligence and personalized learning, as well as empirical validation of the theoretical framework proposed in this paper.

Gamification does not represent a universal solution to the challenges of modern education, but when it is based on clear pedagogical principles and aligned with educational goals, it can represent a significant factor in improving the quality of teaching, student motivation and their active participation in the learning process.

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