

Gamification in the educational process: Motivation or distraction?

Research Article

Editha-Margareta Coșarbă*

Department for the Training of Teaching Staff, Aurel Vlaicu University of Arad: Universitatea Aurel Vlaicu din Arad, Arad, Romania

Received 15 July 2025; Accepted 27 July 2025

Abstract: In the context of the accelerated transformation of contemporary education, gamification emerges as an innovative pedagogical strategy aimed at increasing students' motivation and engagement in the learning process. This article seeks to investigate the impact of gamification in the educational environment, exploring both its potential to stimulate learning interest and the risks it entails, particularly concerning attention distraction and the superficial treatment of content. The analysis is based on an extensive literature review, supplemented by relevant case studies and comparative evaluations of gamified educational platforms. Through a critical approach to the pros and cons, the article provides a balanced perspective on gamification, offering recommendations for its effective use in pedagogical practice.

Keywords: *Gamification • School motivation • Active participation • Civic education • Didactic intervention • Digital platforms • Student behavior*

Modern education is undergoing a continuous transition, adapting to a globalized, digitalized, and deeply interconnected context. New generations of pupils and students, familiar with technology from an early age, exhibit different expectations compared to traditional teaching methods. In this context, innovative strategies become a necessity, not just an option (Zichermann & Cunningham, 2011). One of the most discussed and implemented alternative methods is gamification – the process of applying game elements to non-game contexts, such as education.

Gamification promises to transform learning activities into more engaging experiences by using mechanisms such as scoring, levels, rewards, and competition. However, the enthusiasm generated by this approach is also accompanied by skepticism, with voices warning about its potential to create dependence on incentives or to negatively affect the cognitive process by encouraging superficiality (Landers, 2014).

The aim of this article is to objectively and critically analyze the role of gamification in the educational process, attempting to answer the question: Is gamification a

genuine source of motivation, or rather a form of distraction from deep learning?

1. Theoretical framework

The concept of gamification comes from the English term “gamification” and refers to the process by which game design elements and mechanics are introduced into non-game contexts, with the goal of increasing user engagement. In the educational field, gamification refers to the use of these elements in didactic activities to stimulate the motivation and active participation of students or pupils.

According to Deterding et al. (2011) and collaborators, gamification is “the use of game design elements in non-game contexts,” and in education, this involves not merely decorating activities with playful elements but also restructuring the teaching-learning process to make it more engaging. Thus, the game becomes not just a tool for entertainment but a strategic vector for acquiring competencies and developing critical thinking.

In a broad sense, gamification involves (Caponetto et al., 2014):

- Setting clear and progressive goals,

* E-mail: editha.cosarba@uav.ro

- Introducing a reward system,
- Providing constant and visible feedback,
- Creating challenges and competitions among participants, and
- Developing a narrative or symbolic framework that supports emotional engagement.

This approach aligns with current pedagogical trends promoting experiential and interactive learning, as opposed to traditional transmissive methods.

Gamification cannot be fully understood outside the educational and psychological theories that underpin the relationship between motivation and learning. Some essential theories for understanding the phenomenon are as follows:

- (a) Behaviorism (Skinner, 1953): This theory emphasizes learning through conditioning, where desired behaviors are reinforced through rewards. The scoring mechanisms, badges, levels, or leaderboards used in gamification directly reflect this behaviorist paradigm – the student is stimulated to repeat desired behaviors in order to obtain a reward.
- (b) Constructivism (Piaget, 1973; Vygotsky, 1978): This promotes the idea that learning is an active and personalized process, where individuals construct knowledge through interaction with their environment. Gamified activities, which encourage exploration, collaboration, and critical thinking, can provide a favorable environment for applying these principles.
- (c) Self-determination theory (Deci & Ryan, 1985): This distinguishes between intrinsic motivation (which stems from genuine interest in the activity) and extrinsic motivation (determined by external rewards). In an educational context, gamification can support both forms, but the literature warns that, if overused, it risks replacing intrinsic motivation with one that is dependent on rewards.
- (d) Educational flow (Csikszentmihalyi, 1990): This refers to a state of intense concentration and full involvement in an activity. Gamified activities, if properly calibrated, can facilitate reaching this state by providing challenges adapted to the student's level and immediate feedback, contributing to a sense of progress and personal satisfaction.

Gamification in education involves several fundamental elements, which can be used individually or in combination, depending on pedagogical objectives (Hanus & Fox, 2015):

- Scoring system: rewarding performance and participation through quantifiable points;
- Leaderboards: creating a competitive context that can stimulate progress, but which also carries the risk of demotivation for students with lower performance;
- Badges and virtual trophies: symbolic rewards for achieving specific objectives;
- Levels and visible progress: marking advancement by moving on to new levels of difficulty;
- Immediate feedback: one of the most valuable mechanisms supporting reflective learning;
- Narratives and avatars: creating a symbolic identity for students and integrating them into a narrative universe that stimulates engagement.

Another important aspect is the differentiation between superficial gamification – which uses only decorative elements without a real connection to learning content, and deep gamification – which integrates game mechanics into the structure and pedagogical objectives, thereby supporting authentic learning and knowledge transfer (Lee & Hammer, 2011).

Implementing gamification in an educational context does not simply involve the application of playful mechanisms but requires a rethinking of the way didactic activities are designed. In the past decade, numerous educational institutions, teachers, and educational software developers have successfully experimented with various gamification models, adapted both to primary/secondary education and to higher education (Barata et al., 2013).

In the following, we will analyze several relevant examples and their impact on the educational process.

Gamified digital platforms

- (a) Kahoot! is one of the most popular interactive quiz platforms, widely used in schools and universities. Students participate in real-time question-and-answer games, and the leaderboard is displayed immediately, encouraging friendly competition. Studies show that regular use of Kahoot! increases both participation levels and information retention (Plump & LaRosa, 2017).
- (b) Classcraft integrates a complex system of roles, experience points, quests, and collaboration among students, transforming the entire class into a role-playing game. Teachers can adapt the “quests” to the subject matter being taught, and positive behaviors are rewarded. According to a study conducted by Sheldon (2015), the use of Classcraft led to a significant improvement in classroom climate and student cooperation.
- (c) Duolingo is well-known for language learning but also offers a complete gamification model based on visual progress, badges, points, and weekly competitions. Although it is primarily intended for self-learning, it can also be integrated into instructional scenarios. Duolingo uses gamification to stimulate

daily learning, building educational habits through repetition and extrinsic motivation.

- (d) Quizizz, Socrative, and Mentimeter are platforms that allow teachers to create interactive real-time quizzes with immediate feedback. Unlike traditional evaluation methods, these tools increase engagement levels and enhance learning through mechanisms of quick correction and reinforcement.

One of the most frequently mentioned risks is the cognitive overload caused by the simultaneous presence of multiple visual and auditory stimuli, typical of gamified platforms. This abundance can distract students' attention from the actual content and lead to a superficial approach to learning.

Gamification sometimes tends to encourage the accumulation of points at the expense of real understanding of concepts.

The study conducted by Hanus and Fox (2015) revealed that, in certain university contexts, gamification had a negative effect on intrinsic motivation and on students' perceptions of the subject matter, due to an increased perception of the "game" as being artificial.

Another major risk is the dependence on extrinsic motivation, especially among younger students. When progress is stimulated solely through points, medals, or leaderboard rankings, students can become dependent on these rewards to maintain their engagement. In the absence of such incentives, the educational activity may appear boring or irrelevant to students.

Deci and Ryan (2000), through their self-determination theory, warn about the long-term negative effects of extrinsic rewards: they can undermine intrinsic motivation and reduce the desire to learn for the sake of learning.

Gamification, especially in its competitive form, can accentuate performance differences among students. Those who do not achieve high scores or who struggle to keep up with the demands of the game may experience frustration, anxiety, or even rejection (Hamari et al., 2014).

Moreover, introverted students or those with learning difficulties may be marginalized during competitive activities. It is essential for teachers to adopt inclusive strategies, create collaborative contexts, and avoid stigmatizing lower-performing students. Without a proper balance, gamification can become a source of stress rather than motivation.

In some cases, the implementation of gamification depends on access to appropriate technological resources – tablets, computers, internet connectivity, and functional applications. In schools located in disadvantaged areas, such access may be limited, creating a gap between pedagogical intentions and the real possibilities for

implementation. Additionally, creating and adapting gamified activities requires time and digital skills from teachers. The lack of training or the overload of teachers can lead to the ineffective or superficial application of the methodology.

The multidimensional analysis of gamification in education reveals a complex reality: gamification is neither a universal solution nor a latent threat, but rather a pedagogical tool that can generate profoundly different effects depending on how it is applied.

Specialized literature highlights an ambiguous aspect of gamification: while most studies report an increase in motivation and participation in the short term, long-term effects are less clear.

In particular, excessive use of rewards can lead to an "inflation of extrinsic motivation," where students learn primarily to obtain points or badges. Moreover, it is important to note that increased motivation does not guarantee deeper learning. Enthusiastic participation can mask a superficial processing of information, especially if the gamified activity lacks sufficient cognitive rigor. Gamification becomes effective only when the teacher manages to maintain a balance between play and learning (Kapp, 2012).

Excessive emphasis on competition, fun, or visual elements can distract from the educational content. In this regard, the role of the teacher is essential – they must act as a designer of learning experiences, carefully calibrating the playful stimuli to support, rather than replace, authentic learning processes.

Thus, a sustainable pedagogical model would imply a contextualized gamification that:

- Supports educational objectives;
- Is adapted to the developmental level of the students;
- Encourages reflection, collaboration, and critical thinking;
- Integrates formative assessment, not just performance rewards.

In light of the above analysis, we can formulate the following position: gamification has the potential to act as a catalyst for learning, but only if applied critically, with balance, and with a solid pedagogical foundation. In the absence of these conditions, it risks becoming mere "cosmeticization" of the educational process, with short-term effects and long-term costs (Werbach & Hunter, 2012).

Gamification in the educational process emerges as a multifaceted strategy, situated at the intersection of pedagogy, psychology, and technology.

The analysis conducted in this article has highlighted both its motivational potential and the risks and limitations it entails when applied without a clear pedagogical

vision. On one hand, introducing game elements into teaching activities can stimulate participation, support motivation, and transform learning into a more engaging experience.

For the future, more longitudinal research is needed to investigate the long-term effects of gamification in various educational contexts, as well as the development of standardized methodological models to guide the effective implementation of this strategy.

2. Case studies and previous research results

In the specialized literature, gamification is increasingly supported by a growing number of empirical studies investigating its effectiveness in various educational contexts. These studies offer practical insights into how game mechanics can be integrated into the teaching-learning process and their impact on students' motivation, participation, and academic performance.

Study 1: Complutense University of Madrid (Domínguez et al., 2013)

This study was conducted within a university engineering course and investigated the impact of a gamified system integrated into an online learning platform. The researchers created an experimental design with two groups: one that benefited from traditional materials and activities (the control group) and another that used gamification elements (the experimental group), such as

quests, experience points, badges, and a system of constant feedback. Participants were second-year students, and the research was conducted over the course of one semester (Figure 1).

The results showed that students in the gamified group were more engaged in course activities, accessed the learning platform more frequently, and completed a greater number of tasks. However, no significant differences were recorded in final grades between the two groups, suggesting that gamification mainly impacted motivation and engagement rather than strictly academic performance.

The authors concluded that gamification can be an effective catalyst for student participation, especially in digital environments, but its success depends on the quality of instructional design and its coherent integration into the curriculum.

Study 2: Primary School in Helsinki (Sointu et al., 2020)

In Finland, a team of researchers implemented a gamified intervention during math lessons for primary school students (grades III–IV). The study included 120 students and aimed to analyze the influence of gamification on intrinsic motivation and academic performance, with a particular focus on students with concentration difficulties or lower levels of engagement in school activities.

The intervention consisted of using a mobile app that included math games tailored to each student's level, a progressive point system, levels of difficulty, immediate feedback, and symbolic rewards. Over the course of 8

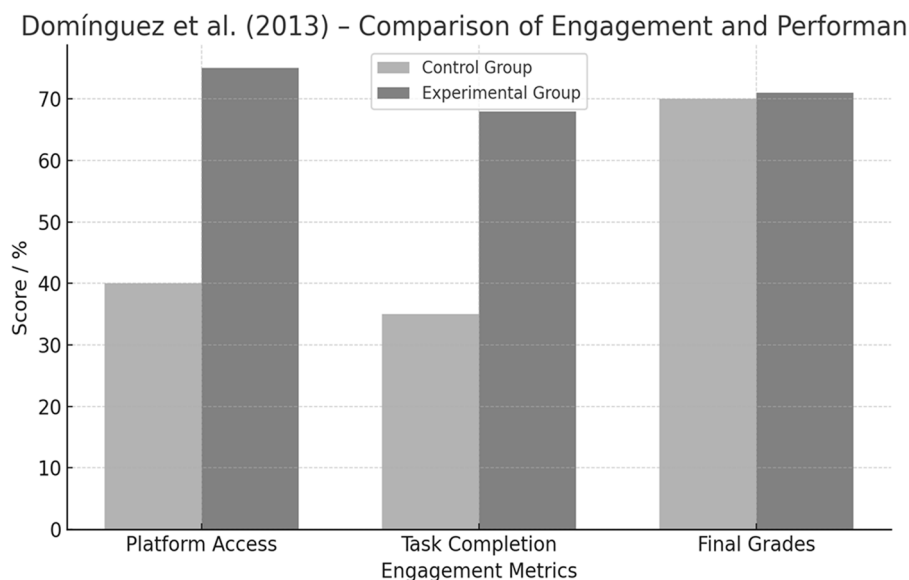


Figure 1. Comparative metrics of engagement and final grades between gamified and traditional groups (Domínguez et al., 2013).

weeks, students participated in weekly gamified learning sessions, and motivation was assessed through psychometrically validated questionnaires.

The results indicated a significant increase in intrinsic motivation, especially among students with initially low scores. Additionally, performance in mental calculation and problem-solving exercises visibly improved.

The researchers emphasized that game elements can be a valuable pedagogical resource for personalizing learning and increasing engagement, particularly among vulnerable students.

Study 3: University of Bucharest – Faculty of Psychology and Educational Sciences (Ionescu & Pană, 2021)

This national study was conducted in several lower secondary schools in Bucharest and aimed to evaluate the impact of using a gamified application (based on the Wordwall platform) in teaching Romanian language and literature.

The research involved six classes (approximately 150 students) and compared results obtained through traditional teaching methods with those obtained after applying the gamified method.

The application was used to consolidate grammar concepts and develop writing skills. The activities included interactive games, linguistic challenges, and team competitions, with visible scoring and leaderboards. The intervention lasted 4 weeks, during which students were monitored in terms of active participation, the quality of their responses, and the degree of emotional involvement.

The study revealed a 34% increase in active participation compared to the control group, as well as a significant improvement in writing skills. Moreover, teachers observed a more relaxed classroom atmosphere and a more positive relationship among students.

The authors concluded that gamification can be an effective tool in teaching humanities subjects, not just exact or technical sciences, provided the teacher is well-prepared and the design is well-adapted to the content being taught.

Study 4: Gamified didactic intervention conducted in lower secondary school (own study)

The study was conducted between February and March 2025 in a lower secondary school, aiming to evaluate the impact of gamification on school motivation and active participation during civic education classes.

The research compared the results of two seventh-grade classes: one exposed to a gamified intervention and the other following traditional teaching methods.

3. Methodology

The study was based on a quasi-experimental design with a control group and an experimental group, aiming to explore the impact of gamification on school motivation and participation. It involved a sample of 50 seventh-grade students, equally divided into two groups (25 students in the experimental group and 25 in the control group), with an average age of 13 years. The intervention lasted 4 weeks, during which students attended 2 h of civic education classes per week.

The experimental group benefited from a gamified didactic program implemented using the Classcraft digital platform, allowing the personalization of the learning journey, integration of symbolic rewards (points, badges, levels), and stimulation of collaboration through team challenges. Meanwhile, the control group followed the same curricular content but through traditional methods, without gamified or digital elements.

Several instruments adapted to the specifics of the research were used to evaluate the intervention's effectiveness:

- School motivation questionnaire, based on a 5-point Likert scale inspired by the theoretical model of Deci and Ryan (2000), administered before and after the intervention to measure levels of intrinsic and extrinsic motivation;
- Self-assessment participation sheet, completed weekly by students, tracking their active participation in class activities as a percentage;
- Systematic observation, conducted by the teacher, using a qualitative rating grid for participatory behaviors (oral interventions, collaboration, initiative, rule compliance);
- Teacher's reflective journal, written after each session, providing a narrative perspective on the classroom atmosphere, encountered challenges, and observed progress among students.

This combination of quantitative and qualitative tools enabled a complex and nuanced analysis of the effects of gamification on the educational process.

4. Results

The school motivation questionnaire, administered before and after the intervention, used a Likert scale from 1 (not at all true) to 5 (very true), consisting of 12 items grouped into two main dimensions: intrinsic motivation and extrinsic motivation (Table 1).

Group	Pre-test	Post-test	Difference
Experimental	3.2	4.5	+1.3

Table 1. Evolution of average motivation scores in experimental and control groups: pre-test vs post-test.

Source: Author's contribution.

Descriptive statistics and *t*-test results further confirmed the reliability of the observed improvement in the experimental group.

The motivation scores of the experimental group reveal a clear and consistent upward trend from the pre-test to the post-test phase. For nearly all 25 students, post-test scores demonstrate a marked increase compared to their initial measurements. Statistically, this suggests a strong effect of the gamified intervention. The clustering of post-test values near the upper limit of the Likert scale (score of 5) reflects not only increased motivation but also a possible homogenization of engagement levels among students. This phenomenon, known as positive convergence, highlights the ability of gamification to uplift motivation across varying initial performance levels (Figure 2).

This visual pattern is supported by the results of the paired samples *t*-test, which yielded $t(24) = 10.82$, with a *p*-value of less than 0.0001. Such a highly significant result indicates that the probability of the observed improvement occurring by chance is extremely low, thereby confirming the statistical reliability of the intervention's impact.

From a pedagogical perspective, these results demonstrate that when gamification is applied thoughtfully and

consistently, it can have a substantial effect on intrinsic motivation. The engaging nature of game elements, such as rewards, progression, and feedback, likely contributed to higher emotional involvement and cognitive commitment from students. This reinforces the role of gamification not merely as a motivational trigger, but as a strategic educational approach capable of transforming classroom dynamics and learner outcomes. When applied properly, gamification significantly boosts intrinsic motivation and student engagement.

The control group's motivation scores reveal a relatively flat trend, with no discernible pattern of consistent improvement or decline across the 25 students. The differences observed between pre-test and post-test scores are minimal and appear randomly distributed, suggesting that no substantial change in motivation occurred over the course of the intervention. This visual finding aligns with the results of the paired samples *t*-test, which yielded $t(24) \approx 0.94$ and a *p*-value of 0.36. Such a result clearly indicates that the observed differences are not statistically significant and could be attributed to random variation (Figure 3).

From a pedagogical standpoint, the stability in motivation scores within the control group highlights the limited impact of traditional instructional methods in altering student engagement over a short period. While these methods may provide structure and content delivery, they may lack the stimulating or emotionally engaging elements needed to trigger meaningful changes in student motivation. The contrast with the experimental group

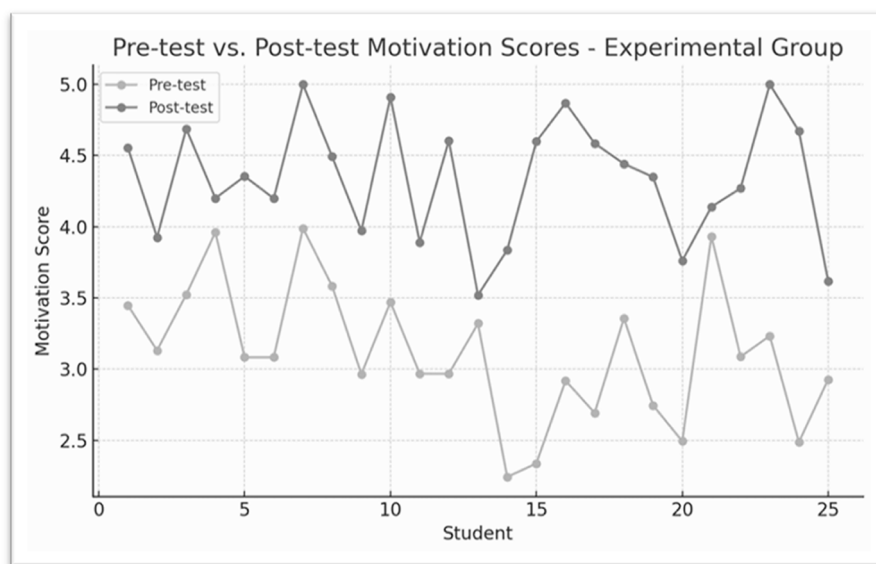


Figure 2. Motivation scores – experimental group.

Source: Author's contribution.

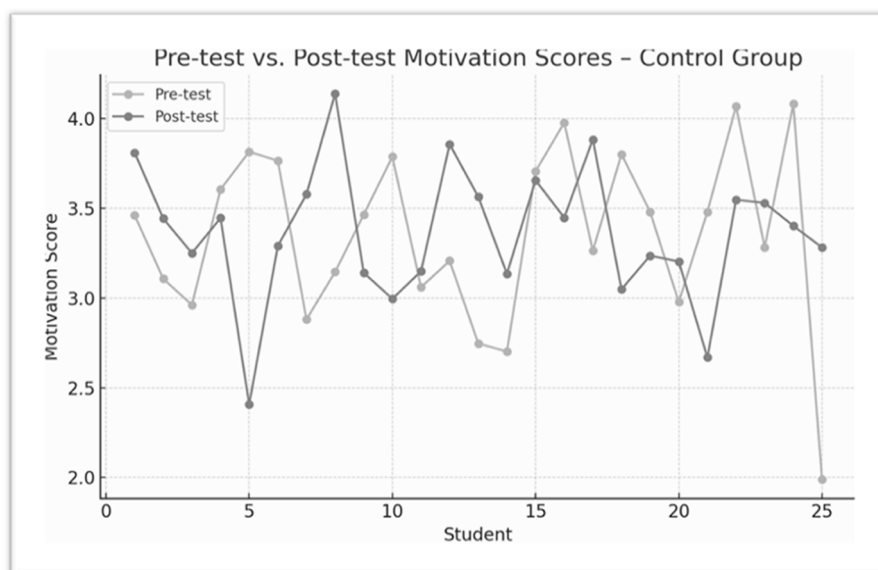


Figure 3. Motivation scores – control group.

Source: Author's contribution.

further underscores the potential benefits of incorporating gamified strategies in educational settings. Traditional methods did not significantly affect student motivation over the short term, emphasizing the need for innovative approaches.

Comparing weekly participation between the experimental and control groups provides a striking visualization of engagement trends throughout the 4-week

intervention. The experimental group exhibited a steady and substantial rise in participation rates, beginning at 58% and culminating at 86% by the final week. This progressive increase suggests a growing sense of involvement, likely fueled by the intrinsic appeal and external structure of the gamified learning environment (Figure 4).

In contrast, the control group displayed only minor fluctuations in participation, ranging narrowly from 59

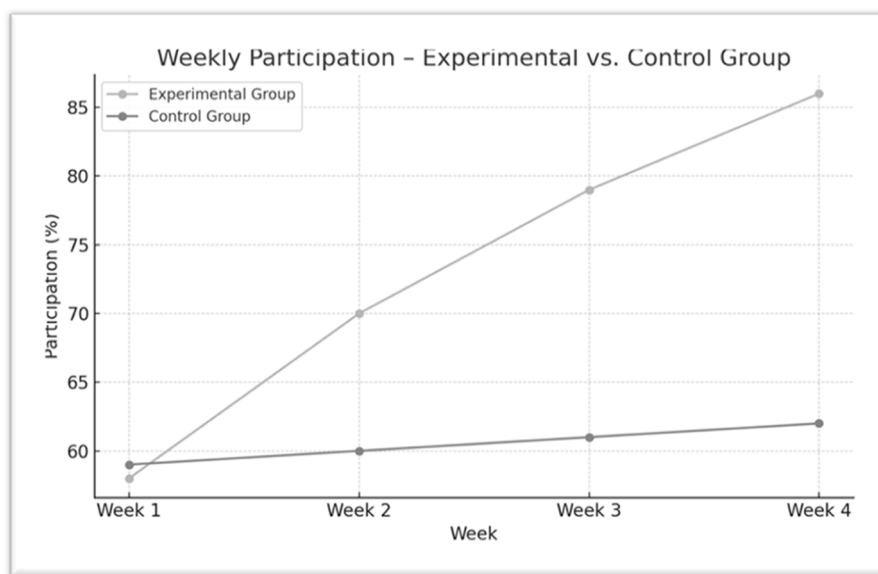


Figure 4. Weekly participation – experimental vs control group.

Source: Author's contribution.

to 62%. This lack of variation implies stagnation in voluntary classroom engagement under traditional instructional conditions.

The divergent trajectories between the two groups are particularly telling. The upward curve of the experimental group points to a cumulative motivational effect, where repeated exposure to engaging, game-based tasks builds momentum over time. This pattern suggests that gamification may not only attract students initially but can also sustain and enhance their involvement week by week.

Pedagogically, these results underline the role of gamification as a tool for fostering both consistency and inclusivity in classroom engagement. The increasing trend in the experimental group implies that such strategies may reduce participation barriers, encouraging even typically reserved students to contribute actively in learning activities. Gamification not only stimulates motivation but also fosters consistent active engagement and improves inclusion.

The qualitative observations made by the teacher, systematically documented using a behavioral analysis grid, provided valuable complementary data. These revealed several visible changes in the dynamics of the experimental group:

- There was more balanced participation between active and withdrawn students, indicating a pedagogical inclusion effect of the game by reducing participation barriers for shy or less confident students.
- The number of spontaneous questions asked by students and the frequency of voluntary interventions increased significantly, reflecting greater interest in lesson content and a higher willingness for cognitive involvement.
- Furthermore, a decrease in disruptive behaviors (e.g., side conversations, lack of concentration, refusal to complete tasks) was observed, suggesting an improvement in self-regulation within the context of learning perceived as a “game” but structured by clear rules and responsibilities.

These qualitative findings validate the quantitative data and outline a coherent picture of the positive impact of gamification not only on reported motivation but also on students’ actual behavior in the classroom, promoting an active, responsible, and positive learning environment.

5. Limitations and future research

Despite the promising results demonstrated in this study, several limitations must be acknowledged. First, the sample size was relatively small and limited to a single educational institution, which restricts the generalizability of the findings. A larger and more diverse sample would

provide stronger evidence for the broader applicability of gamification in different educational contexts.

The intervention was conducted over a short period of 4 weeks. Although this timeframe allowed for initial effects to be observed, it does not provide insights into the long-term sustainability of motivational improvements. Future research should include longitudinal studies to examine whether the effects of gamification persist over time and continue to impact learning behaviors.

The self-reported nature of certain measures, such as the motivation questionnaire and participation logs, may introduce bias. While the study employed complementary qualitative observations to counterbalance this, incorporating objective performance metrics and blind assessment in future studies would enhance the reliability of the results.

Furthermore, this study focused predominantly on motivation and participation, but did not deeply investigate cognitive gains, retention of knowledge, or transfer of learning. Future research should expand the scope to evaluate how gamification affects higher-order learning outcomes.

Finally, while the intervention was successful in increasing engagement, it relied heavily on extrinsic motivational elements such as rewards and points. Further investigation is needed into how to balance these with intrinsic motivators, to avoid dependency on external stimuli and to support deeper learning experiences.

6. Conclusions

Gamification had a clear impact on intrinsic motivation, as well as on students’ cognitive and social engagement. As a result, students reported feeling freer to make mistakes and try again, highlighting that learning became less stressful and more stimulating. Furthermore, the integration of the digital platform provided a structured framework for feedback and rewards, which, in turn, fostered both collaboration among students and healthy competition within the learning environment.

The impact of gamification is not universally positive and depends on several factors. First, age and student profile play a crucial role, as younger students tend to respond positively to visual elements and symbolic rewards, whereas older students may perceive game mechanics as childish if they are not well-calibrated.

Second, the educational objectives must be considered, since gamification proves effective for reinforcement, review, and motivation activities, but is less suitable for contexts that require deep reflection and critical thinking. Moreover, the teaching style greatly influences the success of gamification, as its effectiveness relies on the teacher’s

ability to integrate game-based mechanisms naturally, without making them feel artificial or forced.

Maintaining a balance between competition and collaboration is essential, because excessive competition can lead to stress and demotivation, particularly among lower-performing students, while collaborative models, such as team-based games, can help to mitigate these effects.

Although gamification is increasingly popular among education practitioners and researchers, its application is not without challenges. There are a number of risks and limitations that can reduce the effectiveness of this method or even compromise educational goals if not applied judiciously.

Funding information

Author states no funding involved.

Author contributions

The author, makes a significant contribution to the field of research on gamification in education through a comprehensive analysis that combines a theoretical approach with empirical data obtained from a quasi-experimental study conducted at the lower secondary school level. The paper offers a balanced assessment of gamification's motivational potential as well as its risks, emphasizing the distinction between superficial and deep gamification. By integrating the results of her own experiment, the author demonstrates the positive impact of a gamified instructional program on students' intrinsic motivation and active participation, while also highlighting the need for careful calibration of game elements to avoid long-term negative effects. The study enriches the existing literature by providing a model of intervention adaptable to diverse educational contexts, supporting the notion of a critical and contextualized application of gamification.

Conflict of interest statement

Authors state no conflict of interest.

References

- Barata, G., Gama, S., Jorge, J., & Gonçalves, D. (2013). Improving student creativity with gamification and virtual worlds. In *CHI'13 Extended Abstracts on Human Factors in Computing Systems*.
- Caponetto, I., Earp, J., & Ott, M. (2014). Gamification and education: A literature review. In *European Conference on Games Based Learning*.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. Harper & Row.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Springer.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268.
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining gamification. In *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments*.
- Domínguez, A., Saenz-de-Navarrete, J., de-Marcos, L., Fernández-Sanz, L., Pagés, C., & Martínez-Herráiz, J. J. (2013). Gamifying learning experiences: Practical implications and outcomes. *Computers & Education*, 63, 380–392.
- Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does gamification work? A literature review of empirical studies on gamification. In *47th Hawaii International Conference on System Sciences*.
- 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.
- Ionescu, M., & Pană, S. (2021). Gamificarea în învățământul gimnazial: studiu de caz în predarea limbii române. *Revista de Pedagogie*, 69(2), 84–95.
- Kapp, K. M. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education*. Pfeiffer.
- Landers, R. N. (2014). Developing a theory of gamified learning: Linking serious games and gamification of learning. *Simulation & Gaming*, 45(6), 752–768.
- Lee, J. J., & Hammer, J. (2011). Gamification in education: What, how, why bother? *Academic Exchange Quarterly*, 15(2), 3.
- Piaget, J. (1973). *To understand is to invent: The future of education*. Grossman.
- Plump, C. M., & LaRosa, J. (2017). Using Kahoot! in the classroom to create engagement and active learning: A game-based technology solution for eLearning novices. *Management Teaching Review*, 2(2), 151–158.

- Sheldon, L. (2015). *The multiplayer classroom: Designing coursework as a game*. Cengage Learning.
- Skinner, B. F. (1953). *Science and human behavior*. Macmillan.
- Sointu, E. T., Valtonen, T., Kukkonen, J., & Väisänen, P. (2020). Gamification of education and learning in schools: A systematic review of the literature. *Education and Information Technologies*, 25(1), 3661–3687.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Werbach, K., & Hunter, D. (2012). *For the win: How game thinking can revolutionize your business*. Wharton Digital Press.
- Zichermann, G., & Cunningham, C. (2011). *Gamification by design: Implementing game mechanics in web and mobile apps*. O'Reilly Media, Inc.