

Managing Students' Excessive Activity Through Gamified Learning to Improve Concentration

Lilis Rahmawati, Moh Dimas Yusuf Arifin, Devita Anggraeni

STAI Miftahul 'Ula Nganjuk, Indonesia

E-mail: elrahmawati22@gmail.com

Abstract

This study addresses the challenge of managing students' excessive activity and limited attention span in an elementary classroom, particularly in Grade 4A2 at MIN 4 Nganjuk. Hyperactive tendencies, characterized by high motor activity, impulsivity, and difficulty sustaining attention, often disrupt the learning process when not properly directed. Positioned within innovative pedagogical approaches, this research explores gamification as a strategic intervention to channel students' energy into constructive engagement. This study aims to describe the implementation of gamified learning and to examine its impact on students' focus and concentration. Using a qualitative approach, data were collected through classroom observation, interviews, and documentation during a four-week implementation procedure. Points, missions, badges, leaderboards, and instant feedback were integrated into daily learning activities. The findings indicate a notable improvement in students' attention span, increasing from an average of 10-15 minutes to 30-40 minutes during learning sessions. Classroom dynamics also shifted from disruptive behavior to active and collaborative participation. The study concludes that gamification can transform excessive activity into meaningful engagement while fostering concentration, positive social interaction, and emerging intrinsic motivation among students.

Keywords: *Students' Excessive Activity, Gamification, Concentration.*

Abstrak

Penelitian ini membahas tantangan dalam mengelola aktivitas siswa yang berlebihan dan rentang perhatian yang terbatas di kelas sekolah dasar, khususnya pada kelas 4A2 MIN 4 Nganjuk. Kecenderungan hiperaktif yang ditandai oleh aktivitas motorik tinggi, impulsivitas, dan kesulitan mempertahankan perhatian sering mengganggu proses pembelajaran apabila tidak diarahkan secara tepat. Dalam kerangka pendekatan pedagogis inovatif, penelitian ini mengeksplorasi gamifikasi sebagai strategi untuk menyalurkan energi siswa ke dalam keterlibatan belajar yang konstruktif. Penelitian ini bertujuan mendeskripsikan penerapan pembelajaran berbasis gamifikasi dan menganalisis dampaknya terhadap fokus serta konsentrasi siswa. Dengan pendekatan kualitatif, data dikumpulkan melalui observasi kelas, wawancara, dan dokumentasi selama empat minggu penerapan. Unsur poin, misi, lencana, papan skor, dan umpan balik langsung diintegrasikan ke dalam kegiatan pembelajaran harian. Hasil penelitian menunjukkan peningkatan rentang perhatian siswa dari rata-rata 10-15 menit menjadi 30-40 menit dalam sesi pembelajaran. Dinamika kelas juga berubah dari perilaku mengganggu menjadi partisipasi aktif dan kolaboratif. Penelitian ini menyimpulkan bahwa gamifikasi dapat mengubah aktivitas berlebihan menjadi keterlibatan belajar yang bermakna, sekaligus meningkatkan konsentrasi, interaksi sosial positif, dan motivasi intrinsik siswa.

Kata Kunci: Aktivitas Siswa Berlebihan, Gamifikasi, Konsentrasi.

A. Introduction

The teaching and learning process in the classroom is a complex interaction involving teachers, instructional materials, learning strategies, and students. At the elementary school level, one of the central challenges faced by educators is managing students with diverse energy levels, attention spans, and behavioral tendencies. In Grade 4, students are generally in a developmental stage in which curiosity and physical activity are prominent; therefore, teachers must be able to manage learning situations so that students remain engaged without disturbing classroom order.¹

This challenge becomes more visible when several students show excessive activity. If such activity is not properly directed, it may disrupt learning focus, both for the students themselves and for their peers. Students with high activity levels often find it difficult to sit still, are easily distracted, and tend to perform movements unrelated to the lesson, resulting in a less optimal process of knowledge transfer.

In educational psychology, this condition is often associated with hyperactivity. Hyperactivity is not merely “being very active,” but a behavioral pattern related to difficulty sustaining attention, impulsive action, and activity levels that are inappropriate to the learning situation. Although teachers should avoid labeling students clinically without professional assessment, understanding these characteristics is important because they affect classroom management and learning participation.²

Teachers are therefore expected not only to deliver instructional materials but also to act as classroom managers who create a conducive learning environment for all students. Effective classroom management requires instructional variation, clear rules, immediate feedback, and learning activities that are responsive to students’ needs.³

Along with the development of modern pedagogy, various creative approaches have been introduced to address this challenge. One of these approaches is gamification, namely the use of game design elements in non-game contexts. In education, gamification commonly includes points, badges, missions, levels, leaderboards, and feedback mechanisms to increase motivation, engagement, and persistence during learning.⁴

¹ John W. Santrock, *Educational Psychology*, 5th ed. (New York: McGraw-Hill, 2011), 198; Anita Woolfolk, *Educational Psychology: Active Learning Edition*, 12th ed. (Boston: Pearson, 2013), 475-480.

² *American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders*, 5th ed. (Arlington, VA: American Psychiatric Publishing, 2013); Russell A. Barkley, *Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment*, 4th ed. (New York: Guilford Press, 2015).

³ Anita Woolfolk, *Educational Psychology: Active Learning Edition*, 12th ed. (Boston: Pearson, 2013), 475-480.

⁴ Sebastian Deterding et al., “From Game Design Elements to Gamefulness: Defining Gamification,” *Proceedings of the 15th International Academic MindTrek Conference* (2011): 9-15; Karl M. Kapp, *The Gamification of Learning and Instruction* (San Francisco: Pfeiffer, 2012), 10.

Gamification does not mean turning the entire classroom into a game without learning objectives. Rather, it is a structured strategy that uses the motivational logic of games to support the achievement of learning outcomes. By transforming learning activities that may feel monotonous into challenging and enjoyable experiences, gamification has the potential to channel students' excess energy into positive and constructive participation.⁵

This study examines the use of gamification as a strategy to manage students' excessive activity and improve learning concentration in Grade 4A2 at MIN 4 Nganjuk. By understanding student characteristics and applying appropriate game elements, this study seeks to show that gamification can help students become more focused, cooperative, and meaningfully involved in the learning process.

B. Research Methods

This study used a qualitative approach. A qualitative approach was chosen because the research focused on understanding students' behavior, responses, and interaction dynamics during the implementation of gamification in Grade 4A2. Qualitative research allows researchers to examine educational phenomena naturally and contextually through observation, interview, and documentation.⁶

The research was conducted in Grade 4A2 at MIN 4 Nganjuk during a four-week implementation period. The subjects observed were students in the class, with particular attention to students who showed excessive activity and difficulty sustaining attention during learning. The data collection techniques consisted of classroom observation, informal interviews with students and teachers, and documentation of learning activities, including scoreboards, student participation, and classroom notes.

Data were analyzed through data condensation, data display, and conclusion drawing. Observation notes and interview results were organized according to recurring themes, such as attention span, disruptive behavior, participation, collaboration, response to rewards, and classroom engagement. This analysis made it possible to describe the changes that occurred before, during, and after the implementation of gamification.⁷

⁵ Karl M. Kapp, *The Gamification of Learning and Instruction*, 9-15; Gabe Zichermann and Christopher Cunningham, *Gamification by Design* (Sebastopol, CA: O'Reilly Media, 2011).

⁶ John W. Creswell and Cheryl N. Poth, *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*, 4th ed. (Thousand Oaks, CA: Sage, 2018), 45-49.

⁷ Matthew B. Miles, A. Michael Huberman, and Johnny Saldaña, *Qualitative Data Analysis: A Methods Sourcebook*, 3rd ed. (Thousand Oaks, CA: Sage, 2014), 31-33.

C. Results And Discussion

1. Understanding Hyperactivity and Gamification as a Learning Approach

a. The Nature of Hyperactivity in Elementary School Students

Hyperactivity is often misunderstood as mere misbehavior or restlessness. In educational psychology, however, hyperactivity is connected to a broader pattern of behavior involving high motor activity, impulsivity, and difficulty maintaining attention. Children with hyperactive tendencies may appear constantly moving, restless, and unable to remain seated for long periods, especially when the learning activity is monotonous or insufficiently stimulating.⁸

In elementary school settings, this condition presents a specific challenge. Classroom learning generally requires students to listen, wait for turns, complete tasks, and follow instructions. Students with hyperactive tendencies often need stronger and more varied stimuli to remain engaged in the learning process. If teachers rely only on lecture-based methods, students may quickly lose interest and look for other activities that provide immediate stimulation.⁹

b. Gamification: Bringing Game Elements into the Learning Environment

Gamification comes from the word “game,” but it does not mean allowing students to play without direction. Gamification refers to the deliberate use of game elements in a non-game environment, such as school learning. The main goal is to make learning more engaging, challenging, and meaningful so that students feel actively involved in the process.¹⁰

In classroom practice, gamification does not always require advanced technology or expensive applications. Teachers can create scoreboards from cardboard, provide paper stars or badges, design missions, and organize group challenges using simple classroom materials. What matters most is the creation of a learning atmosphere that contains the spirit of play: clear goals, challenge, feedback, progression, and recognition.¹¹

⁸ American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders*; Barkley, *Attention-Deficit Hyperactivity Disorder*.

⁹ Judy Willis, *Teaching the Brain to Read: Strategies for Improving Fluency, Vocabulary, and Comprehension* (Alexandria, VA: ASCD, 2008); Woolfolk, *Educational Psychology*, 475-480.

¹⁰ Deterding et al., “*From Game Design Elements to Gamefulness*,” 9-15; Kapp, *The Gamification of Learning and Instruction*, 10.

¹¹ Lee Sheldon, *The Multiplayer Classroom: Designing Coursework as a Game* (Boston: Cengage Learning, 2012); Zichermann and Cunningham, *Gamification by Design*.

c. The Connection Between Gamification and the Needs of Students with Excessive Activity

The relationship between gamification and the needs of students with excessive activity is close. Students who have difficulty sustaining attention often require frequent stimulation, clear structure, and immediate feedback. Gamification provides these elements through missions, points, badges, levels, and visible progress, making students feel that their actions have direct consequences in the learning process.¹²

Immediate feedback is especially important because students can quickly identify whether their actions are correct, how much progress they have made, and what they need to do next. In this sense, gamification can help transform scattered activity into directed activity. Rather than suppressing student energy, the teacher redirects it into tasks that support learning objectives.

2. Overview of Grade 4A2 Before the Implementation of Gamification

Before gamification was implemented, Grade 4A2 could be described as a very lively class, although the liveliness was not always controlled. Based on observations conducted during the initial phase, approximately seven out of thirty students showed excessive activity during lessons. Some students played with modeling clay while the teacher explained the lesson, some cut paper without a clear learning purpose, and others talked to their classmates about topics unrelated to the lesson.

This situation affected other students who attempted to concentrate. Students sitting near highly active classmates were often distracted and gradually lost focus. As a result, the teacher's energy was spent more on controlling behavior than on developing the learning material. Reprimands were only temporarily effective because the same behaviors reappeared a few minutes later.

Initial interviews with several students showed that they felt bored with the learning methods used previously. Some students stated that long explanations made them sleepy, while others said that sitting for too long made them uncomfortable. These responses indicate that excessive activity can also be understood as a form of response to boredom and physical discomfort. Therefore, students need learning activities that provide movement, challenge, and variation.

3. The Process of Implementing Gamification

Gamification was implemented gradually over four weeks. In the first week, the teacher introduced the "Hold the Book" game concept to all students. Grade 4A2 was

¹² Barkley, Attention-Deficit Hyperactivity Disorder; Kapp, The Gamification of Learning and Instruction.

transformed into a team tasked with keeping a book stable using pencils held together by the students. Every student acted as a supporter who had to cooperate with others to bring the book to its destination. Each successfully completed mission earned points, and the points could be exchanged for small rewards at the end of the week.

The learning missions were designed to remain aligned with the subject matter. For example, in a mathematics lesson on volume, the teacher designed the mission “Filling a Glass with Water,” in which students took turns filling a glass using a plastic spoon. In an Indonesian language lesson on writing currency values, the teacher designed the mission “Roll and Write the Value,” in which students rolled a bottle along a row of money cards and wrote the currency value according to the rules. Such mission-based structures are consistent with game-based learning design because they combine goals, rules, participation, and feedback.¹³

To help students monitor their progress, the teacher prepared a simple but attractive scoreboard from colorful paper and placed it on the classroom wall. Each student had a small paper pouch containing a name card. When students successfully completed a mission, they could move their name card to the next level. This visual progress made the achievement process concrete and easy for students to understand.

4. Changes Observed in Students After Gamification Was Implemented

The most noticeable changes began to appear in the second week of implementation. Students who had previously struggled to sit still and were easily distracted appeared more focused on the tasks at hand. They monitored their accumulated points, checked the scoreboard, and waited for the next challenge. Students with excessive activity showed high enthusiasm because the activities allowed movement while still requiring attention to instructions.

A student who previously wandered around the classroom began to move with a clear learning purpose, such as participating in a cardboard-stepping relay and completing a mission. Another student who often disturbed classmates by inviting them to chat became more active in group tasks and took turns filling boxes with colorful origami blocks. The classroom atmosphere shifted from chaotic and uncontrolled to lively yet focused.

Based on observation notes, students' focus duration improved. Before the implementation of gamification, students could typically maintain attention for only about 10-15 minutes before becoming distracted. After gamification was applied,

¹³ Sheldon, *The Multiplayer Classroom*; Kapp, *The Gamification of Learning and Instruction*.

particularly during missions and quizzes, students were able to maintain focus for approximately 30-40 minutes. Even students categorized as highly active showed the ability to concentrate when the learning activity contained clear challenges and immediate feedback.

5. *Analysis of Findings Based on Theoretical Review*

The findings indicate that students with excessive activity have strong learning potential when the learning environment is adjusted to their characteristics. Gamification provides dynamic and structured learning mechanics that help students direct their energy toward specific tasks. This finding is in line with the Response to Intervention perspective, which emphasizes the importance of providing targeted support based on students' learning and behavioral needs.¹⁴

In game theory and motivational psychology, there is a concept known as "flow." Flow refers to a condition in which a person becomes deeply immersed in an activity because the level of challenge is balanced with the person's ability. If the challenge is too easy, students become bored; if it is too difficult, they become anxious. Gamification allows teachers to adjust the level of challenge so that students remain focused without feeling frustrated.¹⁵

Another key factor in the success of gamification in Grade 4A2 was instant feedback. When students completed a mission, they immediately moved their name cards on the scoreboard. When they answered questions correctly, they could see the result immediately. From the perspective of brain-based learning, immediate feedback and positive reinforcement can strengthen motivation and encourage students to repeat productive behaviors.¹⁶

However, external rewards such as points and badges should be understood as initial support rather than the final goal of learning. The long-term aim is to develop intrinsic motivation, in which students learn because they find meaning, satisfaction, and competence in the learning process itself. In the final weeks of implementation, some students began to show signs of intrinsic motivation, such as feeling proud when solving difficult tasks and helping classmates who struggled.¹⁷

¹⁴ Shane R. Jimerson, Matthew K. Burns, and Amanda M. VanDerHeyden, *Handbook of Response to Intervention: The Science and Practice of Multi-Tiered Systems of Support*, 2nd ed. (New York: Springer, 2016).

¹⁵ Mihaly Csikszentmihalyi, *Flow: The Psychology of Optimal Experience* (New York: Harper & Row, 1990).

¹⁶ Willis, *Teaching the Brain to Read*; Daniel Z. Lieberman and Michael E. Long, *The Molecule of More* (Dallas, TX: BenBella Books, 2018).

¹⁷ Edward L. Deci and Richard M. Ryan, "The 'What' and 'Why' of Goal Pursuits: Human Needs and the Self-Determination of Behavior," *Psychological Inquiry* 11, no. 4 (2000): 227-268.

6. Challenges in Implementation and Applied Solutions

Although the results were generally positive, the implementation of gamification did not run without obstacles. In the early stage, several students focused too much on competition and point accumulation. They tried to finish missions quickly without paying sufficient attention to accuracy and understanding. This confirms the importance of designing gamification carefully so that game elements support meaningful learning rather than superficial competition.¹⁸

To address this issue, the teacher added a quality assessment component to every mission. Students were not only expected to complete the mission quickly but also to demonstrate accuracy, neatness, and teamwork. Collaboration badges and “help a friend” badges were introduced to reduce excessive individual competition and encourage mutual support.

Another challenge was the variation in students’ learning preferences. Some students responded enthusiastically to active and competitive tasks, while others preferred a calmer learning environment. To accommodate these differences, the teacher provided an option to complete certain missions independently in the reading corner. This strategy reflects differentiated instruction because it recognizes that students learn in different ways and need flexible learning options.¹⁹

7. Practical Implications for Teachers and Schools

The implementation of gamification in Grade 4A2 offers several practical implications. First, excessive student energy should not automatically be viewed as a problem. With appropriate learning design, this energy can be redirected into active participation. Second, gamification does not need to be complex or expensive. Simple classroom materials can be used as long as the rules, objectives, and feedback are clear.

Third, teachers need consistency in applying game rules and explaining the learning purpose behind each mission. Without clear learning objectives, gamification may only become entertainment. Fourth, collaboration with parents is important so that positive behavioral changes developed at school can be reinforced at home. Through communication between teachers and parents, students’ learning habits and concentration can be supported more consistently.

¹⁸ Scott Nicholson, “A Recipe for Meaningful Gamification,” in *Gamification in Education and Business*, ed. Thomas Reiners and Lincoln C. Wood (Cham: Springer, 2015), 1-20.

¹⁹ Carol Ann Tomlinson, *The Differentiated Classroom: Responding to the Needs of All Learners*, 2nd ed. (Alexandria, VA: ASCD, 2014).

D. Conclusions

The implementation of gamification in Grade 4A2 at MIN 4 Nganjuk demonstrated that students' excessive activity does not always need to be treated only as a behavioral problem. When managed through appropriate learning design, excessive energy can become a learning resource that supports participation, collaboration, and classroom engagement.

Gamification improved students' focus by integrating points, missions, badges, leaderboards, and instant feedback into learning activities. Students who previously maintained attention for only about 10-15 minutes were able to focus for approximately 30-40 minutes during gamified learning sessions. Classroom dynamics also changed from disruptive behavior to active and cooperative participation.

The study concludes that gamification can be used as an effective pedagogical strategy to manage excessive student activity and improve concentration in elementary school classrooms. Nevertheless, gamification must be designed carefully so that competition does not dominate the learning process. Teachers should balance rewards with meaningful tasks, collaboration, differentiated learning options, and reflection so that students gradually develop intrinsic motivation and positive learning behavior.

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