

**Gamification as a Strategy to Enhance Learning Motivation and
Argumentative Writing Skills of Eleventh Grade Students at SMA Negeri 1
Sidrap**

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ABSTRACT

The low level of learning motivation and inadequate skills in writing argumentative texts remain major challenges in Indonesian senior high school education. This study investigates the effectiveness of gamification as an innovative strategy to enhance both learning motivation and argumentative text writing skills among grade XI students at SMA Negeri 1 Sidrap. A quasi-experimental design with one-group pretest-posttest was employed. The sample consisted of 35 students from one intact class (out of nine classes/rooms in the relevant grade level). Gamification elements such as points, badges, leaderboards, levels, quests, and immediate feedback were integrated into argumentative writing lessons over eight meetings using a digital learning platform combined with classroom activities. Data were collected through a validated learning motivation questionnaire (based on the ARCS model) and an argumentative text writing test assessed using a holistic rubric covering content, organization, language use, and mechanics. Paired-sample t-test results revealed a statistically significant improvement in both variables. Students' learning motivation scores increased substantially ($p < 0.05$), and their argumentative writing skills improved from an average pretest score of 64.57 to 82.86 in the posttest. Qualitative observations further indicated higher student engagement, collaboration, and persistence during gamified sessions. The findings demonstrate that gamification is an effective pedagogical strategy that simultaneously boosts affective (motivation) and cognitive (writing skills) outcomes. This approach offers practical implications for language teachers seeking to create more engaging and student-centered learning environments in senior high schools.

Keywords: Gamification; Learning Motivation; Argumentative Text Writing; Writing Skills

INTRODUCTION

In the era of 21st-century education, writing skills constitute one of the fundamental literacy competencies essential for students. Writing serves not only as a means of communication but also as a vehicle for developing critical, logical, and systematic thinking abilities. However, field realities indicate that many senior high school students in Indonesia still encounter significant difficulties in developing their writing skills, particularly in crafting argumentative texts. Conventional, monotonous, and teacher-centered writing instruction often results in low student motivation, leading to ineffective, incoherent, and weakly supported written arguments.

Argumentative texts hold a strategic role in the Merdeka Curriculum as they train students to express opinions, defend positions, and analyze current issues with strong logical reasoning. Through these texts, students are encouraged not merely to state their views but also to support them with sound reasons, facts, and convincing rebuttals. Unfortunately, many grade XI senior high school students struggle to construct complete argumentative text structures, develop ideas in depth, and employ effective language free from mechanical errors. This situation is exacerbated by students' low reading interest and limited writing practice.

One of the primary factors contributing to the inadequate development of argumentative writing skills is students' low learning motivation. Weak motivation causes students to become passive, easily bored, and lacking in persistence when faced with writing tasks perceived as difficult and uninteresting. In many schools, including those in South Sulawesi, Indonesian language instruction is still dominated by lecture methods and individual assignments without engaging elements, resulting in an uncondusive classroom atmosphere. Consequently, students fail to perceive the relevance of writing materials to their daily lives or future needs.

SMA Negeri 1 Sidrap, as one of the leading public senior high schools in Sidenreng Rappang Regency with an A accreditation, consists of nine classes (rombels) at grade XI with an average of 35 students per class. Nevertheless, preliminary observations revealed that students at this school face similar challenges. Their learning motivation in the Indonesian language subject, particularly in writing argumentative texts, remains relatively low. Many students experience difficulties in formulating a clear thesis, developing strong arguments, organizing coherent structures, and using appropriate vocabulary and grammar. The average scores of students' writing products prior to intervention frequently fell below the minimum competency standard.

The low levels of motivation and argumentative writing skills not only affect students' academic achievement but also hinder the development of critical thinking and communication abilities required in today's information age. Students who are not adequately trained in constructing sound arguments will face

difficulties in persuasively conveying ideas, both in academic contexts and in broader social life. Therefore, innovative instructional strategies are urgently needed to simultaneously enhance motivation and sharpen writing skills effectively.

Gamification has emerged as one of the promising innovative instructional strategies in the digital era. Gamification refers to the application of game elements such as points, badges, leaderboards, levels, quests, and immediate feedback into non-game learning contexts. This approach can transform writing activities, previously viewed as tedious, into enjoyable, healthily competitive, and meaningful experiences. Numerous studies have demonstrated that gamification can increase student engagement, intrinsic and extrinsic motivation, as well as cognitive learning outcomes, including writing skills.

The implementation of gamification in argumentative text writing instruction is expected to create a more interactive and student-centered learning environment. Through game elements, students are motivated to participate actively, collaborate, and persistently strive to improve the quality of their writing to achieve higher levels or rewards. This approach aligns with technology-based learning principles and the Merdeka Curriculum, which emphasize differentiated instruction and character development. This study aims to examine the effectiveness of gamification as a strategy to improve learning motivation and argumentative text writing skills among grade XI students at SMA Negeri 1 Sidrap. Employing a quasi-experimental one-group pretest-posttest design on one intact class (35 students), this research is expected to provide practical contributions to Indonesian language teachers in developing more engaging and effective instructional models at the senior high school level.

LITERATURE REVIEW

Gamification is defined as the application of game design elements and mechanics in non-game contexts to enhance user engagement and motivation (Deterding et al., 2011; updated frameworks in Krath et al., 2021). In educational settings, gamification incorporates elements such as points, badges, leaderboards, levels, quests, and immediate feedback to transform traditional learning activities into more dynamic and rewarding experiences. This approach has gained significant attention in recent years as an innovative strategy to address student disengagement, particularly in subjects requiring complex cognitive skills like writing. Recent systematic reviews confirm that well-designed gamification can foster both behavioral and psychological changes that support sustained learning efforts (Krath et al., 2021; Vrcelj et al., 2023).

The theoretical foundation of gamification in education is strongly linked to Keller's ARCS Model of Motivational Design, which posits that motivation arises from four key components: Attention, Relevance, Confidence, and Satisfaction. Gamification elements effectively address these components by capturing students' attention through interactive challenges, making learning relevant via meaningful

tasks, building confidence through progressive levels and feedback, and providing satisfaction through rewards and recognition (Fang et al., 2024; Ratinho et al., 2023). Several recent studies have integrated the ARCS model with gamification, demonstrating its effectiveness in enhancing motivational outcomes across various educational levels, including secondary education.

Self-Determination Theory (SDT) further explains the mechanisms of gamification by emphasizing the fulfillment of basic psychological needs: autonomy, competence, and relatedness. When gamified activities offer choices (autonomy), progressive challenges with feedback (competence), and collaborative elements such as leaderboards or team quests (relatedness), students experience higher intrinsic motivation. Empirical evidence from post-2020 research supports that gamification grounded in SDT significantly improves engagement and persistence in learning tasks (Li et al., 2023; Gyedu, 2026).

In the context of writing instruction, gamification has shown promising results in developing argumentative or persuasive writing skills. Guo (2024) introduced a digital gamified platform called *Argument Arena*, which integrates points, leaderboards, and role-playing to support the entire argumentative writing process from idea generation to peer evaluation resulting in enhanced collaborative argumentation and writing quality among students. Similarly, studies on gamified peer feedback and blended gamification approaches report improvements in organization, content development, and language use in student essays (Broome, 2023; Lam et al., revisited in recent applications).

Recent empirical findings indicate that gamification not only boosts affective outcomes but also cognitive performance in writing. Jett (2021) conducted action research on disaffected high school students and found that incorporating challenge, narrative, role-play, and teamwork in argumentative writing units led to significant increases in intrinsic motivation and academic performance. Qualitative data further revealed greater student persistence and collaboration during gamified sessions. These outcomes align with the Theory of Gamified Learning proposed by Landers (2014), which has been widely applied and validated in recent studies (Li, 2023).

Gamification is particularly relevant for senior high school students in Indonesia, where conventional writing instruction often results in low motivation and inadequate argumentative text production. Preliminary studies in vocational and senior high schools demonstrate that digital gamification positively influences students' perceptions of motivation, engagement, and writing skill development in EFL/Indonesian language contexts (Lubis, 2026). Such findings highlight the potential of gamification to address local educational challenges while aligning with the student-centered principles of the Merdeka Curriculum.

Despite its benefits, the effectiveness of gamification depends on careful implementation, including the selection of appropriate game elements and

consideration of contextual factors such as learner characteristics and duration of intervention. Meta-analyses and systematic reviews from 2023–2026 emphasize the importance of theory-driven design (e.g., MDA framework or Werbach's gamification framework) to avoid superficial application that may lead to short-term engagement only (Gyedu, 2026; Vrcelj et al., 2023). Structured gamification tends to yield stronger effects on both motivation and deep learning outcomes.

METHOD

Design and Sample

This study employed a quasi-experimental design using a one-group pretest-posttest model. The design was selected because the research was conducted in an intact classroom setting without a control group, based on the practical conditions of the school. The purpose of this design was to identify changes in students' learning motivation and argumentative text writing skills before and after the implementation of the gamification strategy. The research was conducted during the odd semester of the 2025/2026 academic year at SMA Negeri 1 Sidrap. The population consisted of all eleventh-grade students, comprising nine classes with approximately 35 students in each class. The sample was selected through purposive sampling, resulting in one intact class consisting of 35 students. The sample was chosen based on accessibility, the willingness of the teacher and students to participate, and the representation of student characteristics at the school. All students in the selected class participated actively throughout the research process.

Instruments and Procedures

The instructional treatment was conducted in eight meetings. The gamification strategy incorporated several game elements, including points, badges, leaderboards, leveling systems, writing missions, and immediate feedback. The teaching and learning process combined digital platforms such as Google Classroom, ClassPoint, and simple gamification applications with face-to-face classroom activities. Each meeting focused on developing students' argumentative writing skills through stages such as topic selection, thesis statement formulation, argument development, and complete text composition. The integration of game elements was intended to encourage active participation and healthy competition among students.

Data on students' learning motivation were collected using a validated questionnaire based on Keller's ARCS model, which includes Attention, Relevance, Confidence, and Satisfaction. The questionnaire consisted of closed-ended statements measured using a Likert scale. Meanwhile, students' argumentative writing skills were measured through pretest and posttest writing assessments. The writing tests were evaluated using a holistic scoring rubric covering four aspects: content, organization, language use, and mechanics. Both

instruments underwent content validity evaluation by experts and reliability testing before being administered in the study.

Data Analysis

The data were analyzed using both quantitative and qualitative approaches. Quantitative data were analyzed using a paired-sample t-test with the assistance of SPSS software to determine whether there were statistically significant differences between the pretest and posttest scores in both learning motivation and argumentative writing skills. Prior to hypothesis testing, tests of normality and homogeneity were conducted as prerequisite analyses. Qualitative data obtained from classroom observations were analyzed descriptively to support the quantitative findings, particularly in relation to students' engagement, collaboration, and persistence during the learning activities. In addition, the study considered research ethics by obtaining official permission from the school principal and the English teacher and by maintaining the confidentiality of all student data. All research procedures were conducted in accordance with ethical principles in educational research.

RESULT AND DISCUSSION

The pretest and posttest scores for argumentative text writing skills showed a substantial improvement after the implementation of gamification. Before the intervention, the average pretest score was 64.57 (SD = 7.82), indicating that most students were still at a basic to intermediate level with weaknesses in argument development and organization. After eight meetings of gamified instruction, the average posttest score increased to 82.86 (SD = 6.14). The minimum score rose from 48 to 71, while the maximum score reached 95, reflecting a narrower score distribution and overall better performance.

Table 1. Descriptive Statistics of Argumentative Text Writing Skills

Variable	Pretest Mean (SD)	Posttest Mean (SD)	Mean Difference	Minimum	Maximum
Writing Skills	64.57 (7.82)	82.86 (6.14)	+18.29	48–95	71–95

The paired-sample t-test revealed a statistically significant difference between pretest and posttest writing scores ($t = 12.347$, $df = 34$, $p < 0.001$). The effect size (Cohen's $d = 2.09$) indicated a very large practical effect. These results confirm that the gamification strategy effectively enhanced students' ability to produce well-structured argumentative texts with stronger content, organization, language use, and mechanics. Motivation data collected through the ARCS-based questionnaire also demonstrated notable gains. The overall mean motivation score increased from 2.89 (moderate level) in the pretest to 4.12 (high level) in the posttest on a 5-point Likert scale. All four ARCS components Attention, Relevance, Confidence, and

Satisfaction showed consistent improvement, with the largest gain observed in the Attention and Satisfaction dimensions due to the engaging game elements such as badges and leaderboards.

Table 2. Descriptive Statistics of Learning Motivation Scores based on ARCS Model

ARCS Component	Pretest Mean (SD)	Posttest Mean (SD)	Mean Difference
Attention	2.76 (0.68)	4.23 (0.51)	+1.47
Relevance	2.94 (0.72)	4.05 (0.47)	+1.11
Confidence	2.85 (0.65)	4.08 (0.55)	+1.23
Satisfaction	3.01 (0.71)	4.12 (0.49)	+1.11
Overall Motivation	2.89 (0.69)	4.12 (0.50)	+1.23

The paired-sample t-test for overall motivation scores confirmed statistical significance ($t = 9.876$, $df = 34$, $p < 0.001$) with a large effect size (Cohen's $d = 1.67$). Qualitative observations during the eight meetings recorded higher student participation, frequent peer collaboration during quests, and visible enthusiasm when earning badges or climbing the leaderboard. Normality and homogeneity tests confirmed that the data met the assumptions for parametric testing. No outliers significantly affected the results. These quantitative findings were further supported by field notes indicating increased persistence, especially among initially low-motivated students who actively completed writing missions to reach higher levels. The results clearly indicate that gamification led to meaningful improvements in both cognitive (writing skills) and affective (motivation) domains among the 35 grade XI students at SMA Negeri 1 Sidrap.

The significant increase in argumentative text writing scores from 64.57 to 82.86 aligns with previous studies showing that gamification transforms writing tasks into engaging activities, thereby improving content development, organization, and language accuracy (Guo, 2024; Broome, 2023). The large effect size suggests that the combination of points, quests, and immediate feedback effectively scaffolded the complex process of building logical arguments, which is often challenging for senior high school students under conventional instruction. The improvement in all four aspects of the holistic rubric (content, organization, language use, and mechanics) can be attributed to the progressive leveling system and collaborative quests. Students were motivated to revise their drafts repeatedly to earn higher points or badges, a behavior rarely observed in traditional writing lessons. This finding supports the Theory of Gamified Learning, where game elements direct attention toward instructional content and reinforce desired learning behaviors (Li et al., 2023).

The substantial rise in ARCS motivation scores, particularly in Attention and Satisfaction, confirms that gamification successfully addressed the problem of low student engagement in Indonesian language classes. Badges and leaderboards

created healthy competition and a sense of achievement, while quests made the writing process feel relevant to real-life argumentation skills. These results are consistent with studies integrating the ARCS model with gamification in secondary education (Camacho-Sánchez et al., 2024; Ratinho et al., 2023). Qualitative observations revealed increased collaboration and persistence, supporting Self-Determination Theory (SDT). The elements of autonomy (choice of topics within quests), competence (clear progression through levels), and relatedness (team-based leaderboards) fulfilled basic psychological needs, leading to higher intrinsic motivation. This explains why even lower-performing students showed marked improvement by the end of the eight meetings.

The findings extend the local context by demonstrating that gamification is effective in a typical Indonesian senior high school setting with large classes (average 35 students) and limited resources. The integration of simple digital platforms with classroom activities proved practical and aligned with the student-centered principles of the Merdeka Curriculum, offering a feasible model for other teachers facing similar motivational challenges. However, the one-group pretest-posttest design limits causal claims, as external factors such as increased familiarity with the topic could have contributed to score gains. Future studies should consider adding a control group to strengthen internal validity. Additionally, the novelty effect of gamification may diminish over longer periods, suggesting the need for sustained or varied game elements in future implementations (Gyedu, 2026).

Overall, this study contributes practical evidence that gamification can simultaneously enhance affective and cognitive outcomes in argumentative writing instruction. Teachers can adopt similar elements points, badges, quests, and leaderboards to create more dynamic and motivating learning environments without requiring advanced technology. The results reinforce that well-designed, theory-driven gamification (drawing from ARCS and SDT) offers a promising pedagogical innovation for Indonesian senior high schools, particularly in developing 21st-century writing and critical thinking skills.

CONCLUSION

This study concludes that the gamification strategy is effective in enhancing learning motivation and argumentative text writing skills among grade XI students at SMA Negeri 1 Sidrap. After eight intervention meetings, there was a statistically significant improvement in both research variables. The argumentative text writing skills score increased from an average of 64.57 on the pretest to 82.86 on the posttest ($p < 0.001$), while the learning motivation score based on the ARCS model rose from 2.89 to 4.12 ($p < 0.001$). Qualitative observations also indicated increased active participation, peer collaboration, and student persistence throughout the learning process. These results demonstrate that the application of gamification elements—such as points, badges, leaderboards, levels, quests, and immediate feedback—can create a more enjoyable and meaningful learning experience.

The findings of this study are consistent with the ARCS motivation theory and Self-Determination Theory (SDT), which serve as the foundation for gamification. Gamification successfully fulfilled students' psychological needs for autonomy, competence, and relatedness, thereby increasing intrinsic motivation while simultaneously supporting the development of cognitive skills in constructing logical, coherent, and persuasive argumentative texts. This approach has proven capable of addressing the long-standing issues of low motivation and inadequate writing skills in Indonesian language instruction at the senior high school level, particularly in schools with large class sizes such as SMA Negeri 1 Sidrap. Based on the research results, it is recommended that Indonesian language teachers integrate gamification strategies into argumentative text writing instruction to create a more interactive and student-centered learning environment. Future research is suggested to employ an experimental design with a control group, longer intervention duration, and to examine the effectiveness of gamification on other subjects or different educational levels. In this way, gamification can become a sustainable pedagogical innovation in supporting the implementation of the Merdeka Curriculum in senior high schools.

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