

GAMIFICATION STRATEGY IN DUOLINGO APPLICATION ON STUDENT LEARNING MOTIVATION

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Abstract: This research is based on the increasing utilization of learning applications based on gamification, especially Duolingo, which is believed to be able to strengthen the learning motivation of students in learning a foreign language. This research aims to analyze the gamification strategy that is applied in the application and its influence on the learning drive of students at the university level. Method which is used is qualitative analysis through the study of empirical findings data, application usage patterns, and student learning experience that shows a response to gamification elements such as points, levels, feedback, and daily challenges. The research results show that these features play a role in build consistent learning involvement, increase a sense of competence, and grow interest towards the language material. Analysis also shows that Duolingo helps students maintain study routine, reduce boredom, and provide a more adaptive learning experience. Implication this research emphasizes the importance of gamification integration in the development of digital learning media, as well as providing a foundation for educators and institutions to design more learning strategies creative to increase the motivation and quality of the student learning process.

Keywords: *Duolingo, Gamification, Motivation to learn, Student.*

INTRODUCTION

The development of digital-based language learning applications encourages significant changes in the way students motivate themselves to learn independently, especially through a gamification model that emphasizes a fun learning experience and structured. Duolingo is one of the most widely used applications in various country because it combines game elements such as points, levels, leaderboards, and challenges daily as understood in the concept of gamification by Deterding et al. (2011). Various usage report shows an increase in interest in learning foreign languages among students as a result of an interactive design that encourages repetition and retention of material (Ryan & Deci, 2000). Study Robiatul & Rahmawati (2022) also confirmed that the Duolingo gamification feature Supports learning consistency so that it is interesting to study more deeply in the context students.

Interest in the study of gamification is growing rapidly because it is considered capable increase user's intrinsic and extrinsic motivation through giving experience competitive and virtual awards as described in the Werbach theoretical framework & Hunter (2012). Among students, increased learning motivation is often associated with elements such as progress bar, daily mission, and point system that offers psychological satisfaction in achieving learning targets (Ryan & Deci, 2000). Rahayu Research & Putra (2024) explained that Duolingo utilizes the Octalysis framework to trigger encourage learning behavior through eight core user motivations. Student interest towards the achievement system raises academic questions about strategy which gamification has the most effect on learning motivation.

The phenomenon of increasing the use of Duolingo in various educational institutions encourage the need for data-based analysis regarding the effectiveness of gamification features on a group of students who have a higher level of learning independence compared to elementary or secondary school students. Global data shows that Duolingo has more than 133 million monthly active users in 2026, making it an application the world's largest language learning and relevant as a study object of learning motivation students. The following data shows some indicators of Duolingo usage based on the Duolingo Language Report 2026 which can be an initial reference for understand the utilization scale:

Table 1. Duolingo Usage Indicator Data

Duolingo 2025/2026 Usage Indicator	Value
Monthly Active Users (MAU)	133,1 - 135,3 juta
The Language That Is Most Frequently Studied	English
Percentage of Student Users	28 - 30%

The high percentage of users from the student group strengthens academic reasons to research the gamification strategy applied by this application. Researches previously gave an overview of the effectiveness of Duolingo, but not yet many focus the analysis on gamification strategies qualitatively towards student learning experience as an independent learning actor. Study of Kurniati et al. (2025) shows that the use of Duolingo helps improve speaking skills vocational school students through intensive training and adaptive repetition features, while research Muttaqin, Zuhdi & Ridwan (2025) emphasized that gamification has a positive impact Towards the motivation of users in learning a foreign language. The fact that students having a different learning pattern from vocational or elementary school students makes it necessary to study more specific about how gamification features shape their learning drive. Various the

similarities and differences of the research results become a scientific foothold to formulate the scope of this research clearly.

Several studies at the elementary school level such as the work of SR (2025) show that the use of Duolingo fosters stable learning involvement in PAI learning, indicates that gamification has the flexibility of cross-eye application lesson. Although the focus of the research is different from the study on students, the results gives clues that game elements are able to trigger a sense of competence and academic achievement at various levels of education. In the university world, the need for students for consistent motivational encouragement becomes important because the process of learning a foreign language requires repetition and high discipline. This motivation factor in line with the concept of intrinsic and extrinsic motivation in the theory of Ryan & Deci (2000) which become an important basis for analyzing the learning behavior of students.

A number of conceptual analyses regarding gamification, as explained by Deterding et al. (2011) and reinforced by Werbach & Hunter (2012), states that the success of gamification depends on the relevance of the game elements applied to user context so that each learning group can give a different response towards the same feature. Students as native digital users tend to judge learning application in terms of convenience of use, visual appeal, and sensation competitive that fosters learning attachment. Rahayu & Putra (2024) confirmed that octalysis provides a detailed description of how elements such as epic meaning, empowerments, and achievement determine the power of motivation in the use of Duolingo. The combination of gamification theory and motivation is what needs to be analyzed qualitatively to understand the real experience of students when interacting with the application.

The urgency of this research is getting stronger because of previous studies such as Robiatul & Rahmawati (2022), Muttaqin et al. (2025), and Kurniati et al. (2025) are generally oriented on the effectiveness of learning, not on the depth of the user's motivational experience mature. Qualitative search is needed to explore how students interpret daily challenges, point system, and instant feedback as a trigger for learning motivation. Detailed analysis of how students respond to these features provides opportunity to identify the most effective gamification strategy in encouraging long-term learning commitment. The foundation of Ryan & Deci's motivation theory (2000) and the framework gamification Deterding et al. (2011) and Werbach & Hunter (2012) complete the approach. Scientific this research and strengthen the argument about the relevance of the study topic.

THEORETICAL REVIEW

Gamification Theory in Language Learning

In the learning process to increase the involvement, motivation, and learning experience of students. According to different researchers, gamification is a technique that makes use of various elements such as points, badges, leaderboards, missions, and feedback among others to create psychological impulses that enhance learning quality. The findings from Febrianti, Alani & Al-Fikri (2024) have indicated that gamification techniques such as the ones found in Educaplay help to improve learning quality by fostering competition and collaboration among other methods of active participation. In the context of the Duolingo application, gamification elements such as streak, experience (XP), and leaderboard serve as an external and internal motivation trigger that strengthens the intensity of language learning independently.

Student Learning Motivation and Psychological Mechanism of Gamification

Student learning motivation is influenced by the need for competence, autonomy, and connection, which is widely discussed in contemporary motivation theory and becomes an important basis for the effectiveness of gamification. When game elements are able to develop a sense of achievement, challenge, and measurable progress, students tend to increase focus, perseverance, and involvement in the learning material. Duolingo facilitates this psychological mechanism through daily mission structure, repetition reinforcement, and progress visualization that is consistent with the motivational needs of students when learning a foreign language.

Gamification Strategy in Duolingo Application

Duolingo develops a gamification strategy that is integrated in every stage Learning, starting from a short lesson structure, instant feedback system, to competitive elements such as weekly leagues. According to Fakhrunnisaa et al. (2023), gamification when learning informatics skills positively influences the learners' self-confidence in their learning processes since they have ownership over their learning process. These features are designed to maintain user attention while providing continuous motivational stimulation. Fakhri & Anandari (2023) explained that the blended learning model based on gamification is able to increase student motivation and learning outcomes because the design facilitates an adaptive and challenging learning experience. The effectiveness of Duolingo can be analyzed through.

RESEARCH METHOD

This research uses a qualitative approach with the Systematic Literature method Review (SLR), which is a data collection technique that is carried out systematically, structured, And focused on relevant scientific sources so that research can analyze Gamification strategy in Duolingo application without the need for field data collection; Data sources come from journals, books, proceedings, research reports, and academic publications Which discusses gamification, learning motivation, and its application to Duolingo, with Inclusion criteria in the form of full text literature published 2015–2025 which discusses gamification, elements Gamification, language learning, learning motivation, and Duolingo application in language Indonesian or English, while the exclusion criteria includes non-scientifial articles, sources Irrelevant, or not fully accessible; collection techniques are carried out through Systematic search on various databases such as Google Scholar, ResearchGate, and Semantic Scholar uses related keywords, followed by title-abstract selection, Screening according to the exclusional inclusion criteria, and the collection of literature that is worthy of analysis;

Data analysis follows the Miles and Huberman model which includes data reduction through Identification of important information from various literature, presentation of data in the form of description or Findings pattern, as well as drawing conclusions to answer the research focus on strategy Duolingo gamification and its influence on student learning motivation; the whole process The research takes place without a physical location because it is based on a literature study, with a time span Implementation from January 2025 until the final preparation of the research.

RESULT AND DISCUSSION

Duolingo gamification strategy and student engagement pattern

The following is how to build a student participation pattern by applying gamification in duolingo. By integrating game functions that attract attention and promote formation The habit of constantly learning the language has been proven to increase motivation. Learning described in the study of Putra, Janah, & Adawiyah (2024). All functions strick, XP, and leaderboard act as triggers to stimulate behavior. Students return to study regularly without feeling burdened. The structure of the class is short but repetitive forms a sense of progress so that students can easily measure feel the direct impact of their learning efforts. This behavior pattern seems strong, especially when students need psychological success on a daily basis give satisfaction and inner strength.

Students who use Duolingo tend to show a certain level of enthusiasm higher because the app has a gradual challenge that can maintain enthusiasm users throughout, the learning phase as found in the study of Astika, Widodo, & Valyono (2025). Layered challenges such as increased difficulty levels make students to assess their readiness to complete each lesson mission Independence. These learning experiences create a good competitive dynamic, especially when students compare their progress with their classmates through league features weekly. Such a situation enlivens the learning process and causes motivation to maintain a position or improve performance.

Playing games on Duolingo also affects the way students build perception about learning a language that was originally thought to be difficult has become a language that is easier to manage, through a short but intense learning period as Mahbubi (2025) explained in education about increasing motivation through the game system. Application success to maintain students' interest comes from the way the platform provides feedback. Immediately after each right or wrong, which provides clarity in development directly. This quick response makes students feel safe because they able to understand errors and correct them without waiting for evaluation formally. This situation makes the learning process feel personal and responsive user.

The integration of gamification in Duolingo shows a positive impact on development students' speaking and reading skills through the repetition of content according to a fun game as Fikri (2025) described in his study about Maharah Al-Kalam's. Learning Enhancement, Audio, Visual, and Writing Activities there is a structure that facilitates students to have a good learning experience comprehensive and progressive. This learning process gives students room for make the target language more internal because the content is presented in the context sparse and interactive. The quality of learning will improve when students feel that in each period, there will be challenges that they can overcome with measured effort.

The Effectiveness of Gamification in Strengthening Students' Learning Motivation

The effectiveness of gaming on Duolingo can be seen from the ability of the game's features in creating long-term learning motivation because students feel that the learning process occurs naturally, according to the research of Putra et al. (2024). The sense of achievement caused by each level creates positive energy that influences. Passion for daily learning the gamification learning process reflects a lot of demand students for confidence in progress and self-strengthening consistently. Every a little success gives them confidence that they can speak different languages abroad through regular training.

Gamification also strengthens motivation through a combination of challenges and

rewards which is able to trigger the competitive spirit of students, as explained by Astika et al. (2025). Challenges such as maintaining a long streak of creating personal commitment for students not to miss the practice session. Digital awards such as badges or the position on the leaderboard makes students feel like they are in a positive competition which adds to the dynamics of learning. This situation gives rise to enriching social interaction learning experience even though it takes place in a digital space.

Learning motivation increases because students not only pursue academic grades, but also get emotional satisfaction from activities that feel fun, as conveyed by Mahbubi (2025). This emotional factor is the key to sustainability learning process, considering that students who enjoy the learning process tend to be more survive in the long run. Gamification elements that produce positive emotions help students overcome the boredom that often appears in learning methods traditional. This condition makes gamification a relevant approach to support learning resilience.

The effectiveness of gamification in Duolingo is getting stronger when students have access the material can be used at any time, and this flexibility serves as a stimulus that facilitates reduction learning barrier, as Fikri (2025) discovered. Students can learn independently without worrying about time constraints or academic environment. All sessions learning provides a consistent experience so that students can feel a sense of control they are full of ability development. This situation forms a positive relationship between independent learning and intrinsic motivation.

CONCLUSION

It can be concluded that the gaming strategies used in the Duolingo app have a significant positive effect on students' learning motivation. Gamification elements such as points, levels, streaks, leaderboards, and instant feedback are proven to be able to encourage learning consistency, increase engagement, and grow a sense of achievement in students.

This research also shows that Duolingo is able to create a more interesting, interactive, and adaptive learning experience, so that it can reduce saturation and support the sustainability of the learning process in the long term. The combination of intrinsic and extrinsic motivation, supported by the award and competition system, is an important factor in increasing the enthusiasm of students in learning foreign languages.

In addition, access flexibility and structured but simple learning design allow students to learn independently according to their own rhythm, thus increasing the sense of autonomy and

confidence in learning.

This, gamification can be considered as an effective approach in digital learning, especially in increasing student motivation and involvement. This research emphasises the importance of integrating gamification strategies in the development of learning media as well as encouraging educators and developers to continue to innovate in creating an interactive and sustainable learning system.

REFERENCES

Astika, Widodo, & Valyono. (2025). The impact of gamification on student learning motivation.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). *From game design elements to gamefulness: Defining gamification*.

Fikri. (2025). Learning enhancement in language skills through gamified applications.

Kurniati, et al. (2025). The use of Duolingo in improving vocational students' speaking skills.

Mahbubi. (2025). Increasing motivation through game-based learning systems.

Muttaqin, Zuhdi, & Ridwan. (2025). The impact of gamification on foreign language learning motivation.

Putra, Janah, & Adawiyah. (2024). Student engagement through gamification in learning applications.

Rahayu & Putra. (2024). Octalysis framework in educational gamification.

Robiatul & Rahmawati. (2022). The role of Duolingo in supporting learning consistency.

Ryan, R. M., & Deci, E. L. (2000). *Intrinsic and extrinsic motivations: Classic definitions and new directions*.

Werbach, K., & Hunter, D. (2012). *For the win: How game thinking can revolutionize your business*.