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FOSTERING INTRINSIC MOTIVATION IN EFL LEARNERS THROUGH DUOLINGO'S GAMIFICATION: A QUALITATIVE STUDY

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Abstract

Motivation plays a crucial role in English as a Foreign Language (EFL) learning, particularly in Indonesian contexts where learners have limited exposure to English outside the classroom. Although gamified language learning applications such as Duolingo are widely used in Indonesia, previous studies have largely emphasized extrinsic motivation and quantitative approaches. This study aimed to explore how Duolingo's gamification fosters intrinsic motivation in EFL learners through the lens of Self-Determination Theory, focusing on autonomy, competence, and relatedness. Using a descriptive qualitative design, this study involved ten seventh-semester EFL university students from Universitas Negeri Semarang, Indonesia, who were active Duolingo users. Data were collected through semi-structured interviews and an SDT-based questionnaire and analyzed using thematic analysis. The findings indicate that Duolingo's gamification fosters intrinsic motivation by supporting self-directed learning, providing clear indicators of progress, and creating an enjoyable learning experience. Autonomy and competence emerged as the most influential psychological needs, while relatedness showed varied effects across learners. Overall, this study offers qualitative insights into how gamified mobile-assisted language learning can support intrinsic motivation in Indonesian EFL higher education contexts.

Keyword: Duolingo; EFL learners; gamification; intrinsic motivation; Self-Determination Theory

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INTRODUCTION

Motivation has long been recognized as a key factor in successful language learning. Guay (2022) emphasizes that learners who lack motivation often struggle to sustain engagement and achieve their learning goals, particularly in foreign language contexts. In English as a Foreign Language (EFL) contexts, motivation becomes even more critical because learners generally have limited exposure to English outside formal learning settings. Consequently, maintaining students' motivation continues to be a major concern for both educators and researchers in EFL education. In the Indonesian EFL context, maintaining learners' motivation remains a persistent challenge. English is mainly learned as a school subject, and many learners have limited opportunities to use English meaningfully outside formal classroom settings. As a result, learners' engagement often depends heavily on instructional approaches and learning media that can sustain their interest beyond compulsory learning requirements.

In response to this issue, various teaching approaches have been introduced to make language learning more engaging and meaningful. One approach that has attracted growing interest is gamification. Gamification is commonly defined as the integration of game elements, such as points, levels, rewards, and leaderboards, into non-game contexts (Suh et al., 2018). From a theoretical standpoint, gamification is expected to enhance learner engagement and motivation by creating learning experiences that are more interactive and enjoyable.

Previous research has demonstrated that gamification can positively influence engagement and motivation across various fields, including education and health (Cechetti et al., 2019). In the context of language learning, many gamified mobile applications have been developed to encourage learner participation and motivation. For instance, Elaish et al. (2019) reported that a mobile game-based application was effective in enhancing students' motivation to learn English vocabulary. Similarly, Zhou (2024) found that gamified language learning had positive effects on Chinese EFL learners.

Among existing gamified language learning platforms, Duolingo has emerged as one of the most popular applications. Its popularity can be attributed to its free access, user-friendly design, and short, interactive lessons supported by gamification features. Several studies have suggested that Duolingo can contribute positively to learners' motivation and engagement. Salsabila Lahji (2024) found that Duolingo supported learners' motivation in English learning, while Zeng & Fisher (2024) reported that using Duolingo outside the classroom increased intrinsic motivation among Chinese junior high school students.

Despite these positive findings, some studies have highlighted potential limitations of gamification. Hadi Mogavi et al. (2022) pointed out that poorly designed gamification may result in negative learning experiences. Likewise, Kode (2025) discussed several challenges related to the implementation of gamification and offered recommendations for its effective use in educational contexts. These studies indicate that the effectiveness of gamification largely depends on how learners perceive and experience it.

Although research on gamification and Duolingo has continued to grow, much of the existing literature tends to emphasize extrinsic motivation, such as learning driven by rewards,

points, or competition (Daliranfirouz et al., 2024; Gao, 2024). While extrinsic motivation can encourage participation, it may not be sufficient to support sustained and long-term engagement in learning.

Self-Determination Theory (SDT) places greater emphasis on intrinsic motivation, which refers to engaging in learning activities due to interest, enjoyment, and personal satisfaction (Guay, 2022). According to SDT, Jeon (2022) explains that intrinsic motivation is more likely to emerge when learners experience autonomy, competence, and relatedness in their learning process. In relation to competence, Grabner-Hagen & Kingsley (2023) highlight that learners' perceptions of progress and effectiveness play an important role in sustaining motivation and continued engagement in learning activities. Although research on Duolingo and gamified language learning has increased, much of the existing literature relies on quantitative approaches that focus on measuring motivation levels or learning outcomes. Fewer studies have examined learners' intrinsic motivation through qualitative exploration of their lived experiences, particularly in relation to the psychological needs proposed in Self-Determination Theory.

In response to this gap, the present study aims to explore how Duolingo's gamification fosters intrinsic motivation in EFL learners by focusing on the psychological needs of autonomy, competence, and relatedness. This study is guided by two main research questions that examine Duolingo's role in fostering intrinsic motivation in EFL learners. The first research question investigates how Duolingo's gamification contributes to fostering intrinsic motivation among EFL learners. The second research question explores how EFL learners experience the three psychological needs proposed in Self-Determination Theory, namely autonomy, competence, and relatedness, while using Duolingo.

The novelty of this study lies in its focus on learners' intrinsic motivation in using Duolingo, examined through the lens of Self-Determination Theory and grounded in EFL learners' qualitative experiences within an Indonesian higher education context. By adopting a descriptive qualitative approach and focusing on intrinsic motivation through the lens of Self-Determination Theory, this study provides insights that complement existing quantitative findings and contribute to a deeper understanding of motivation in gamified EFL learning contexts.

METHOD

This study adopted a descriptive qualitative design to investigate how Duolingo's gamification fosters intrinsic motivation among EFL learners. This design was considered suitable for answering the research questions, as the study aimed to explore learners' experiences and perceptions rather than to measure variables or test hypotheses. A qualitative approach allowed the researcher to gain an in-depth understanding of how learners interpret their motivation while using Duolingo, which aligns with the exploratory nature of the research questions.

Descriptive qualitative research focuses on providing a clear and comprehensive account of a phenomenon as experienced by participants, using language that closely reflects their

viewpoints (Sandelowski, 2000). This design was therefore appropriate for describing how Duolingo's gamification features were experienced in relation to intrinsic motivation. Furthermore, the design enabled the integration of participants' experiences with the theoretical framework of Self-Determination Theory, particularly the concepts of autonomy, competence, and relatedness (Doyle et al., 2020). Overall, the chosen design was well suited to address the purpose of the study and to produce findings that are grounded in learners' real experiences.

A purposive sampling technique was employed in this study. This technique was considered appropriate because the participants were selected intentionally based on specific criteria relevant to the research objectives. The inclusion criteria were as follows: (1) the participants were seventh-semester EFL university students from Universitas Negeri Semarang, (2) they had been actively using Duolingo for English learning since their first semester of study, and (3) they used Duolingo independently outside formal classroom instruction. These criteria ensured that all participants had sufficient and sustained experience with Duolingo to reflect meaningfully on their motivational experiences.

The sample size was intentionally limited to ten participants to allow for an in-depth exploration of learners' experiences while still capturing a range of perspectives. In qualitative research, a smaller and carefully selected sample is appropriate when the goal is to obtain rich and detailed data rather than to generalize findings to a broader population. Selecting participants at a similar academic level and with comparable learning backgrounds helped reduce variations related to differences in proficiency level or learning context. This sampling approach ensured that the study focused more clearly on how Duolingo's gamification was experienced in relation to intrinsic motivation.

Data were collected using two techniques to allow for triangulation and to enhance the credibility of the findings. The first data collection technique employed in this study was a semi-structured interview. This technique was chosen because it allows for in-depth exploration of participants' personal experiences while providing sufficient flexibility to probe emerging issues during the interview process. A total of twelve open-ended questions were developed to guide the interviews. The questions were designed based on the core constructs of Self-Determination Theory, namely autonomy, competence, and relatedness, and were aligned with the research questions of the study.

The interview questions were organized into three main sections. Questions related to autonomy explored the extent to which learners felt a sense of control and choice in their learning when using Duolingo. Sample questions included: "Do you feel free to choose what and when to study on Duolingo?" and "How does this freedom affect your desire to study English?" These questions aimed to capture learners' perceptions of self-directed learning and voluntary engagement.

Questions focusing on competence examined learners' feelings of progress, effectiveness, and confidence in learning English through Duolingo. Examples of questions included: "Do you feel Duolingo helps you notice progress or feel more capable in English?" and "How does seeing progress influence your confidence or willingness to continue?" These questions were

intended to understand how perceived improvement and feedback supported learners' intrinsic motivation.

Finally, questions related to relatedness explored learners' sense of connection with others while using Duolingo. Sample questions included: "Do you feel connected to other learners through Duolingo features?" and "If you feel connected, how does it affect your motivation to keep learning?" In addition to these core questions, follow-up prompts were used when necessary to encourage participants to elaborate on their responses. All interviews were conducted individually and audio-recorded with participants' consent to ensure accuracy in data transcription and analysis. Each interview lasted approximately 15–20 minutes, a duration considered sufficient for semi-structured interviews focusing on specific experiences and perceptions when participants are familiar with the topic being discussed. Duration decisions for semi-structured interviews are often guided by methodological considerations that balance depth of information with respondent comfort, and qualitative research texts commonly recognize that interview lengths of up to one hour are typical for in-depth data collection in studies with focused research questions (Adams, 2015).

The second data collection instrument was a Self-Determination Theory (SDT)-based questionnaire designed to capture learners' perceptions of autonomy, competence, relatedness, and intrinsic motivation when using Duolingo. The questionnaire consisted of 16 items distributed across the three basic psychological needs to ensure comprehensive coverage of each construct. The items were adapted from established SDT-related instruments assessing basic psychological need satisfaction, grounded in the theoretical framework proposed by Ryan and Deci (2000), which has been widely applied and empirically supported in motivation research.

The questionnaire included statements reflecting learners' perceived autonomy, competence, and relatedness during Duolingo use. Autonomy-related items addressed learners' sense of freedom in managing their learning process, such as "I use Duolingo because I enjoy having control over my learning progress." Competence-related items focused on learners' perceived progress and capability, for example, "Achieving higher levels or maintaining streaks makes me feel more confident in my ability to learn English." Relatedness-related items captured learners' perceptions of social connection, including statements such as "I feel connected to other learners when I use Duolingo." Participants responded to all items using a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

The questionnaire was not intended for statistical hypothesis testing but was used to provide an initial overview of participants' motivational tendencies and to support triangulation with the qualitative interview data. By complementing in-depth interview responses with self-reported motivational perceptions, this instrument helped clarify the types of data recorded and strengthened the credibility of the qualitative findings.

Ethical considerations were carefully addressed throughout the study. Prior to data collection, all participants were informed about the purpose of the research, the voluntary nature of their participation, and their right to withdraw at any time without penalty. Written informed

consent was obtained from all participants. To protect confidentiality, participants' identities were anonymized using pseudonyms, and all data were used solely for research purposes.

The data were analyzed using thematic analysis following the framework proposed by Braun and Clarke (2006). The analysis began with reading and re-reading the interview transcripts to achieve familiarity with the data. Initial codes were then generated by identifying meaningful segments related to learners' motivation and experiences with Duolingo. These codes were grouped into broader categories based on similarities in meaning, which were subsequently organized into overarching themes representing recurring patterns across participants' accounts. The final stage involved interpreting the themes in relation to the concepts of autonomy, competence, and relatedness from Self-Determination Theory, allowing the researcher to understand how Duolingo's gamification supported intrinsic motivation in EFL learners.

To ensure the trustworthiness of the study, several strategies were implemented throughout the analytical process. Member checking was conducted by summarizing key points from the interview data and asking participants to confirm the accuracy of the interpretations. In addition, peer debriefing was carried out through discussions with an academic peer to review the coding process and the development of themes. An audit trail was maintained by documenting data collection procedures, coding decisions, and theme refinement. Together, these strategies enhanced the credibility and dependability of the qualitative analysis and ensured that the findings were closely grounded in the collected data.

RESULTS AND DISCUSSION

Duolingo is a widely used mobile-assisted language learning application that integrates gamification elements such as points, levels, streaks, leaderboards, and immediate feedback into language practice activities. These features are designed to encourage frequent engagement and sustain learners' motivation through game-like mechanisms. While Duolingo offers advantages such as accessibility, flexibility, and low learning pressure, previous studies have also noted limitations, including repetitive tasks and limited opportunities for authentic interaction. Against this background, the present study examines how Duolingo's gamification features are experienced by EFL learners and how they contribute to intrinsic motivation when viewed through the lens of Self-Determination Theory (SDT).



Figure 1. Duolingo Logo

Intrinsic Motivation in Using Duolingo

The findings indicate that Duolingo's gamification played a significant role in fostering learners' intrinsic motivation. A clear pattern emerged from the interview data, in which most participants (8 out of 10) described their experience of learning English with Duolingo as enjoyable, engaging, and less stressful than conventional learning contexts. Participants repeatedly emphasized that the learning process felt more like a game than a formal academic task, which encouraged voluntary and sustained engagement.

Several participants reported that they opened Duolingo not because of external demands or obligations, but because they personally enjoyed the learning experience.

One participant stated,

"I open Duolingo because it feels fun, not like studying. Sometimes I don't even think about the points."

Another participant expressed a similar view, explaining that Duolingo had become part of their daily routine simply because it was enjoyable and easy to access. These responses indicate that enjoyment and interest, rather than external rewards, were central drivers of continued engagement.

From an SDT perspective, these findings suggest that Duolingo successfully supported intrinsic motivation by creating positive emotional experiences associated with learning. Intrinsic motivation, as conceptualized by SDT, emerges when learners engage in an activity for inherent satisfaction rather than for external outcomes. In this study, learners' enjoyment of short, game-like tasks appeared to lower anxiety and reduce the perception of learning as an obligation, thereby strengthening intrinsic motivation. This finding aligns with Guay (2022), who emphasizes that enjoyable and autonomy-supportive learning environments are more likely to foster sustained intrinsic motivation in educational contexts.

Interestingly, a smaller group of participants (2 out of 10) acknowledged that their initial engagement with Duolingo was driven by extrinsic factors such as points, streaks, or curiosity. However, these participants reported a gradual shift toward enjoyment and personal satisfaction over time. This shift suggests that gamification features may function as entry points that facilitate the internalization of motivation, rather than merely reinforcing extrinsic regulation. Thus, Duolingo's gamification appears to support not only initial engagement but also the development of more self-determined forms of motivation.

Beyond describing learners' enjoyment, these findings suggest a deeper motivational process in which Duolingo's gamification facilitates the internalization of learning goals. Within the Self-Determination Theory framework, intrinsic motivation is not merely a positive emotional state but reflects a condition in which learners experience learning as inherently satisfying and self-endorsed. The fact that most participants reported using Duolingo voluntarily, without explicit concern for points or rewards, indicates that their engagement was regulated by interest rather than external contingencies.

This finding extends previous research on gamified language learning, which has often emphasized extrinsic motivators such as badges, scores, and streaks. While such features are frequently criticized for fostering surface-level engagement, the present study demonstrates that gamification can also serve as a pathway toward more self-determined motivation when learners perceive the activity as enjoyable and meaningful. In this sense, Duolingo's game-like structure appears to function not as an end in itself but as a medium that reshapes learners' emotional relationship with language learning.

From a theoretical standpoint, this supports SDT's assertion that intrinsic motivation is most likely to emerge when learning environments minimize pressure and maximize enjoyment. Rather than contradicting earlier quantitative findings on extrinsic rewards, this study complements them by showing how extrinsic game elements may gradually lose salience as learners' motivation becomes more internalized.

Autonomy

Autonomy emerged as one of the most consistently reported themes across participants' accounts. Nearly all participants (9 out of 10) emphasized that the freedom to choose when, where, and how long to study significantly influenced their motivation to continue using Duolingo. Participants frequently contrasted this flexibility with classroom-based learning, which they perceived as more structured and time-restricted.

One participant explained,

"I like that I can study whenever I want, even just for five minutes before sleeping."

Another participant highlighted the importance of being able to choose specific lessons or skills based on personal needs, such as vocabulary or grammar. This sense of control led participants to feel more responsible for their own learning progress and reduced feelings of pressure or obligation.

In addition to temporal flexibility, participants highlighted the ability to select specific skills or lessons based on personal needs, such as focusing on vocabulary or grammar. This sense of control encouraged learners to take greater responsibility for their learning and reduced feelings of pressure. From an SDT perspective, such experiences reflect autonomy-supportive conditions, where learners perceive their actions as self-initiated rather than externally imposed.

These findings reinforce previous research indicating that autonomy plays a crucial role in sustaining intrinsic motivation in language learning. Jeon (2022) argues that when learners experience choice and volition, they are more likely to internalize learning goals and maintain long-term engagement. In the present study, autonomy did not merely function as convenience; rather, it shaped how learners perceived their relationship with learning itself, transforming Duolingo into a personally meaningful learning space.

However, one participant reported that excessive freedom occasionally led to inconsistency, particularly during busy academic periods. This suggests that autonomy alone may not guarantee sustained engagement without adequate self-regulation skills. Nevertheless,

the overall pattern indicates that autonomy was a central motivational resource that supported learners' intrinsic motivation and continued use of Duolingo.

The prominence of autonomy in this study highlights its central role not only as a contextual feature but as a psychological mechanism shaping learners' motivational quality. In SDT, autonomy refers to the experience of volition and psychological freedom, rather than mere independence. Participants' emphasis on choosing when and how to study suggests that Duolingo supported autonomy by allowing learners to align learning activities with their personal rhythms, preferences, and daily routines.

This finding resonates with earlier studies in language learning that argue autonomy-supportive environments foster deeper engagement and persistence. However, the present study adds nuance by illustrating how autonomy operates in mobile-assisted learning contexts. Unlike classroom settings, where autonomy is often constrained by curriculum and schedules, Duolingo enables micro-level autonomy, such as studying for short periods or selectively focusing on specific skills. This flexibility appears to lower psychological resistance and reduce the perception of learning as an imposed obligation.

At the same time, the report from one participant regarding inconsistency suggests that autonomy may interact with learners' self-regulatory capacities. This supports SDT's view that autonomy alone is insufficient if not accompanied by competence and structure. Thus, autonomy in gamified learning should be understood as a dynamic construct that empowers learners while still requiring supportive design features to sustain engagement.

Competence

Competence-related experiences were also strongly reflected in the data. Most participants (8 out of 10) reported feeling more capable and confident in their English learning as a result of using Duolingo. This sense of competence was closely linked to visible progress indicators, such as completing levels, receiving immediate feedback, and recognizing improvement over time.

One participant stated,

"When I finish a level, I feel proud because I can see that I'm improving."

Another participant mentioned that repeated exposure to vocabulary and sentence structures helped them recognize gradual improvement, which increased their confidence to continue learning. These experiences reinforced learners' belief that they were capable of mastering the learning material.

Duolingo's design provides continuous feedback and clear indicators of progress, which appeared to reinforce learners' perceptions of effectiveness. According to SDT, competence satisfaction is achieved when individuals feel capable of mastering challenges and achieving desired outcomes. In this study, learners' confidence grew as they successfully completed tasks and noticed incremental improvement, which, in turn, motivated them to persist.

These findings are consistent with Grabner-Hagen & Kingsley (2023), who highlight the role of feedback and progress visualization in enhancing learners' confidence and persistence

in digital learning environments. However, the data also revealed a limitation: two participants noted that repetitive or overly easy tasks reduced their sense of challenge and engagement. This suggests that while competence support is crucial, maintaining an optimal balance between challenge and skill is necessary to sustain motivation over time. Overall, competence emerged as a strong motivational factor that complemented autonomy in fostering intrinsic motivation.

The strong emphasis on competence reflects the importance of perceived effectiveness in sustaining intrinsic motivation. According to SDT, competence satisfaction occurs when individuals feel capable of mastering challenges and achieving meaningful outcomes. In this study, Duolingo's immediate feedback and progress indicators played a critical role in reinforcing learners' perceptions of improvement, thereby strengthening their motivation to persist.

Importantly, competence in this context was not tied to formal assessment or comparison with institutional standards, but to personal benchmarks of progress. This aligns with SDT's conceptualization of competence as an internal judgment of effectiveness rather than an externally validated achievement. By allowing learners to observe incremental progress, Duolingo helped transform learning into a series of achievable goals, which reduced anxiety and increased confidence.

However, participants' comments about repetitive or overly easy tasks point to a potential limitation in gamified learning design. SDT posits that competence is optimally supported when challenges are well matched to learners' skill levels. When tasks fail to evolve in complexity, the motivational benefits of competence may diminish. This finding echoes previous critiques of gamified applications that prioritize consistency over adaptive challenge, suggesting that sustaining intrinsic motivation requires careful calibration of difficulty levels.

Relatedness

Compared to autonomy and competence, relatedness played a more moderate but still meaningful role in learners' motivation. Around half of the participants (5 out of 10) reported feeling some form of social connection through Duolingo features such as leaderboards, streak comparisons, or awareness of friends' progress.

One participant stated,

"Seeing my friends' scores makes me want to keep learning so I don't fall behind."

Another participant explained that although they did not interact directly with other learners, knowing that others were learning at the same time created a sense of shared experience. This indirect form of social connection contributed to motivation, particularly through friendly competition.

Compared to autonomy and competence, relatedness played a more moderate but still meaningful role in learners' motivation. Approximately half of the participants (5 out of 10) reported feeling socially motivated through features such as leaderboards, streak comparisons, or awareness of friends' progress. One participant remarked, *"Seeing my friends' scores makes*

me want to keep learning so I don't fall behind." Even in the absence of direct interaction, social comparison created a sense of shared learning experience.

From an SDT perspective, relatedness does not necessarily require close interpersonal interaction; rather, it involves feeling connected or socially embedded in an activity. In this study, minimal social cues, such as knowing that others were also learning, were sufficient to motivate some learners. This finding supports Zeng and Fisher (2024), who argue that social awareness in gamified environments can enhance motivation through indirect forms of relatedness.

However, the remaining participants viewed Duolingo primarily as an individual learning tool and did not consider social features as central to their motivation. This variation highlights that the impact of relatedness may depend on individual preferences and learning orientations. While relatedness was not universally influential, it functioned as a complementary motivational factor for some learners, reinforcing engagement through social comparison and shared goals.

The varied role of relatedness observed in this study underscores the contextual nature of social motivation in gamified learning environments. While some learners were motivated by social comparison and awareness of others' progress, others perceived Duolingo as a primarily individual learning tool. This divergence suggests that relatedness in digital contexts may function differently from traditional classroom interactions.

From an SDT perspective, relatedness does not necessitate direct communication but involves feeling connected to a broader learning community. In this study, even minimal social cues—such as leaderboards or streak visibility—were sufficient to evoke a sense of shared participation for some learners. This supports the argument that indirect forms of social presence can fulfill relatedness needs, particularly in asynchronous and mobile learning settings.

At the same time, the limited impact of relatedness for some participants indicates that autonomy and competence may take precedence in self-paced digital learning. Rather than viewing this as a weakness, it highlights the flexibility of SDT in explaining individual differences in motivational orientations. Gamified applications like Duolingo may therefore benefit from offering optional social features that support relatedness without imposing social pressure on learners who prefer solitary learning experiences.

CONCLUSION

This study explored how Duolingo's gamification fosters intrinsic motivation in EFL learners through the lens of Self-Determination Theory. The findings indicate that Duolingo supports intrinsic motivation by creating an enjoyable and flexible learning environment that encourages learners to engage voluntarily. In particular, autonomy and competence emerged as the most influential factors, as learners valued the freedom to manage their own learning pace and the sense of progress gained through visible feedback. Relatedness played a more variable role, with some learners feeling motivated by social features while others perceived learning as a more individual process.

By adopting a descriptive qualitative design, this study contributes to existing research by providing an in-depth understanding of learners' lived experiences with gamified language learning applications. Unlike many previous studies that emphasize quantitative outcomes or extrinsic motivation, this research highlights how intrinsic motivation develops when learners' psychological needs are supported. The findings extend the application of Self-Determination Theory to mobile-assisted language learning contexts and offer qualitative evidence that complements earlier quantitative studies on Duolingo and educational gamification.

From a practical perspective, these findings suggest several pedagogical implications for EFL instruction and educational technology design. For EFL lecturers, integrating gamified applications such as Duolingo as supplementary learning tools may help support students' autonomy and competence by allowing flexible, self-paced practice outside the classroom. Rather than positioning gamification solely as a reward-based strategy, instructors can encourage learners to reflect on personal progress and enjoyment to strengthen intrinsic motivation. For application developers, the results highlight the importance of balancing game elements with meaningful feedback and adaptive challenges to sustain learners' sense of competence, while offering optional social features to accommodate diverse motivational preferences.

This study is limited by its small sample size and focus on university students from a single institution, which may restrict the generalizability of the findings. Future research is recommended to involve more diverse participant groups and to combine qualitative and quantitative approaches in order to further examine how gamification can support intrinsic motivation across different EFL learning contexts.

BIBLIOGRAPHY

- Adams, W. C. (2015). Conducting semi-structured interviews. *Handbook of practical program evaluation*, 492-505. <https://doi.org/10.1002/9781119171386.ch19>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Cechetti, N. P., Bellei, E. A., Biduski, D., Rodriguez, J. P. M., Roman, M. K., & De Marchi, A. C. B. (2019). Developing and implementing a gamification method to improve user engagement: A case study with an m-Health application for hypertension monitoring. *Telematics and Informatics*, 41, 126–138. <https://doi.org/10.1016/j.tele.2019.04.007>
- Daliranfirouz, E., Amiryousefi, M., Geld, R. N., & Ansari, D. N. (2024). Gamification and the Duality of Extrinsic and Intrinsic Motivation. *Journal of English Language Teaching and Learning*, 16(33), 135–150. <https://doi.org/10.22034/elt.2024.60736.2615>
- Doyle, L., McCabe, C., Keogh, B., Brady, A., & McCann, M. (2020). An overview of the qualitative descriptive design within nursing research. *Journal of Research in Nursing*, 25(5), 443–455. <https://doi.org/10.1177/1744987119880234>

- Elaish, M. M., Ghani, N. A., Shuib, L., & Al-Haiqi, A. (2019). Development of a Mobile Game Application to Boost Students' Motivation in Learning English Vocabulary. *IEEE Access*, 7, 13326–13337. <https://doi.org/10.1109/ACCESS.2019.2891504>
- Gao, F. (2024). Advancing Gamification Research and Practice with Three Underexplored Ideas in Self-Determination Theory. *TechTrends*, 68(4), 661–671. <https://doi.org/10.1007/s11528-024-00968-9>
- Grabner-Hagen, M. M., & Kingsley, T. (2023). From badges to boss challenges: Gamification through need-supporting scaffolded design to instruct and motivate elementary learners. *Computers and Education Open*, 4. <https://doi.org/10.1016/j.caeo.2023.100131>
- Guay, F. (2022). Applying Self-Determination Theory to Education: Regulations Types, Psychological Needs, and Autonomy Supporting Behaviors. *Canadian Journal of School Psychology*, 37(1), 75–92. <https://doi.org/10.1177/08295735211055355>
- Hadi Mogavi, R., Guo, B., Zhang, Y., Haq, E. U., Hui, P., & Ma, X. (2022). When Gamification Spoils Your Learning: A Qualitative Case Study of Gamification Misuse in a Language-Learning App. *L@S 2022 - Proceedings of the 9th ACM Conference on Learning @ Scale*, 175–188. <https://doi.org/10.1145/3491140.3528274>
- Jeon, J. (2022). Exploring a self-directed interactive app for informal EFL learning: a self-determination theory perspective. *Education and Information Technologies*, 27(4), 5767–5787. <https://doi.org/10.1007/s10639-021-10839-y>
- Kode, O. (2025). GAMIFICATION IN EDUCATION: REVIEW OF CHALLENGES AND RECOMMENDATIONS FOR EFFECTIVE PRACTICE. *International Journal on Cybernetics & Informatics*, 14(4), 13–28. <https://doi.org/10.5121/ijci.2025.140402>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Salsabila Lahji. (2024). Improving English Learning Motivation With the English App Duolingo. *Morfologi: Jurnal Ilmu Pendidikan, Bahasa, Sastra Dan Budaya*, 2(5), 194–203. <https://doi.org/10.61132/morfologi.v2i5.947>
- Sandelowski, M. (2000). Focus on research methods: Whatever happened to qualitative description? *Research in Nursing and Health*, 23(4), 334–340. [https://doi.org/10.1002/1098-240x\(200008\)23:4<334::aid-nur9>3.0.co;2-g](https://doi.org/10.1002/1098-240x(200008)23:4<334::aid-nur9>3.0.co;2-g)
- Suh, A., Wagner, C., & Liu, L. (2018). Enhancing User Engagement through Gamification. *Journal of Computer Information Systems*, 58(3), 204–213. <https://doi.org/10.1080/08874417.2016.1229143>

Zeng, C., & Fisher, L. (2024). Opening the “Black Box”: How Out-of-Class Use of Duolingo Impacts Chinese Junior High School Students’ Intrinsic Motivation for English. *ECNU Review of Education*, 7(2), 283–307. <https://doi.org/10.1177/20965311231171606>

Zhou, S. (2024). Gamifying language education: the impact of digital game-based learning on Chinese EFL learners. *Humanities and Social Sciences Communications*, 11(1). <https://doi.org/10.1057/s41599-024-04073-3>