
Title: Reward Systems on User Motivation and Retention for Language Learning Apps

Author(s): Teu, Yu Tian; Wong, Chui Yin

Affiliation: The Design School, Faculty of Innovation and Technology, Taylor's University, Malaysia.

Email address (to coincide with author's name): 0371923@sd.taylors.edu.my, chuiyin.wong@taylors.edu.my

Abstract (200 words):

The rise of online learning has made language learning apps widely accessible, but many users abandon them due to low motivation. While gamification reward systems have been suggested as a way to boost motivation and retention, their effectiveness in encouraging long-term learning remains unclear. The purpose of this research is to explore how reward systems influence user motivation and retention in language learning apps. A quantitative research method using an online survey was employed, collecting 85 responses. Key factors analyzed included demographics, app usage patterns, user motivations, and preferences for reward types. Most participants were young adults, mainly female, with higher education levels. The most widely used language learning apps were Duolingo, Babbel, and Memrise, with English, Japanese, and Korean as the most frequently learned languages. Findings indicate that gamified rewards such as streaks, badges, and unlocking new features can motivate users, but lack of time and declining motivation were major reasons for discontinuation. Recommendations include refining reward systems, enhancing engagement through meaningful content, and providing flexible learning options. This study offers insights for designing more effective gamification in language learning apps to sustain motivation and improve user retention.

Keywords: Mobile-Assisted Language Learning (MALL), Reward Systems, Gamification, Motivation, User Retention, Self-Directed Learning

Introduction (200 words):

The rapid growth of online education in recent years has led to a highly crowded market for mobile language learning applications. Learners choose these apps to study a second language as they are easily accessible, without concerns such as distance, timing, or budget constraints (Xu & Richardson, 2024). However, self-learning requires motivation and determination, and many people give up after a few days before achieving their goals. This low user retention rate shows a weakness in these systems and limits their ability to support users in achieving language proficiency.

One solution to the problem of user retention is gamification, specifically reward systems used within the app. In language learning applications, a reward system usually consists of features such as streaks, badges, leaderboards, points, and other gamified components (Zhao & Guo, 2019). These aim to increase motivation by creating a feeling of accomplishment, competition, and advancement. To improve user motivation, retention, and engagement, many popular applications such as Duolingo, Falou, Memrise, and Busuu have adopted reward systems. Obtaining rewards during the learning journey could improve user satisfaction and make the application more dynamic and engaging, promoting continuous commitment and regular practice habits.

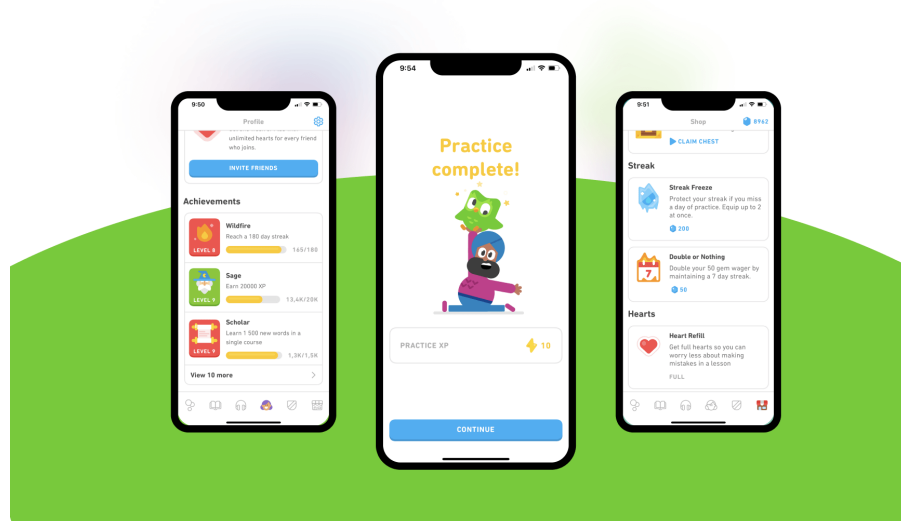


Figure 1. Duolingo – popular gamified language learning app

Problem Statement (200–300 words):

There are currently insufficient insights into how reward mechanisms specifically affect user motivation and retention in mobile language learning apps, even though gamified reward systems are frequently used in these applications. Recent research has provided mixed perceptions about the effectiveness of rewards and reward systems. The findings across many of these studies remain unclear because some implemented poor data collection methods and did not analyse results with consideration for key background factors, such as the native language of users and their level of technology experience (Shortt et al., 2021).

The purpose of this study is to address the research problem of limited knowledge regarding the influence of reward systems on both user motivation and retention. It is essential to understand user experiences with reward-based learning and whether these rewards enhance engagement in a way that leads to sustained app usage. By gaining more insights into users' perceptions and choices regarding reward-based systems, designers can improve these mechanisms to meet the needs and expectations of language learners. Such improvements can help develop better strategies to enhance language learning outcomes, strengthen user retention, and improve the overall learning experience.

Research Question:

How does the reward system in language learning apps influence users' motivation and engagement?

Research Objective:

To study the influence of gamification reward systems on user retention in language learning apps.

Methodology (300–500 words):

This study employed a quantitative research approach using an online survey questionnaire to determine the impact of gamified reward systems on user motivation and retention in mobile language learning applications. Online surveys were chosen for their efficiency and ability to reach a large and diverse population. The questionnaire included both closed-ended items, such as Likert scale, multiple choice, and ranking questions, and open-ended questions to capture both measurable trends and richer personal insights. Most items were closed-ended to collect data on app usage behaviours, motivation levels, and preferred gamification reward types, while the open-ended items allowed participants to describe experiences, motivations, and suggestions for improvement. Demographic information such as age, education level, and technological proficiency was also collected to analyse potential relationships with engagement outcomes.

The target participants were current and past mobile language learning app users, particularly young adults aged 18–34. A non-probability convenience sampling method was used due to its practicality and efficiency in reaching the intended population within the study timeframe. To be eligible, participants had to be at least 13 years old, have experience using a mobile language learning app, and possess at least basic technological proficiency. There were no restrictions on educational background, gender, nationality, or work status. Individuals under the age of 13 or without prior experience using a mobile language learning app were excluded from the study.

The target sample size was 80, with a minimum of 50 responses, following recommendations by Hair et al. (2018) and Suksem (2024) for exploratory research. In total, 85 valid responses were collected, which was sufficient for descriptive analysis though not for complex statistical modelling. Participants were recruited over a 10-day period via Facebook, Instagram, and WhatsApp, using both targeted posts and direct messages. Data collection was followed by one week of data cleaning and analysis.

Google Forms was used as the primary data collection tool, as it allowed for automatic generation of summary charts and frequency tables. These outputs were later refined in Google Sheets to enhance clarity. The survey was organised into three main areas: demographics, language and technology proficiency, and app usage with gamification features. Demographic questions captured age, gender, education level, employment status, and nationality. Language and technology proficiency questions assessed the participant's primary language, number of languages spoken, familiarity with mobile technology (measured on a 5-point Likert scale), and frequency of digital device use. App usage and gamification questions explored the frequency and duration of app use, motivations for learning, preferred reward types, reasons for discontinuation, and suggestions for improvement.

The survey employed a mix of frequency ordinal scales, multiple-choice items (single and multiple answers), Likert scales, and open-ended questions. The open-ended responses provided deeper insight into motivations, experiences, and suggestions for enhancing language learning applications. Data analysis involved descriptive statistics—frequencies, percentages, and means—to summarise demographic trends, app usage patterns, and preferences for gamified reward systems. Thematic coding was applied to open-ended responses to identify recurring patterns and suggestions, while data visualisations created in Google Sheets supported interpretation and presentation of the findings.

Findings and Discussion (500 words):

The survey results offer a comprehensive understanding of user motivations, engagement patterns, and perceptions regarding gamified reward systems in language learning apps. A majority of users (43.5%) reported using language apps out of personal interest, followed by career development (20%) and cultural engagement (12.9%). These findings align with Self-Determination Theory (Deci & Ryan, 2000), which emphasizes the importance of intrinsic motivation in sustaining learning behaviors. Although gamification is commonly used to boost motivation through external incentives, the data suggest that long-term engagement is more influenced by meaningful internal goals. Even users motivated by academic or professional reasons reported disengaging over time, indicating that superficial rewards alone are insufficient to sustain motivation unless they are aligned with users' evolving personal objectives.

Regarding the effectiveness of gamified rewards (Figure 3), users cited streaks, badges, and unlockable content as the most appreciated features. However, their preferences did not always translate into sustained motivation. While streaks were effective in kickstarting learning routines, they became a source of stress for some users—especially when broken—leading to app abandonment. This echoes Deterding et al. (2011), who caution that overreliance on extrinsic motivators can result in negative outcomes. In contrast, unlockable content and badges that reflected meaningful progress were seen as more valuable. Users noted that badges were often too generic and lacked relevance to actual learning achievements. These observations support the Self-Determination Theory view that external rewards should reinforce users' sense of autonomy and competence (Deci & Ryan, 2000).

Effective reward type for boosting respondents' motivation

(N=85)

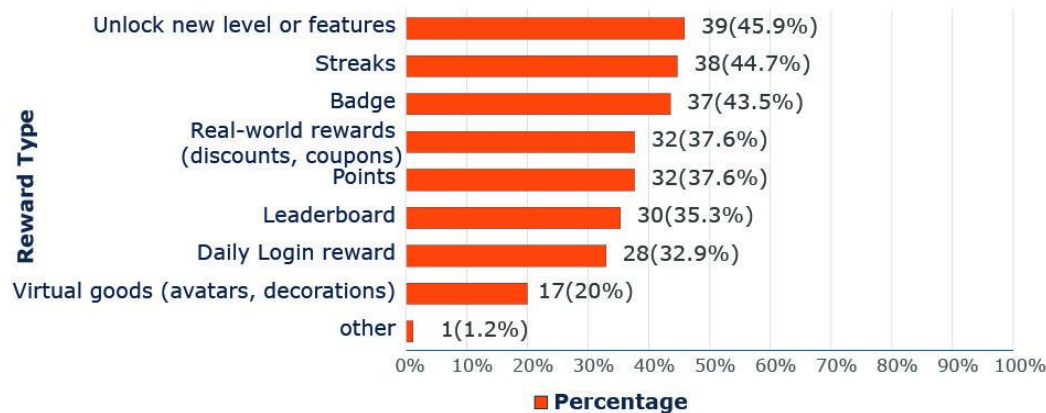


Figure 2. Effective reward type for boosting respondents' motivation

The dropout rate was notable. Figure 3 shows 75.3% of users having discontinued app use at some point. Time constraints (64.7%), decreased motivation (62.4%), and loss of interest (58.8%) were the most frequently cited reasons. Over 40% of respondents had stopped using the app for more than a year. Among those who returned, Figure 5 shows the primary motivator was personal goals (65.9%), followed by the introduction of new features or reward systems (32.9%).

Dropout Rate (Stop using app for a period)

(N=85)

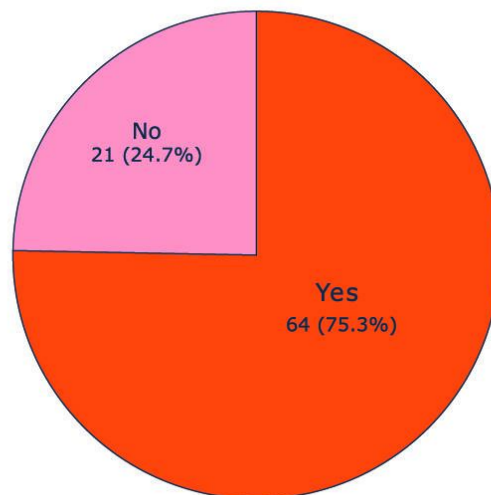


Figure 3. App dropout rate distribution

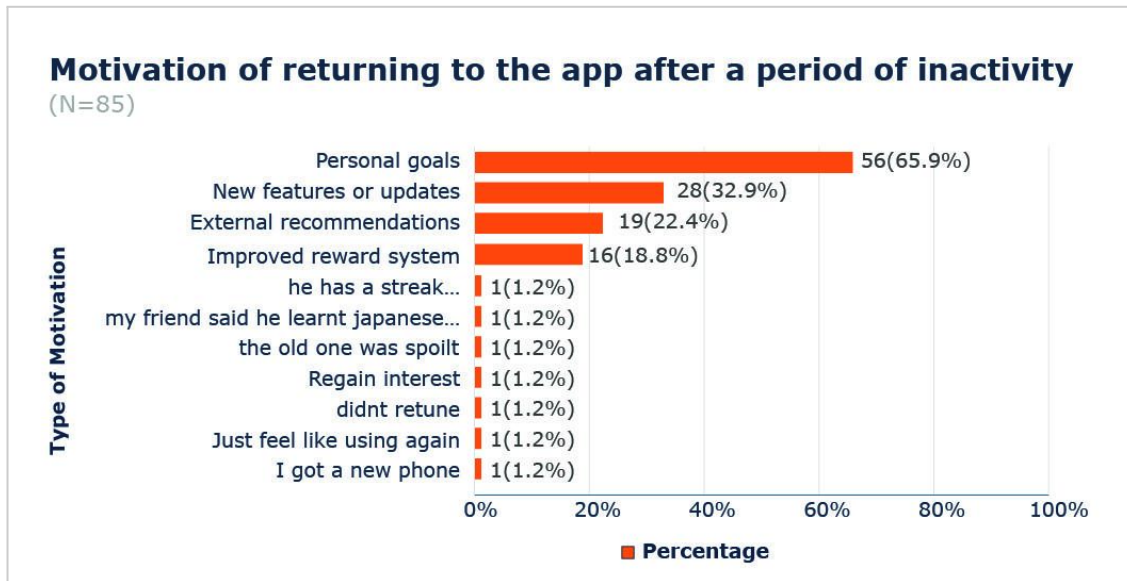


Figure 5. Motivation to re-engage the app

While 42.4% considered gamified rewards “somewhat effective,” only 16.5% rated them as “highly effective” in Figure 4, suggesting a need for more personalized and adaptive reward designs.

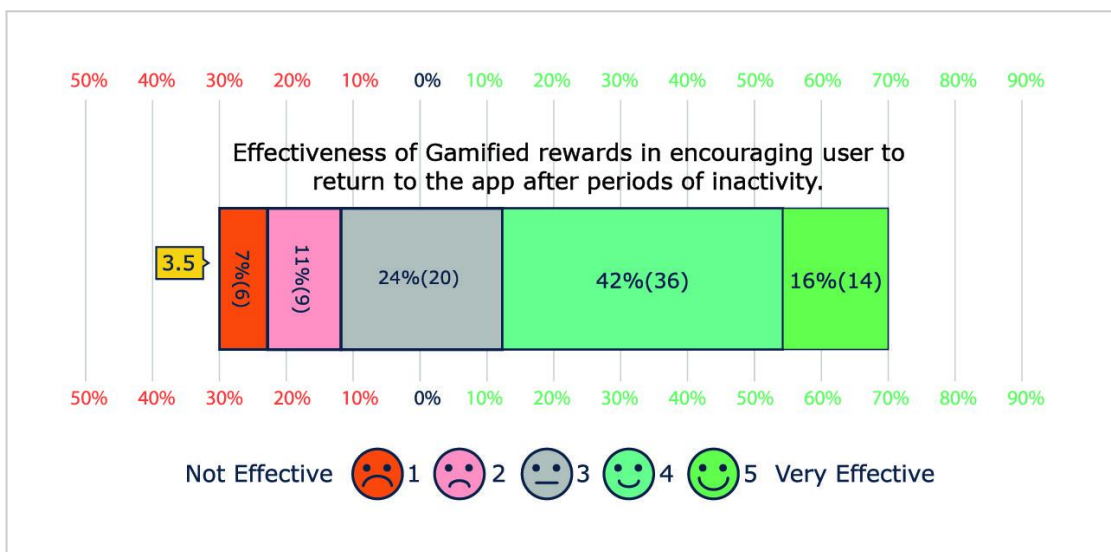


Figure 4. Effectiveness of gamified rewards for re-engagement

Demographic differences also influenced perceptions of gamified elements. Younger users (aged 18–24) were more attracted to visually engaging features such as leaderboards and vibrant badges, whereas older users valued learning outcomes over flashy visuals. Regular users engaged more frequently with features like streaks and leaderboards, while occasional users preferred simpler systems such as daily check-ins and content unlocking. These differences suggest that gamification strategies should be tailored to user age and engagement levels, as a one-size-fits-all approach may reduce effectiveness.

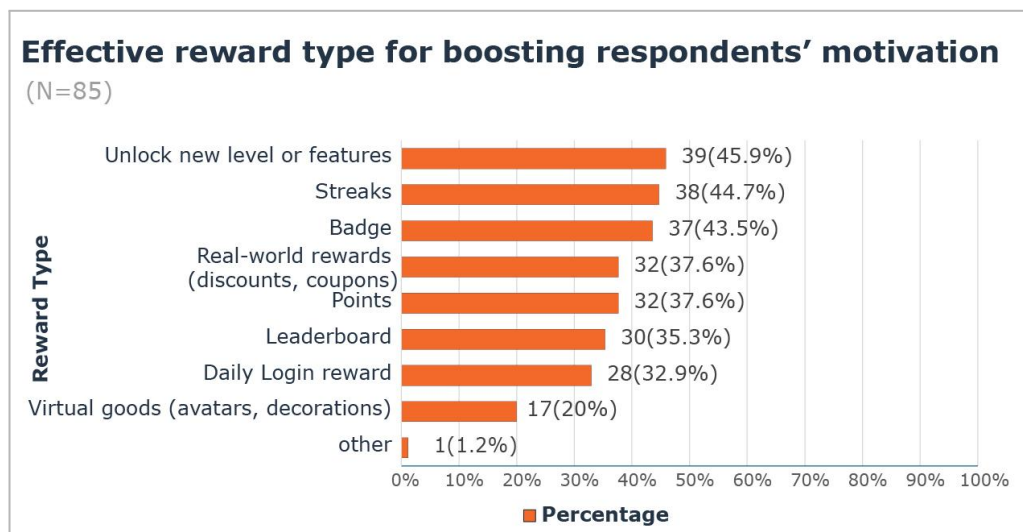


Figure 4. Effective reward type for boosting respondents' motivation

Feedback from participants consistently highlighted the importance of meaningful, progress-oriented rewards. Although badges, streaks, and points initially provided motivation, many users eventually perceived them as “chores” that reduced the joy of learning. Participants expressed a preference for reward systems that reflected their personal progress and fostered a sense of autonomy. When rewards felt random or overly game-like, they were seen as distracting or demotivating. Overall, the results indicate that effective gamification should align with learners' goals, promote autonomy, and reinforce a sense of competence and progression (Deterding et al., 2011; Deci & Ryan, 2000).

Conclusion (200–500 words):

This study provides valuable insight on how gamified rewards affect user retention and motivation in language learning apps. The majority of responses were young adults (18–24 years old) and female, representing younger generations' preference for digital learning supports and adaptability with technology. The data shows that gamified rewards, such as streak, badge and unlocking new features, are effective in encouraging continuous learning and app usage, but must be combined with engaging content to meet user needs. Personal interest, career development, and cultural interest are the key motivations for language learning, and reward systems and lessons should be designed accordingly. Notable challenges such as a lack of time and motivation indicate that applications should offer more flexible learning options and personalised experiences.

While most respondents showed a positive attitude towards the reward system, some reported that gamification does not significantly impact motivation or can negatively affect the learning journey by making lesson access overly complex. This study has several limitations. Simply relying on self-reported survey data may contain biases like inaccurate memory recall and social expectation influence. Considering the diversity among language learners worldwide, even though the sample size is sufficient, it might not fully represent the situation of all learners. This study concentrated on users' personal perceptions rather than concise measurement of how the application was actually used, and it is challenging to show the causal relationship between gamification and long-term user retention due to the cross-sectional design. Overall, the findings give an in-depth insight into how reward systems affect user motivation and retention, aligning with the research objectives and emphasising the importance of gamification in user engagement. The results provide useful suggestions to improve user retention based on specific rewards and attitudes.

Reference (APA format):

- Al-Hoorie, A. H., & Hiver, P. (2023). Priming Motivation in a Second Language: A Preregistered Report. *The Journal for the Psychology of Language Learning*, 5(1), 1–14. <https://doi.org/10.52598/jpll/5/1/2>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Franco-Santos, M., & Gomez-Mejia, L. (2015). Reward Systems. <https://doi.org/10.1002/9781118785317.weom050102>
- Garaialde, D., Cox, A. L., & Cowan, B. R. (2021). Designing gamified rewards to encourage repeated app selection: Effect of reward placement. *International Journal of Human-Computer Studies*, 153, 1–15. <https://doi.org/10.1016/j.ijhcs.2021.102661>
- 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>
- Interaction Design Foundation – IxDF. (2016, September 13). What is Motivation?. Interaction Design Foundation – IxDF. <https://www.interaction-design.org/literature/topics/motivation>
- Kabir, S. M. S. (2016). Methods of data collection. In *Basic guidelines for research: An introductory approach for all disciplines* (pp. 201–276). Book Zone Publication.
- Karakaya, K., & Bozkurt, A. (2022). Mobile-assisted language learning (MALL) research trends and patterns through bibliometric analysis: Empowering language learners through ubiquitous educational technologies. *System*, 102925. <https://doi.org/10.1016/j.system.2022.102925>
- Kessler, M., Ferronato, T., Torres Centurion, M. J., Akay, M., & Kim, J. (2025). Mobile-assisted language learning with commercial apps: A focused methodological review of quantitative/mixed methods research and ethics. *Research Methods in Applied Linguistics*, 4(1), 100186. <https://doi.org/10.1016/j.rmal.2025.100186>
- Lăpădat, L. C., & Lăpădat, M.-M. (2023). The Importance of Motivation in Foreign Language Learning. *Scientific Bulletin of the Politehnica University of Timisoara: Transactions on Modern Languages / Buletinul Științific Al Universității Politehnica Din Timișoara: Seria Limbi Moderne*, 22(1), 142–152. <https://doi-org.ezproxy.taylors.edu.my/10.59168/vgle2734>
- Luo, Z. (2021). Gamification for educational purposes: What are the factors contributing to varied effectiveness? *Education and Information Technologies*. <https://doi.org/10.1007/s10639-021-10642-9>
- Majumder, A. S. (2025). The Influence of UX Design on User Retention and Conversion Rates in Mobile Apps. <https://arxiv.org/pdf/2501.13407>
- Ponto, J. (2015). Understanding and Evaluating Survey Research. *Journal of the Advanced Practitioner in Oncology*, 6(2), 168–171.
- Qian Xu, & Richardson, J. C. (2024). The Impact of Social Media and Gamification of a Mobile Vocabulary Learning App: Self-Regulation and Learning Persistence. *Online Learning*, 28(4), 4–36.
- Roslan, R., Ayub, A. F. M., Ghazali, N., & Zulkifli, N. N. (2021). The Development of a Collaborated Gamified E-Quiz and Strategy Game Mobile Application to Increase Students' Motivation and Continuance Usage Intention. *ANP Journal of Social Science and Humanities*, 2(2), 74–81. <https://doi.org/10.53797/ANPJSSHV2I2.10.2021>
- Seppälä, J. (2020). User Experience of Learning Systems: Enhancing Student Motivations for Frequent Mobile Language Learning Application Use. Aalto University publication series. <https://aaltodoc.aalto.fi/server/api/core/bitstreams/227effc4-c8c6-422e-8701-82f9657d1a55/content>

Shortt, M., Tilak, S., Kuznetcova, I., Martens, B., & Akinkuolie, B. (2023). Gamification in mobile-assisted language learning: a systematic review of Duolingo literature from public release of 2012 to early 2020. *Computer Assisted Language Learning*, 517–554. <https://doi.org/10.1080/09588221.2021.1933540>

Sudina, E., Teimouri, Y., & Plonsky, L. (2025). L2 grit and age as predictors of attrition in mobile-assisted language learning. *Learning and Individual Differences*, 120, 102704. <https://doi.org/10.1016/J.LINDIF.2025.102704>

Sukserm, P. (2024). Determining the Appropriate Sample Size in EFL Pilot Studies. *Journal of Research Methodology*, 37(3), 245–264. <https://so12.tci-thaijo.org/index.php/jrm/article/view/1532>

Villegas, F. (n.d.). User Retention: What it is and How to Measure this? | QuestionPro. QuestionPro. <https://www.questionpro.com/blog/user-retention/>

Winkler, I., & Gomes, A. T. (2017). Security Culture. In *Advanced Persistent Security* (pp. 131–141). <https://doi.org/10.1016/B978-0-12-809316-0.00011-7>

Zhao, F., & Guo, D. (2019). Rewards in Gamification. In X. Fang (Ed.), *HCI in Games. HCII 2019. Lecture Notes in Computer Science* (Vol. 11595). Springer. https://doi.org/10.1007/978-3-030-22602-2_34

Appendices

Picture credits:

Riseapps. (2024, November 4). Gamification in learning apps. <https://riseapps.co/gamification-in-learning-apps/>