

The Evolution and Impact of Duolingo in Mobile Language Learning: Analyzing Effectiveness and Future Enhancement Opportunities

Introduction to Duolingo and Mobile Learning

Opportunities to learn a language have become increasingly more accessible with technology, especially mobile learning applications. One of the mobile learning applications is Duolingo, which is popular among the youth and millennials who seek to obtain knowledge and skills in a second, third, or fourth foreign language worldwide [2]. In this research paper, we will look into the evolution and impact of Duolingo in Mobile Language learning in a global and classroom context, analyzing its effectiveness and future enhancement opportunities. ACM's digital library and Google Scholar's website are used to search for research papers related to this current paper. The keywords to find relevant papers are "language," "Duolingo," "mobile," "education," "youth," and "learning." This paper will start with the historical development of Duolingo, then the popularity and usability of mobile learning, then the Duolingo's role in the border context of education, and how gamified elements are introduced to the app to make learning entertaining, microlearning, and the downside of mobile learning.

Historical Development of Duolingo

Duolingo is a free language learning app created by Luis von Ahn and Severin Hacker. It is available in web version, Android, and iOS platforms. In November 2016, the app provided 66 different language courses in 23 languages [6]. Duolingo is the only mobile learning application made as a gamified language learning app accessible to engage language learners and motivate them to solve their learning problems [6]. Many users reported the application because it is easy to use while repeating the lessons.

The effectiveness of mobile learning

Mobile learning allows students to learn independently. Mobile devices have enabled new forms of learning independent of time and place. Mobile learning allows students to learn in the right place [1], allowing them to be where they want to desire the most. In addition, most mobile learning apps have been developed with more accessible features in a cost-free policy [1]. Most language learning apps can be downloaded on mobile stores such as Google Play Store or Apple Store [3]. With the increasing use of technology, digital platforms are significantly steaming, and many teenagers use them for daily interactions [2]. Students can improve their language learning in their leisure time to deepen their speaking, listening, writing, and memorizing skills independently in a non-classroom place and time by tapping on the app icon on their mobile app in one go.

Duolingo's role in the border context of education

Since Duolingo was released, academics have been attracted by its unrestricted use and engaging elements. The mobile app application solves many student problems, especially the

need for more motivation to learn. [3] Because of the gamified elements that the game has (more in the next section) and the flexibility to learn independently, as we mentioned above, teachers should be more involved in giving students feedback on the online discussion forum. [3] Teachers can use the app to track students' progress and performance in language lessons. Students can communicate and share their ideas and lessons via chat rooms, leading to success in the classroom because reading and speaking a language is an insurmountable challenge for most learners in a non-native language environment, and classroom-based teaching and learning are limited to writing [2]. Students often need to repetitively practice their pronunciation and vocabulary outside the classroom to reinforce their knowledge. Teachers can accurately measure a student's achievement and statistics, such as the number of points and the amount of time a student spends on working a lesson as well as the streak (which is the consecutive number of days they practice their language). Gamified elements are one of the factors that led Duolingo to success.

Gamified elements are what make learning entertaining.

Almost 94% of teenage girls and 99% of teenage boys spend an estimated 7-15 hours per week playing videos [4]. The use of gamification techniques makes the mobile app Duolingo successful and widespread. *Gamification* is "using game design elements in non-game contexts" [1]. Gamification in education increases the interaction between each other, motivation, and learners' engagement. A recent study found the most common gamification elements in education to be points, badges, and leaderboards [1]. Duolingo was able to integrate all of these within the app. Language lessons are split into management chunks, and students receive points for completing a lesson and badges for completing a more significant lesson. Moreover, a dancing green owl would appear and be happy every day to make the learner encouraging and happy [3]. In addition, the app allows students to earn points as a daily goal and get bonuses for achieving it. The app embeds the progress indicators, allowing daily goals and unlocking following levels, feedback for correct and incorrect answers, streaks for continuous learning, customization for the Masco owl outlook and the app logo, leaderboard, badges, achievement, and virtual gems [5]. The amount of gamified elements provide lots of entertainment while learning to students.

Micro-Learning helps digest information.

Microlearning refers to learning small units quickly through a combination of micro-content delivery and a series of micro-interactions [1]. Duolingo introduced and integrated concepts and applications within the app, allowing the students to work on small management chunks with high-level interaction and immediate feedback. Learning content has become easier than ever because students can get immediate feedback quickly and feel satisfied with accomplishing small tasks while walking toward their bigger goals. [1, 5]. Many students reported that Duolingo helps them create a sense of community where they feel attracted and excited to learn daily. It also helps them form a habit of continuously learning any language daily

and become more confident speaking them. Short study sessions can fit into their busy schedules, considering students have other school work and can benefit from even a few minutes of learning [1, 3].

Disadvantages of Duolingo and what can be improved

Although mobile learning applications provide many benefits, they have yet to address a few drawbacks. Only some schools and institutions in more developed countries have proper financial access to technology such as mobile apps or laptops [4]. Despite having access to Duolingo, schools needed to spend extra resources on teachers because of the significant time demand and the need for professional training to utilize and learn how to distribute the lessons well across the classroom [1]. In addition, mobile learning game limits directly impact students' physical exercise, making it hard to maintain a healthy body in the long term [4]. Many users found that the type of questions on Duolingo could be more varied and more reliant on translation instead of productive skills. Although feedback is provided on the app, the amount of grammar explanation is limited to the student. Therefore, learners must incorporate Duolingo lessons with other classroom lessons to thoroughly learn the material [2, 5].

Conclusion

In conclusion, Duolingo has significantly transformed language learning through mobile technology and gamification. The application enhances independent learning and fosters community and engagement among language learners. While it presents some challenges, especially in terms of integrating into the traditional learning environment and addressing many financial needs and repetitive feedback machines, the future of Duolingo is promising. Enhancing and creating more language lessons is essential to expand accessibility worldwide and make education more accessible. In the future, it would be advantageous to have a timer mechanism to remind students of daily interaction on the app, provide economic resources to schools in less developed countries by advertising the app to the local community, and increase awareness of designing a well-established and robust language lesson experience for students. The user's feedback is the success of leading an application to cover all coverage.

Reference

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