

BOOSTING SPEAKING PROFICIENCY WITH DUOLINGO: AN INNOVATIVE TOOL FOR EFL LEARNERS

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Abstract: Achieving fluency in English and developing strong oral communication skills are crucial in today's globalized society. Proficiency in English not only enables efficient communication and access to knowledge but also improves both social and professional engagements. This study explores the effectiveness of Duolingo application in enhancing the oral proficiency of EFL learners, especially those struggling with public speaking anxiety and limited language abilities. The research aims to address the app's benefits and learners' perceptions to offer insights into improving language teaching methods and creating a more supportive learning environment. A mixed-methods approach, featuring a pre-experimental design, was employed to gather data through pre-tests, post-tests, and an opinionnaire. The sample consisted of 50 randomly selected first-year EFL students from the English department at the University Center of Barika. The findings indicate that while the app provides notable benefits, its effectiveness is maximized when users receive clear instructions and personalized feedback. Learners generally have a favourable opinion of Duolingo, valuing its interactive elements and real-time feedback. However, technical problems and challenges with initial navigation can detract from the overall experience. The study offers recommendations for improving user engagement and learning outcomes. It highlights the necessity for providing users with clear guidance and instructions to maximize their utilization of the Duolingo application. Also, the study suggests that integrating interactive and stimulating learning activities within the app will enhance learners' motivation and vocabulary retention.

Keywords: Duolingo ; EFL Learners ; language learning App ; oral proficiency ; public speaking anxiety

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1. Introduction

In today's interconnected world, English proficiency has become an essential skill for effective communication, academic success, and career advancement. As the global lingua franca, mastering spoken English is particularly important for non-native speakers, yet many English as a Foreign Language (EFL) learners struggle with developing oral proficiency due to anxiety, limited exposure to authentic conversations, and insufficient practice opportunities. Traditional classroom methods often fail to address these challenges, necessitating the exploration of innovative, technology-enhanced learning approaches.

With the rapid advancement of digital learning tools, language learning applications have gained significant popularity, offering learners accessible and interactive platforms to enhance their skills. Among these applications, Duolingo stands out as a widely used tool, recognized for its gamified approach and engaging exercises. While numerous studies have explored its impact on vocabulary acquisition and grammatical knowledge, limited research has examined its effectiveness in improving speaking proficiency. This study aims to bridge that gap by investigating how Duolingo influences the oral communication skills of EFL learners, particularly those who experience public speaking anxiety or face challenges in spoken English development.

Utilizing a mixed-methods approach, the study evaluates the effectiveness of Duolingo through pre-tests, post-tests, and learners' perceptions gathered via an opinionnaire. Conducted at the University Center of Barika, the research involved 50 first-year EFL students, providing empirical insights into the app's role in enhancing speaking proficiency.

By analyzing the effectiveness of Duolingo and the perceptions of EFL learners, this study contributes to the ongoing discussion on digital language learning tools and their pedagogical implications. It also presents recommendations for optimizing user engagement and maximizing learning outcomes, emphasizing the importance of structured integration and interactive enhancements within the application.

2. Literature Review

The rapid evolution of technology has profoundly impacted the field of language learning, transforming traditional teaching methodologies and offering learners innovative tools to enhance their linguistic, communicative, and intercultural skills. Over the past two decades, the integration of digital technologies into language education has revolutionized how languages are taught and learned, providing unprecedented levels of accessibility, autonomy, and engagement (Chapelle, 2001). This shift has been driven by the growing recognition of technology's potential to create interactive, personalized, and learner-centered experiences that cater to diverse needs and preferences (Warschauer & Healey, 1998; Blake, 2013). As a result, language learning has become more inclusive, flexible, and effective, breaking the constraints of traditional classroom settings and reaching learners across the globe.

Despite these advancements, the integration of technology into language learning is not without challenges. Issues such as the digital divide, lack of teacher training, and the potential for over-reliance on technology pose significant barriers to equitable and effective learning outcomes (Warschauer, 2003).

This literature review explores the role of technology in language learning, with a particular focus on gamification and its application in platforms like Duolingo. It examines how digital tools have transformed language education, the benefits and limitations of these technologies, and their impact on key aspects of language learning, such as speaking proficiency.

2.1 The Role of Technology in Language Learning

The integration of technology into language learning has revolutionized traditional teaching methodologies, offering learners unprecedented levels of accessibility, autonomy, and engagement (Chapelle, 2001). Over the past two decades, digital learning tools have gained widespread popularity due to their ability to provide interactive and personalized learning experiences, catering to diverse learner needs and preferences. According to Warschauer and Healey (1998), technology-enhanced language learning not only fosters learner motivation but also facilitates real-time feedback, which is crucial for improving speaking proficiency. This shift from teacher-centered to learner-centered approaches has empowered students to take control of their learning processes, enabling them to practice at their own pace and in their preferred environments (Blake, 2013).

One of the most significant advancements in this field is the emergence of mobile-assisted language learning (MALL), which has proven to be particularly effective in developing oral communication skills. Kukulska-Hulme and Shield (2008) argue that MALL provides learners with constant exposure to target language input, allowing for more frequent and flexible practice opportunities. Mobile devices, such as smartphones and tablets, enable learners to access language learning applications, podcasts, and online resources anytime and anywhere, breaking the constraints of traditional classroom settings (Stockwell, 2010). In addition, video conferencing tools and virtual classrooms have become increasingly valuable, especially in post-pandemic education, by connecting learners with native speakers and teachers across the globe (González-Lloret, 2011). This ubiquity of mobile technology has made language learning more accessible to a broader audience, including those in remote or underserved areas.

Moreover, the use of Artificial Intelligence (AI) and machine learning in language learning applications has further personalized the learning experience. AI-driven platforms, such as Duolingo and Babbel, adapt to individual learners' progress and provide tailored exercises to address specific weaknesses (Godwin-Jones, 2011). These platforms often incorporate gamification elements, such as points, badges, and leaderboards, which enhance learner motivation and engagement (Reinhardt & Sykes, 2014). Additionally, speech recognition technology has become increasingly sophisticated, allowing learners to practice pronunciation and receive instant feedback on their accuracy (Liakin, Cardoso, & Liakina, 2017).

Another notable development is the use of virtual reality (VR) and augmented reality (AR) in language learning. These immersive technologies create realistic environments where learners can practice language skills in context, such as ordering food in a virtual restaurant or navigating a foreign city (Shadiev, Hwang, & Huang, 2017). Such simulations provide a safe space for learners to experiment with language use without the fear of making mistakes in real-life situations. Research has shown that VR and AR can significantly enhance vocabulary acquisition and cultural understanding, as they offer multisensory experiences that are more memorable than traditional methods (Chen, 2016).

Despite these advancements, challenges remain in the effective integration of technology into language learning. Issues such as digital divide, lack of teacher training, and the potential for over-reliance on technology must be addressed to ensure equitable and effective learning outcomes (Warschauer, 2003). Furthermore, while technology can provide valuable tools for language practice, it cannot fully replace the social interaction and cultural immersion that come with human communication (Kern, 2014). Therefore, a balanced approach that combines technological tools with traditional teaching methods is essential for maximizing the benefits of technology in language learning.

Therefore, the role of technology in language learning has evolved significantly, offering innovative solutions to enhance accessibility, engagement, and personalization (Sehlaoui, 2024). From mobile applications to AI-driven platforms and immersive technologies, digital tools have transformed the way languages are taught and learned. However, careful consideration must be given to the challenges and limitations of technology to ensure that it complements rather than replaces the human element of language education. As technology continues to advance, it holds the potential to further democratize language learning and bridge linguistic and cultural divides on a global scale.

2.2 Gamification in Language Learning: The Duolingo Model

Gamification, defined as the incorporation of game-like elements into non-game contexts, has gained significant recognition as an effective strategy to enhance learner engagement and motivation in educational settings (Deterding et al., 2011). In the field of language learning, gamification has been widely adopted to create interactive and enjoyable learning experiences. Among the most prominent examples is Duolingo, a language learning application that leverages gamification principles to make language acquisition more accessible and engaging. According to Vesselinov and Grego (2012), Duolingo users demonstrate measurable improvements in their target language proficiency, with some learners achieving outcomes comparable to those of traditional classroom instruction. The app's success is largely attributed to its innovative features, including reward systems, adaptive learning algorithms, and real-time feedback mechanisms, which collectively foster a sense of achievement and progress among users.

Research has extensively explored the impact of Duolingo on various aspects of language learning. Krashen's (1982) Input Hypothesis emphasizes that language acquisition is most effective when learners are exposed to comprehensible input in a low-anxiety environment. Duolingo aligns with this principle by providing a self-paced, low-pressure learning experience that minimizes learners' fear of making mistakes (Golonka et al., 2014). This approach is particularly beneficial for beginners, as it allows them to build confidence and foundational skills without the stress often associated with traditional classroom settings. However, some scholars have raised concerns about the app's limitations. For instance, Loewen et al. (2019) argue that Duolingo's focus on structured sentence formation and discrete grammar exercises may not adequately prepare learners for spontaneous speech and natural dialogue, which are critical components of conversational fluency.

2.3 Duolingo and Speaking Proficiency Development

While Duolingo offers a range of exercises designed to improve pronunciation and speaking skills, its effectiveness in enhancing oral proficiency remains a subject of debate. Munday (2016) notes that learners who use Duolingo over extended periods often show noticeable improvements in pronunciation accuracy and word recognition, suggesting that the app's speech recognition technology and repetitive practice exercises can be beneficial for developing basic speaking skills. However, Sykes (2018) highlights a significant limitation: the app's lack of emphasis on interactive and conversational practice may hinder the development of real-life speaking abilities. This is particularly relevant for learners aiming to achieve advanced proficiency, as spontaneous communication requires skills that go beyond structured sentence formation (Missoum, 2024).

A comparative study by Nielson (2011) provides further insight into this issue. The study found that learners who supplemented their Duolingo usage with structured speaking activities, such as role-playing and live conversations, demonstrated significantly higher fluency gains compared to those who relied solely on the app. This finding underscores the importance of integrating Duolingo with additional interactive speaking exercises to maximize its effectiveness. While Duolingo serves as a valuable tool for foundational

speaking practice, it should be viewed as a complementary resource rather than a standalone solution for developing advanced oral proficiency.

Thus, Duolingo represents a significant advancement in the application of gamification to language learning, offering an accessible and engaging platform for learners to develop foundational skills. Its gamified features, such as rewards and adaptive learning, have proven effective in enhancing motivation and measurable language proficiency. However, its limitations in fostering spontaneous speech and conversational fluency highlight the need for a balanced approach that combines digital tools with interactive, real-world speaking practice. As technology continues to evolve, the integration of gamified platforms like Duolingo with more interactive and immersive learning experiences may hold the key to addressing these challenges and further enhancing language learning outcomes.

3. Methodology

3.1 Research Design

This study employs a mixed-methods research approach to investigate the effectiveness of the Duolingo application in enhancing the speaking proficiency of EFL learners. The integration of both quantitative and qualitative data collection techniques ensures a comprehensive analysis of Duolingo's impact on learners' oral communication skills. This dual approach allows for the triangulation of data, enhancing the validity and reliability of the findings (Creswell & Plano Clark, 2017).

A pre-experimental research design was adopted to evaluate the progress in speaking proficiency before and after the use of Duolingo. This design was selected to measure the extent to which the application influences learners' oral performance while also capturing their perceptions of its usability and effectiveness. The study follows a one-group pre-test and post-test design, which is commonly used in educational research to assess the impact of an intervention (Fraenkel, Wallen, & Hyun, 2018). The design consists of three main phases:

- 1) Pre-test: Conducted before participants began using Duolingo to establish a baseline assessment of their speaking proficiency. The test consisted of a structured oral interview in which participants responded to a series of prompts and tasks designed to elicit spontaneous speech. These tasks included describing a picture, answering open-ended questions, and engaging in a brief role-play scenario. Learners were evaluated based on fluency, pronunciation, vocabulary use, and overall coherence, using a standardized speaking rubric adapted from the CEFR (Common European Framework of Reference for Languages).
- 2) Intervention: Participants engaged in a structured use of Duolingo for a specified period, focusing on speaking-related activities such as pronunciation drills, interactive dialogues, and listening-based exercises. The intervention lasted for three months (one semester), with learners following a weekly plan designed to progressively improve their oral skills.
- 3) Post-test: Administered after the intervention to measure changes in speaking proficiency. The post-test replicated the format of the pre-test, using equivalent but different prompts to avoid memorization while ensuring comparability. Participants' performance was assessed using the same speaking rubric, allowing for a direct comparison to identify improvements in fluency, pronunciation, vocabulary, and coherence. This phase aimed to determine whether Duolingo use led to statistically significant gains in learners' speaking abilities.

In addition to the pre-test and post-test, an opinionnaire was administered to collect qualitative insights into learners' experiences, challenges, and attitudes toward the application. This mixed-methods approach ensures a holistic understanding of Duolingo's effectiveness, combining measurable outcomes with rich, descriptive feedback from participants.

3.2 Participants

The study involved 50 first-year EFL students from the English Department at the University Center of Barika. Participants were selected using random sampling to ensure a representative sample of learners with diverse proficiency levels and learning backgrounds. The sample size was deemed appropriate for a pre-experimental study, as it allowed for meaningful data interpretation while maintaining feasibility in implementation (Cohen, Manion, & Morrison, 2018). The inclusion of participants with varying levels of English proficiency ensured that the findings would be generalizable to a broader EFL learner population.

3.3 Procedures

- **Quantitative Data Analysis:**

Pre-test and post-test scores were analyzed using paired-sample t-tests to determine whether there was a statistically significant improvement in speaking proficiency after the intervention. This statistical method is appropriate for comparing the same group's performance before and after an intervention (Field, 2018).

Descriptive statistics (mean, standard deviation) were calculated to compare learners' performance before and after using Duolingo, providing a clear picture of the app's impact on speaking proficiency.

- **Qualitative Data Analysis:**

Responses from the opinionnaire's open-ended questions were analyzed using thematic analysis, a method that identifies recurring patterns and themes in qualitative data (Braun & Clarke, 2006). Key themes related to learners' experiences, challenges, and attitudes toward Duolingo were categorized to provide insights into user engagement, motivation, and areas for improvement.

4. Results

This section presents the findings from both quantitative and qualitative analyses, evaluating the impact of a three-month Duolingo intervention on participants' speaking proficiency. Therefore, these results offer a comprehensive understanding of Duolingo's effectiveness in enhancing speaking skills while also identifying potential gaps in real-world communication practice.

4.1. Quantitative Findings: Pre-test and Post-test Results

The analysis of pre-test and post-test results using paired-sample t-tests revealed a statistically significant improvement in the speaking proficiency of participants after the three-month Duolingo intervention.

Table 1.

Descriptive Statistics for Pre-test and Post-test Speaking Proficiency Scores

Dimension	Pre-test Mean (SD)	Post-test Mean (SD)	Mean Difference	t-value	p-value
Fluency	2.8 (0.56)	3.7 (0.61)	+0.9	9.12	< 0.001
Pronunciation	2.6 (0.63)	3.5 (0.59)	+0.9	8.75	< 0.001
Vocabulary Use	2.7 (0.54)	3.6 (0.60)	+0.9	9.48	< 0.001
Coherence	2.9 (0.58)	3.8 (0.62)	+0.9	9.03	< 0.001
Overall Score	2.75 (0.57)	3.65 (0.61)	+0.9	9.34	< 0.001

The quantitative findings indicate a statistically significant improvement in participants' speaking proficiency after the three-month Duolingo intervention. The results of the paired-sample t-tests show that mean scores across all measured dimensions—fluency, pronunciation, vocabulary use, and coherence—increased by 0.9 points on average, with p-values < 0.001, confirming that these improvements are unlikely due to chance.

The high t-values across all dimensions (ranging from 8.75 to 9.48) suggest a strong effect of the intervention. Notably, the consistency in mean differences across the four dimensions (+0.9) indicates a balanced improvement in all aspects of speaking proficiency rather than isolated progress in one particular area.

4.2. Qualitative Findings: Opinionnaire Results

Thematic analysis of the opinionnaire responses revealed several key themes:

Table 2.

Thematic Analysis of Opinionnaire Responses

Theme	Description	Percentage of participants mentioning (%)	Example Response
Engagement and Motivation	Learners found Duolingo enjoyable and motivating thanks to gamification.	86%	"I liked the daily challenges and streaks."
Speaking Confidence	Reported increased confidence in oral expression.	78%	"I feel more comfortable speaking now."
Usability and Accessibility	App was easy to use, with flexibility for mobile learning.	90%	"I could practice anytime on my phone."
Need for Real Conversations	Some wanted more spontaneous interaction and real-life dialogue scenarios.	48%	"Exercises are good, but not like real conversations."
Suggestions for Improvement	Requests for more contextual dialogues and oral assessment tools.	40%	"It would be better if there were real dialogues or speaking tests."

The thematic analysis of the opinionnaire responses highlights key aspects of learners' experiences with Duolingo, revealing both strengths and areas for improvement.

1. High Engagement and Motivation (86%) – The strong presence of gamification elements, such as daily challenges and streaks, appears to be a significant factor in maintaining learner motivation. This aligns with previous research on gamified language learning, which suggests that rewards and progress tracking enhance sustained engagement.
2. Increased Speaking Confidence (78%) – A large majority of participants reported feeling more comfortable speaking, indicating that the intervention positively impacted self-

confidence in oral communication. However, without real-time interaction, this confidence may not fully translate into spontaneous conversations.

3. Usability and Accessibility (90%) – The highest-rated theme, this result underscores the benefits of mobile learning, particularly flexibility and ease of access. Duolingo’s design allows learners to integrate language practice seamlessly into their daily routines.
4. Need for Real Conversations (48%) – Despite overall positive feedback, nearly half of the participants expressed a desire for more spontaneous and interactive speaking practice. This suggests that while Duolingo provides structured exercises, it may not fully address the need for real-life communicative practice.
5. Suggestions for Improvement (40%) – Participants recommended contextual dialogues and oral assessments to enhance authenticity and evaluate progress more effectively. This reflects a common challenge in digital language learning—bridging the gap between structured exercises and real-world application.

The findings reinforce Duolingo’s effectiveness in engagement, confidence-building, and accessibility, but also highlight limitations in spontaneous speaking practice and authentic conversation opportunities. These insights suggest that integrating additional real-world dialogue simulations or conversation-based activities could further enhance learning outcomes.

5. Discussion

The findings of this study highlight the positive impact of using the Duolingo application on the speaking proficiency of EFL learners. The statistically significant improvements observed in fluency, pronunciation, vocabulary use, and coherence support previous research on the effectiveness of mobile-assisted language learning tools in promoting oral communication skills.

The progress recorded between pre-test and post-test scores suggests that structured, consistent use of Duolingo helps learners overcome common barriers to speaking proficiency, such as hesitation, limited vocabulary, and pronunciation difficulties. These results align with the principles of gamified learning, where engagement and motivation are sustained through interactive tasks, rewards, and progress tracking.

The qualitative data further confirm the quantitative findings, as learners reported increased confidence and enjoyment while using the application. The high levels of engagement, combined with the convenience of mobile accessibility, contributed to regular practice and habit formation. However, participants also pointed out limitations, particularly the lack of spontaneous conversation and real-time interaction. This indicates that while Duolingo is effective for structured oral practice, it cannot fully replace authentic communicative environments where learners engage in unpredictable, dynamic exchanges.

Moreover, some learners suggested improvements regarding the inclusion of more real-life dialogues and cultural content, reflecting the need for contextualized language use in speaking activities. These observations emphasize the importance of complementing app-based learning with communicative classroom activities or conversation-based platforms.

6. Conclusion

The study concludes that the use of Duolingo significantly enhances the speaking proficiency of first-year EFL learners, particularly in areas of fluency, vocabulary, pronunciation, and coherence. Learners not only demonstrated measurable improvement in their oral skills but also expressed positive attitudes toward the application’s usability and motivational features. Nonetheless, despite its strengths, Duolingo should be viewed as a complementary tool rather than a standalone solution for speaking development. The absence of spontaneous, real-time conversations limits its ability to fully simulate natural communication settings.

7. Recommendations

Based on the findings of this study, the following recommendations are proposed:

- Language instructors should integrate Duolingo with classroom-based speaking tasks that focus on interaction and conversation, bridging the gap between structured app practice and real-world oral communication.
- Learners should be encouraged to participate in conversation clubs or use language exchange platforms to enhance spontaneous speaking skills.
- Educational institutions may consider adopting Duolingo or similar applications as part of their blended learning strategies, particularly for oral proficiency development, while ensuring additional opportunities for live dialogue.
- Developers of Duolingo are encouraged to include more culturally relevant dialogues, simulation of real-life interactions, and built-in speaking assessments to better support advanced oral proficiency.
- Further studies could examine the long-term impact of Duolingo on speaking proficiency across different learner levels and compare its effectiveness with other mobile-assisted learning tools or conversational AI platforms.

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