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Dear

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Assalamu'alaikum Warahmatullaahi Wabarakaatuh

We respectfully inform you that the editorial team has received article **ID 12002** entitled "**Exploring EFL Students Experiences in Improving English Speaking by Using Duolingo**" and has deemed it suitable for publication in the **Volume 14 Nomor 2 December 2026** edition of Ideas Journal.

Thank you for your attention.

Wassalamu'alaikum Warahmatullaahi Wabarakaatuh



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EXPLORING EFL STUDENTS EXPERIENCES IN IMPROVING ENGLISH SPEAKING BY USING DUOLINGO

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Abstract

This study aimed to explore EFL students' experiences in improving their English-speaking skills by using Duolingo. The study also examined the obstacles students encountered while using the application and their suggestions for improving it as a speaking-learning tool. A qualitative case study design was employed involving eight EFL students from UIN Ar-Raniry who had actively used Duolingo for at least two months. The participants were selected through purposive sampling. Data were collected through semi-structured interviews and analyzed using thematic analysis. The findings revealed that students had positive experiences using Duolingo to improve their English-speaking skills. The application provided an enjoyable and interesting learning experience, increased students' motivation to practice speaking, helped them develop vocabulary for speaking, improved pronunciation, and increased their confidence in speaking English. However, participants also reported several obstacles, including limited opportunities for real conversation practice, lack of speaking partners, and limited speaking features and pronunciation feedback. To address these limitations, participants suggested adding more real-life conversation activities, interactive speaking tasks, AI speaking partners, and pronunciation recording features. Overall, the findings indicate that Duolingo is a useful supplementary tool for improving English-speaking skills through regular and interactive practice, although additional opportunities for authentic communication are still needed.

Keywords: Duolingo; EFL Students; English-Speaking Skills; Learning Experiences; Vocabulary Development

Introduction

Speaking is one of the most important language skills because it gives students the opportunity to communicate and interact with others in various situations. Through speaking, students express their ideas, share information, and negotiate meaning during the communication process. Therefore, speaking is not merely about producing speech, but also about using language effectively to build meaningful interactions with others (Ding, 2021).

The development of speaking skills can be understood through several dimensions of second-language oral proficiency, specifically fluency, accuracy, and complexity. These dimensions describe learners' ability to produce spoken language fluently, accurately, and with increasingly varied linguistic forms. Students' speaking skills can be affected by issues related to grammar, vocabulary, and pronunciation. Amiruddin (2019) emphasizes that these aspects are important in students' oral performance. Research on the development of second-language speaking ability has shown that fluency, accuracy, and complexity are important dimensions for describing changes in students' speaking ability (Leonard & Shea, 2017). Furthermore, vocabulary knowledge is closely linked to speaking proficiency because learners need an adequate oral vocabulary to express their ideas during communication (Uchihara & Clenton, 2023). Therefore, the development of speaking skills involves not only speech production but also the development of the linguistic knowledge and abilities necessary for effective communication.

Vocabulary is one of the most important components of English language learning because it supports students' ability to express ideas, understand information, and communicate effectively with others. Adequate vocabulary mastery helps students convey their thoughts more clearly, especially when speaking. Therefore, vocabulary development is a crucial component of speaking development (Uchihara & Clenton, 2023). Syahabuddin et al. (2025) also found that students in ESL programs at universities use a variety of strategies to support their vocabulary learning.

Although vocabulary is crucial for the development of speaking skills, learners of English as a foreign language (EFL) may face several challenges in mastering and using vocabulary for communication. Common challenges include a lack of motivation, limited exposure to English in real-life situations, and difficulty remembering newly learned words. Students may memorize vocabulary for short-term goals, such as exams, but struggle to use those words in everyday communication. Additionally, limited exposure to English-speaking environments can reduce opportunities to encounter and practice new vocabulary regularly. Nation (2018) emphasizes that extensive reading can contribute to vocabulary learning and retention, although learners may have limited opportunities or motivation to engage in extensive reading activities. These challenges highlight the need for more engaging and accessible methods to help learners master vocabulary that can be applied in meaningful communication, particularly in speaking.

Technology has played a significant role in language learning by providing learners with flexible and interactive opportunities to practice a language. Mobile-assisted language learning (MALL) enables learners to access language learning

materials via mobile devices and practice independently outside the classroom. MALL also provides learners with the opportunity to engage in language learning activities at their own pace and in various contexts. Cho et al. (2018) reported positive effects of mobile device use on language learning outcomes. Similarly, Muluk et al. (2024) found that Web 2.0-based language learning applications can support students' vocabulary acquisition and lead to positive perceptions of language learning. In this context, mobile apps such as Duolingo provide structured language activities, repetition, and opportunities for independent language practice. However, the use of mobile technology alone is not sufficient to explain how specific apps support the development of speaking skills. Therefore, examining students' experiences with Duolingo can provide further insight into how MALL apps can support English speaking practice.

Previous research has shown that Duolingo can support vocabulary development among students learning English as a foreign language (EFL) at various educational levels. At the junior high school level, Ningtyas and Reftyawati (2024) and Permatasari et al. (2022) reported that Duolingo's interactive and repetitive activities support students' vocabulary learning. Similar findings were reported at the high school level, where Duolingo supports vocabulary development through engaging activities and gamification (Nurhayati & Surahman, 2023; Febriani et al., 2023). At the college level, research has also found that Duolingo can support vocabulary mastery and motivate students to practice English (Alim et al., 2025; Irfun, 2024). These findings indicate that Duolingo has been extensively studied as a tool for vocabulary learning, while its use for developing English speaking skills requires further attention.

Several studies have also examined the use of Duolingo in relation to English speaking skills. Syafrizal et al. (2022) investigated students' perceptions of using Duolingo for speaking skills and reported positive perceptions regarding its use for speaking practice. Lisan and Hanifah (2024) also examined students' speaking abilities through the use of Duolingo. More recent studies have examined Duolingo in relation to speaking proficiency, the development of speaking skills, and students' perceptions of its use for speaking practice (Bukit et al., 2025; Khomariyah & Ekowijayanto, 2025; Nursuhaniah, 2025; Sakina et al., 2025). These studies found that Duolingo has been studied as a tool to support English speaking practice.

Although previous research has demonstrated Duolingo's potential in supporting English speaking skills, attention to how mobile-assisted language learning through Duolingo can contribute to the development of speaking skills from the students' perspective remains limited. In particular, the role of vocabulary learning, pronunciation practice, and repeated language exposure in supporting students' speaking skill development is still not adequately understood. This theoretical gap highlights the need for a deeper understanding of how students perceive and experience Duolingo as a tool for developing English speaking skills. Methodologically, further qualitative research is needed to explore these experiences in depth, rather than focusing primarily on speaking performance or test-based outcomes (Creswell & Poth, 2018).

Based on the gap identified above, the research question of this study is: (1) What are EFL students' experiences in improving their English speaking skills

through the use of Duolingo? (2) What challenges do EFL students face when using Duolingo to improve their English speaking skills? (3) What suggestions do EFL students offer for improving Duolingo as a tool for English speaking practice? The purpose of this study is to explore EFL students' experiences using Duolingo to support the development of their English speaking skills, identify the challenges they face when using the app, and examine their suggestions for improving Duolingo as a tool for practicing English speaking. The novelty of this study lies in its qualitative exploration of the experiences, challenges, and suggestions of EFL students regarding their use of Duolingo for English speaking practice, with a focus on the students' perspectives rather than test-based measurements.

Method

This study employs a qualitative case study design to explore EFL students' experiences using Duolingo as a tool for practicing English speaking. A qualitative approach is considered appropriate because this study focuses on students' experiences, perceptions, challenges, and suggestions, rather than on measuring their speaking performance (Creswell & Poth, 2018; Aspers & Corte, 2021). A case study was chosen because it allows for an in-depth investigation of a specific case within a real-life context (Yin, 2018). Tisdell et al. (2025) explain that case studies are suitable for examining limited systems, such as groups or programs, in depth. In this study, "case" refers to a group of EFL students at UIN Ar-Raniry who use Duolingo for English speaking practice. A case study was chosen over phenomenology because this research focuses on examining a specific and limited educational case, rather than on identifying the essence of shared life experiences.

The participants were eight EFL students in the English Language Education program at UIN Ar-Raniry. They were selected through purposive sampling based on the following criteria: (1) they were enrolled in the English Language Education program at UIN Ar-Raniry; (2) they had been using Duolingo for at least two months; (3) they had experience using Duolingo to practice speaking English; and (4) they were willing to participate in an interview. All participants were female, from the 2022 cohort, and 21 years old. Gender was not a selection criterion; all participants happened to be female because they were selected based on the established criteria.

The participants had different levels of experience using Duolingo. Based on the interviews, the duration of use ranged from about three months to three years, while the frequency of use ranged from several times a week to almost every day. This variation provided different experiences of using Duolingo for speaking practice. Data saturation was considered reached when the later interviews no longer produced substantially new themes or information, but mainly repeated or reinforced themes identified in earlier interviews. Therefore, the eight participants were considered sufficient for this study.

Data were collected through individual semi-structured interviews. An interview guide containing open-ended questions was used to explore participants' experiences, perceived benefits, motivations, vocabulary for speaking, pronunciation and fluency exercises, difficulties, and suggestions regarding Duolingo. Follow-up questions were also asked when further clarification was

needed. Interviews were recorded with participants' permission and transcribed for analysis.

Interview data were analyzed using thematic analysis following Braun and Clarke (2019). The researcher first became familiar with the transcripts by reading them repeatedly, then identified and coded relevant statements. Related codes were grouped into themes, which were then reviewed and interpreted in relation to the research questions. This analysis focused on recurring patterns in the participants' experiences, including perceived benefits, barriers, and suggestions regarding the use of Duolingo for English-speaking practice.

Results

The findings revealed three major themes that emerged from the participants' experiences of using Duolingo for English-speaking practice: (1) Learner Engagement and Perceived Speaking Development, (2) Limitations in Developing Communicative Speaking Skills, and (3) Learners' Expectations for Enhanced Speaking Practice.

1. Learner Engagement and Perceived Speaking Development

Based on the interview data, the researcher found several experiences perceived by students while using Duolingo to improve their English-speaking skills. These experiences were related to enjoyable learning experiences, learning motivation, vocabulary development, pronunciation improvement, and speaking confidence.

1.1 Enjoyable and Engaging Learning Experience

Most participants described Duolingo as a fun and engaging platform for learning English. They noted that the application offers interactive activities and creates a comfortable learning environment. Participants also mentioned that learning through Duolingo is enjoyable and less stressful, allowing them to practice English comfortably.

P1: "Duolingo has helped me practice English in enjoyable and interactive way. It makes learning less stressful and more interesting."

P4: "When using Duolingo, it has been a good experience because I can practice speaking without feeling nervous. I enjoy the activities."

P3: "My experience using Duolingo has been very positive. The lessons are interactive and easy to follow. So, I do not feel overwhelmed while learning."

P6: "Duolingo helps me practice speaking regularly and learn English in a fun way."

P8: "My experience has been good. It makes learning English feel fun and less stressful."

Based on the findings, most participants viewed Duolingo as a fun and engaging learning platform. Interactive activities and a low-pressure learning environment appeared to reduce anxiety during speaking practice and encouraged students to practice English regularly.

1.2 Motivation to Practice English Speaking

Participants reported that Duolingo increased their motivation to practice speaking English. They explained that enjoyable lessons, interactive activities, daily goals, rewards, and streak features encouraged them to continue learning and maintain consistent practice.

P1: "Using Duolingo make me more interested in practicing English speaking because the lessons are fun and easy to follow."

P4: "Yes, so far the lessons are fun and not boring."

P8: "Yes, it does. The lessons are interesting, so they make me want to keep practicing."

P6: "Yes, it does. The lessons are interactive and enjoyable, which makes me more motivated to practice speaking."

P3: "Yes, it does. The game-like design makes learning feel enjoyable rather than stressful. And features such as daily goals and rewards encourage me to keep practicing."

P5: "I use Duolingo every day because they have the feature strict in there. So, if I don't use for a day, the strict will end. So, it helps me to commit my practice daily."

Based on the findings, participants believed that Duolingo increased their motivation to practice speaking English. Fun lessons, interactive activities, and learning features encouraged them to continue practicing and maintain consistency in their learning.

1.3 Vocabulary Development for Speaking

Participants explained that Duolingo helped them learn new vocabulary through different lessons, topics, and example sentences. They also reported that repeated exposure to words helped them remember vocabulary more effectively and use it when speaking.

P1: "Duolingo introduce new words in different lessons and contexts. So, I think this helps me learn vocabulary that I can use in daily conversations."

P6: "Duolingo introduces new words in a different lesson and provides examples of how to use them in sentences."

P3: "Duolingo introduces new vocabulary through different topics and situations related to daily life."

P4: "Duolingo can help me to remember and understand with repeating the words in different exercises so I remember them more easily."

P2: "The review activities in Duolingo help me remember vocabulary, while the example sentences help me understand how to use the words correctly."

P7: "Knowing more words help me explain my ideas better and communicate more comfortably."

Based on the findings, participants believed that Duolingo helped them develop vocabulary through word exposure, contextual learning, and repeated practice. This enabled them to remember words more effectively and express their ideas more clearly in English.

1.4 Perceived Improvement in Pronunciation

Participants reported that Duolingo helped improve their pronunciation through speaking exercises. They explained that the application provided opportunities to practice pronouncing words and sentences regularly.

P1: "Duolingo provides speaking exercises that help me practice pronunciation and speaking more smoothly."

P6: "Duolingo provides speaking exercises that allow me to practice pronunciation."

P3: "The speaking exercise encourages me to practice pronouncing words and sentences regularly."

Based on the findings, participants believed that Duolingo contributed to

pronunciation improvement by providing regular speaking exercises. Frequent pronunciation practice helped students become more familiar with English sounds and word pronunciation.

1.5 Increased Confidence in Speaking English

Participants reported that using Duolingo increased their confidence when speaking English. They felt more comfortable communicating in English after learning new vocabulary and practicing pronunciation.

P6: "I feel more confident when speaking English because I have learned new words and practiced pronunciation."

P4: "I feel more confident when speaking English even though I still make a mistake sometimes."

P3: "After using Duolingo, I feel more confident in my speaking ability."

P2: "I'm also more confident when speaking English."

Based on the findings, participants believed that Duolingo increased their confidence in speaking English. Regular practice and language exposure appeared to reduce hesitation and encouraged students to communicate more comfortably in English.

2. Limitations in Developing Communicative Speaking Skills

Based on the interview data, participants identified several obstacles while using Duolingo to improve their English-speaking skills. These obstacles were related to limited opportunities for real conversation practice and limited speaking features.

2.1 Limited Opportunities for Real Conversation

Participants explained that Duolingo mainly focuses on repeating words and sentences rather than engaging learners in authentic conversations. As a result, they felt that opportunities for real communication practice were limited.

P1: "One difficulty I face is that Duolingo does not provide a real speaking partner for conversation practice. The speaking exercises are helpful but they are not the same as having a real conversation."

P7: "One of the difficulties is the lack of direct interaction with other speakers."

P8: "I think it would be better if Duolingo had more real conversation practice."

Based on the findings, participants felt that Duolingo provided limited opportunities for authentic communication and interaction with other speakers.

2.2 Limited Speaking and Pronunciation Features

Some participants indicated that Duolingo still lacked certain speaking features that could support speaking development more effectively, particularly features related to speaking interaction and pronunciation evaluation.

P2: "I think Duolingo could include more interactive speaking activities and conversation practice with other learners or maybe AI partners."

P4: "Sometimes, the app doesn't recognize my voice correctly and I don't get actual

conversation practice because this is an application and I think practicing with other people can help me improve my speaking skills.”

P5: “I think maybe Duolingo should put the feature recorded and let us to listen what we have said.”

Based on the findings, participants believed that additional speaking features could help learners evaluate and improve their speaking performance more effectively.

3. Students’ Expectations for Enhanced Speaking Practice

Based on the interview data, participants provided several suggestions for improving Duolingo as a tool for practicing English speaking.

3.1 More Real-Life and Conversation-Based Activities

Participants suggested that Duolingo should provide more opportunities for authentic conversation practice and interaction with other speakers.

P6: “adding longer speaking tasks and more real-life conversation practice could help me improve my speaking skills further.”

P7: “including more conversation-based activities could actually help improve speaking skills further.”

P8: “I think it would be better if Duolingo had more real conversation practice.”

Based on the findings, participants suggested adding more conversation-based activities and real-life speaking practice to help learners develop communication skills more effectively.

3.2 More Interactive Speaking and Pronunciation Features

Participants also suggested improving speaking-related features, including interactive speaking activities, AI speaking partners, and pronunciation recording features.

P2: “I think Duolingo could include more interactive speaking activities and conversation practice with other learners or maybe AI partners.”

P5: “I think maybe Duolingo should put the feature recorded and let us to listen what we have said.”

Based on the findings, participants suggested that Duolingo should provide more interactive speaking features and pronunciation feedback tools to support learners in evaluating and improving their speaking performance.

Discussion

The results of this study indicate that participants generally had a positive perception of using Duolingo to improve their speaking skills. Participants viewed Duolingo as a useful and easily accessible tool that allowed them to practice English regularly. They believed that the app supported the development of their speaking skills through interactive lessons and speaking activities. These findings align with research conducted by Purwanto (2023), who found that students view

Duolingo as an easy-to-use, engaging, and effective app for supporting English vocabulary learning while boosting their motivation and self-confidence. Similarly, Cho et al. (2018) reported that mobile-assisted language learning has a positive impact on students' language achievement. Similar to these studies, the participants in this study appreciated Duolingo's user-friendly interface, engaging features, and flexibility, which made learning more accessible and enjoyable. These similarities indicate that Duolingo provides a positive learning experience that encourages participants to practice speaking English more consistently. These findings show that Duolingo's flexibility allows learners to practice English anytime and anywhere, making it easier for them to maintain a regular speaking practice. As a result, learners tend to develop consistent study habits that support the improvement of their speaking skills. These findings provide insight into how students experience Duolingo as a mobile-assisted language learning tool for supporting English speaking practice.

Most participants reported that speaking exercises and pronunciation activities helped them pronounce English words more accurately. Through repeated practice, they became more familiar with the sounds of English and learned how to pronounce words correctly. These findings are consistent with Syafrizal et al, (2022), who found that students who used Duolingo improved their speaking skills and became more confident in oral communication through regular practice. In line with this research, the participants believed that regular pronunciation practice helped them speak more clearly and confidently. This suggests that repeated exposure to speaking activities can help learners become more aware of correct pronunciation and develop greater confidence when speaking English. Regular repetition also helps learners become more familiar with the sounds of English and its pronunciation patterns. Ongoing practice allows learners to reduce pronunciation errors and speak more naturally over time. From the participants' perspectives, repeated pronunciation practice may support the accuracy and clarity of their spoken production. However, these findings reflect participants' perceived improvement rather than objectively measured gains in speaking performance.

The findings further indicate that Duolingo helps participants expand their vocabulary. Participants reported that they learned new words and expressions from various lessons and topics, which they could then use in conversation. Vocabulary development appears to support improvements in speaking skills, as learners need an adequate vocabulary to express their ideas effectively. These findings align with the research by Ningtyas and Reftyawati (2024), who found that Duolingo helps students practice vocabulary through interactive exercises and motivates them to use new words in simple conversations. Similarly, Alim et al. (2025) reported that game-based activities on Duolingo help EFL students learn and retain new vocabulary more effectively, while Apoko et al. (2023) found that mobile-based learning through Duolingo improves vocabulary mastery and encourages students to practice regularly. Similar to these studies, the participants in this study believed that learning new vocabulary through Duolingo helped them communicate more effectively in English. These findings also support the idea that vocabulary is an important component of speaking, as students need an adequate vocabulary to express their thoughts clearly and communicate effectively. This

suggests that vocabulary knowledge serves as a foundation for speaking because learners need sufficient words to express ideas, respond to others, and participate in communication (Uchihara & Clenton, 2023). This finding provides further insight into how vocabulary learning through Duolingo may support speaking development from the students' perspective.

The findings also revealed several challenges participants faced when using Duolingo to improve their speaking skills. Participants reported that the app provides only limited opportunities for authentic communication and interaction with other speakers. They explained that most speaking activities focus on repeating words and sentences, rather than on real conversations. These findings suggest that while Duolingo supports individual speaking practice, learners may still need additional opportunities to practice communicating in real-life situations. This finding indicates that although Duolingo provides controlled speaking practice, it cannot fully replace social interaction where learners negotiate meaning and respond spontaneously. These findings align with the findings of Lo (2025) research, which reported that while Duolingo supports listening and speaking practice, the platform offers only limited opportunities for conversation practice in real-life situations. Therefore, learners still need authentic communication with other speakers to further develop their speaking fluency and communication skills. From the participants' experiences, the limited opportunities for authentic interaction represent an important limitation of using Duolingo for speaking practice.

Participants also provided several suggestions for improving Duolingo as a tool for speaking practice. They suggested adding more real-life conversation activities, interactive speaking tasks, AI speaking partners, and voice-recording features. These suggestions are closely related to the challenges reported by participants, particularly the limited opportunities for authentic communication. These suggestions indicate that learners expect more interactive speaking opportunities to support the development of their English-speaking skills. These recommendations are consistent with previous studies that suggest language-learning apps should provide more authentic speaking activities and interactive communication features. Such improvements can help learners practice speaking in more meaningful and realistic situations.

Overall, these findings suggest that Duolingo is a useful tool for supporting the development of speaking skills among learners of English as a foreign language (EFL), particularly in vocabulary building, pronunciation practice, and motivation to learn. However, Duolingo cannot replace authentic communication practice. Therefore, combining Duolingo with real-life speaking activities can provide learners with better opportunities to develop their speaking skills. These findings contribute to a deeper understanding of Duolingo from the students' perspective by highlighting their experiences, challenges, and suggestions for English speaking practice.

Conclusion

This study explored EFL students' experiences in improving their English-speaking skills by using Duolingo. The findings showed that students generally had positive experiences with the application. Duolingo provided an enjoyable and

interesting learning experience, increased students' motivation to practice speaking, helped them develop vocabulary for speaking, improved pronunciation, and increased their confidence in speaking English. These findings indicate that Duolingo can support speaking development through regular and interactive learning activities.

However, the study also found several obstacles. Participants reported that Duolingo provides limited opportunities for real conversation practice and lacks some speaking features that could better support speaking development. As a result, students felt that the application could not fully replace authentic communication practice with other speakers.

This study is limited by its small number of participants and its focus on EFL students at one university. Therefore, the findings cannot be generalized to all EFL learners in different educational contexts.

Based on the findings, it is recommended that future researchers explore the effectiveness of Duolingo with a larger number of participants and in different educational settings. Future studies may also investigate the integration of Duolingo with real conversation activities to better support speaking development. In addition, Duolingo developers may consider adding more interactive speaking features, real-life conversation practice, AI speaking partners, and pronunciation recording tools to enhance students' speaking practice experiences.

References

- Alim, S., Aisyah, S., Sabat, Y., Hastuti, U. N., & Andayani, E. A. (2025). Gamified vocabulary learning: EFL students' perceptions of using Duolingo to enhance English vocabulary mastery. *Journal of English Language and Education*, 10(4), 493–500.
- Amiruddin, A. (2019). Researching students' oral performance: What's wrong with their use of grammar, vocabulary and pronunciation? *Englisia: Journal of Language, Education, and Humanities*, 6(2), 88–101. <https://doi.org/10.22373/ej.v6i2.3485>.
- Apoko, T. W., Dunggio, A. A., & Chong, S. L. (2023). The students' perceptions on the use of mobile-assisted language learning through Duolingo in improving vocabulary mastery at the tertiary level. *English Review: Journal of English Education*, 11(1), 17–26. <https://doi.org/10.25134/erjee.v11i1.7069>
- Aspers, P., & Corte, U. (2021). What is qualitative in research. *Qualitative Sociology*, 44(4), 599–608. <https://doi.org/10.1007/s11133-021-09497-w>
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589–597.
- Bukit, R. D. B., Prawiyata, Y. D., Wariyati, W., & Arfanti, Y. (2025). Students' speaking skill analysis using Duolingo application. *Jurnal Pendidikan Bahasa*, 15(3), 213–221. <https://doi.org/10.37630/jpb.v15i3.3001>
- Cho, K., Lee, S., Joo, M. H., & Becker, B. J. (2018). The effects of using mobile devices on student achievement in language learning: A meta-analysis. *Education sciences*, 8(3), 105. <https://doi.org/10.3390/educsci8030105>
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design*:

- Choosing among five approaches (4th ed.). Sage Publications.
- Ding, J. (2021). Exploring effective teacher-student interpersonal interaction strategies in English as a foreign language listening and speaking class. *Frontiers in Psychology*, 12, 765496. <https://doi.org/10.3389/fpsyg.2021.765496>
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Febriani, R., Bunau, E., Surmiyati, Yuliana, Y. G. S., & Salam, U. (2023). Improving students' English vocabulary using Duolingo application. *Journal of Scientific Research, Education, and Technology (JSRET)*, 2(4), 1789–1799. <https://doi.org/10.58526/jsret.v2i4.297>
- Khomariyah, Y., & Ekowijayanto, M. (2025). Duolingo as a digital tool for enhancing English as a foreign language (EFL) speaking proficiency at Zain Academy. RIGGS: *Journal of Artificial Intelligence and Digital Business*, 4(2), 6482–6492. <https://doi.org/10.31004/riggs.v4i2.1670>
- Leonard, K. R., & Shea, C. E. (2017). L2 speaking development during study abroad: Fluency, accuracy, complexity, and underlying cognitive factors. *The Modern Language Journal*, 101(1), 179–193.
- Lisan, K., & Hanifah, S. N. (2024). An analysis of students' speaking ability in using Duolingo application. *Darussalam English Journal (DEJ)*, 4(1), 71–84. <https://doi.org/10.30739/dej.v4i1.3023>
- Lo, Y. Y., Shah, S. S. A., Hasim, Z., Senom, F., Saad, M. R. M., & Thienpermpool, P. (2025). Thai EFL university students' views on the effectiveness of Duolingo for enhancing listening and speaking skills. *Studies in English Language and Education*, 12(1), 154–171.
- Muluk, S., Furqan, F., Sulaiman, M., Maskur, M., & Mayastika, K. (2024). The impact of Web 2.0 language learning applications on students' vocabulary acquisition and perception. *IJEE (Indonesian Journal of English Education)*, 11(1), 1–14. <https://doi.org/10.15408/ijee.v11i1.39095>
- Nation, P. (2018). Reading a whole book to learn vocabulary. *ITL–International Journal of Applied Linguistics*, 169(1), 30–43. <https://doi.org/10.1075/itl.00005.nat>
- Ningtyas, D. A. P., & Reftyawati, D. (2024). Teaching vocabulary using the Duolingo application in junior high school. *Fonologi: Jurnal Ilmuan Bahasa dan Sastra Inggris*, 2(3), 310–324. <https://doi.org/10.61132/fonologi.v2i3.960>
- Nurhayati, E., & Suryaman, M. (2023). The implementation of the Duolingo app in increasing students' vocabulary mastery. *Jurnal Pendidikan Bahasa Inggris Undiksha*, 11(3), 258–263. <https://doi.org/10.23887/jpbi.v11i3.47287>
- Nursuhaniah, N., Ruminda., Juhana. (2025). Improving students' speaking skill and interest through Duolingo as gamification application. *Indonesian Journal of Learning and Instruction*, 8(1), 23–32. <https://doi.org/10.25134/ijli.v8i1.11625>
- Permatasari, P., Sudirman, A., & Munawaroh, T. (2022). The effect of using Duolingo application towards students' vocabulary mastery at the eighth grade of SMPN 2 Banjarsari Lebak-Banten. *Journal of English Language Learning*,

- 6(2), 142–148. <https://doi.org/10.31949/jell.v6i2.3624>
- Purwanto, A. A. Syafryadin (2023). Students' perception on using Duolingo for learning English vocabulary. *Journal of English Teaching*, 9(1), 70–82. <https://doi.org/10.33541/jet.v9i1.4506>
- Roulston, K. (2021). *Interviewing: A guide to theory and practice*. Sage Publications.
- Sakina, R., Kulsum, E. M., & Hardiani, P. S. (2025). Students' perceptions of using Duolingo application in speaking skills. *JEPAL (Journal of English Pedagogy and Applied Linguistics)*, 6(1), 90-106. <https://doi.org/10.32627/jepal.v6i1.1460>
- Syafrizal, S., Cahyaningrum, N. S., & Syamsun, T. R. (2022). Duo Lingo Application for Teaching Speaking Skills Class: Students' Perception of Speech Ability. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 10(1), 1041-1049. <https://doi.org/10.24256/ideas.v10i1.2881>
- Syahabuddin, K., Sa'I, S. I., Alfiatunnur, A., Nashriyah, N., Sriyanda, R., & Al-Darary, T. (2025). Metacognition and modality: Exploring gender disparity in the frequency of vocabulary learning strategies among university ESL students. *Gender Equality: International Journal of Child and Gender Studies*, 11(2), 286–300. <https://doi.org/10.22373/equality.v11i2.32046>
- Tisdell, E. J., Merriam, S. B., & Stuckey-Peyrot, H. L. (2025). *Qualitative research: A guide to design and implementation*. John Wiley & Sons.
- Uchihara, T., & Clenton, J. (2023). The role of spoken vocabulary knowledge in second language speaking proficiency. *The Language Learning Journal*, 51(3), 376-393. <https://doi.org/10.1080/09571736.2022.2080856>
- Yin, R. K. (2018). *Case study research and applications (6th ed.)*. Thousand Oaks, CA: Sage.

