Article

Duolingo and The Development of Speaking Skills: A Case Study

https://doi.org/10.31004/jele.v10i6.1703

*Nofry Frans, Vera Wahani, Gabriella A,D Baureh[abc] iD

123Universitas Klabat, Indonesia

Corresponding Author: nofryfrans@unklab.ac.id

A B S T R A C T

Speaking is a crucial productive skill in global communication, yet many learners struggle to develop it due to shyness, limited practice opportunities, and the lack of learning media that support active speaking. This study aims to investigate the effect of Duolingo use on the development of english speaking skills among English language students at Klabat University in the second semester of the 2024/2025 academic year. Using a mixed-methods approach with an explanatory sequential design, quantitative data were collected through questionnaires and followed by qualitative data from open-ended responses to deepen the interpretation of findings. The results show that several Duolingo features significantly assist or challenge the development of speaking skills and contribute positively to students' communicative competence, particularly in linguistic and discourse aspects. However, Duolingo use did not have a significant impact on students' self-confidence in speaking English. The study concludes that while Duolingo is beneficial as a supplementary tool for improving certain components of speaking skills, enhancements are needed—such as two-way interaction features, clearer evaluation mechanisms, and more detailed feedback—to maximize its effectiveness in supporting learners' oral communication development.

Keywords: *Duolingo, Speaking Skills*

Check for updates
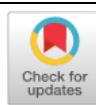
INTRODUCTION

In the global era, speaking skills have become essential. Mastering speaking skills requires not only vocabulary and correct grammar but also the ability to interact verbally, convey ideas clearly, and use language in real communicative contexts. Speaking and listening are productive language skills that play a crucial role in language learning (Stone, 2020). One of the essential competencies a person must possess today is English proficiency, as it enables academic advancement, broader career opportunities, and access to global communication networks (Council, 2021).

Speaking, as a productive skill, involves the ability to express ideas, thoughts, and feelings verbally in a fluent and context-appropriate manner (Fransisca, 2023). It encompasses not only linguistic components such as vocabulary, pronunciation, and grammatical accuracy but also expressive and interactive dimensions such as fluency, coherence, conversational strategies, and pragmatic understanding. Speaking is a complex cognitive and affective process that integrates mental planning, emotional readiness, and motor coordination to produce comprehensible speech. Commonly used indicators of speaking ability include fluency, accuracy, pronunciation, vocabulary range, and the integration of ideas when conveying a message (Ambarita et al., 2022). For university students, mastery of speaking skills plays a central role in strengthening communicative confidence and achieving overall English competence.

Despite its importance, developing English speaking skills remains a challenge for many learners. Findings from initial interviews with students at Klabat University show that several students are still shy and lack confidence in speaking English. One second-semester

student, for example, expressed that she often fears being laughed at for incorrect pronunciation. This aligns with Permatasari & Wulandari (2025), who argue that low confidence can inhibit oral communication, highlighting the need for motivational support and effective learning strategies.

Motivation is recognized as a critical determinant of student success in language learning. Students with strong motivation tend to engage more actively, persist through difficulties, and sustain their focus on achieving their learning goals (Suharni, 2021). In speaking practice, which requires courage and continuous interaction, motivation becomes even more central. Desiana et al. (2020) found that high learning motivation significantly contributes to improved speaking performance. Likewise, Sasrawangi et al. (2021) highlight that engaging learning media enhance students' intrinsic motivation, making the learning process more interactive and enjoyable.

In recent years, digital learning applications have played an increasingly important role in supporting foreign-language learning, including speaking. Mobile-assisted language learning (MALL) technologies, such as Duolingo, Babbel, Busuu, and Memrise, provide interactive features that allow learners to access materials anytime and anywhere, practice pronunciation repeatedly, receive instant feedback, and engage with gamified learning environments. Digital applications support speaking development through features such as speech recognition, pronunciation drills, vocabulary scaffolding, real-time feedback, and communicative tasks designed to simulate real interaction. Research indicates that such apps can strengthen learner autonomy, enhance engagement, and supplement formal classroom instruction by offering continuous practice outside class hours Wicaksono (2022).

Duolingo, as one of the most widely used digital language-learning platforms, integrates gamification elements—including points, streaks, badges, and competitive leaderboards—to maintain learner motivation. The app provides structured speaking exercises with speech recognition technology, encouraging learners to practice pronunciation and oral production in a low-anxiety environment. These affordances are particularly beneficial for learners who experience shyness or low confidence when speaking in front of peers.

To understand how learners perceive and adopt such technologies, the Technology Acceptance Model (TAM) provides a relevant theoretical framework. According to Nuraini (2019), TAM examines how information-technology systems shape user behavior based on perceived usefulness and perceived ease of use. Wicaksono (2022) adds that TAM is useful for predicting the extent to which learners are willing to adopt digital learning tools. In this study, TAM helps explain how students perceive Duolingo's speaking-related features—specifically which features they find helpful, motivating, or challenging during speaking practice.

METHOD

This study employed a mixed-methods approach using an **explanatory sequential design**, in which quantitative data were collected first and then followed by qualitative data to explain and deepen the initial results. The general objective of the study was to investigate the effect of Duolingo use on the development of English speaking skills among General English students at Klabat University in the even semester of the 2024/2025 academic year. Specifically, the study aimed to analyze students' perceptions of Duolingo features that were most helpful or challenging, examine the influence of the application on students' confidence in speaking English, evaluate changes in communicative competence—including linguistic, strategic, sociolinguistic, and discourse elements—and develop pedagogical recommendations for integrating digital learning applications into university-level English instruction. The population consisted of 350 General English students, of whom 177 voluntarily participated. Data were obtained through a structured questionnaire using a 5-point Likert scale and open-ended questions. The research procedures followed the explanatory sequential model, beginning with initial observations and the distribution of closed-ended questionnaires as quantitative data, followed by open-ended questionnaires and

interviews during the qualitative phase. Quantitative analysis employed multiple linear regression, while qualitative responses were analyzed using triangulation to ensure the credibility and integration of findings across both data sources.

FINDINGS AND DISCUSSION

Classical Assumption Test

The normality test for research data can be performed using statistical testing using the Kolmogorov-Smirnov test. The Kolmogorov-Smirnov Monte Carlo sig. test is used to determine the normal distribution of data if the Monte Carlo significance level is greater than 5%. Research by Mardiyansyah et al. (2023), demonstrated that if the asymp. Sig. value is not normally distributed a Monte Carlo value is used to determine the possibility of a normal distribution.

One-Sample Kolmogorov-Smirnov Test

			Unstandardized Residual
N			176
Normal Parameters[a,b]	Mean		.0000000
	Std. Deviation		2.55879409
Most Extreme Differences	Absolute		.078
	Positive		.078
	Negative		-.044
Test Statistic			.078
Asymp. Sig. (2-tailed)			.011[c]
Monte Carlo Sig. (2-tailed)	Sig.		.226[d]
	99% Confidence Interval	Lower Bound	.215
		Upper Bound	.237

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. Based on 10000 sampled tables with starting seed 2000000.

Figure 1. Normality Test Monte Carlo

Based on the Kolmogorov-Smirnov test, the Monte Carlo sig. value is 0.226, which is greater than 5%. The test results indicate that the data can be considered normally distributed. Therefore, it passes the data normality test because the normality requirements in the regression model are met.

The heteroscedasticity test aims to determine whether there is unequal variance in the residuals from one observation to another in the regression model. The method used to detect the presence or absence of heteroscedasticity is through a scatterplot test. Research data is considered good if there is no heteroscedasticity. Data is said to be free of heteroscedasticity if there is no clear pattern in the image and the points are spread above and below the number 0 on the Y-axis.
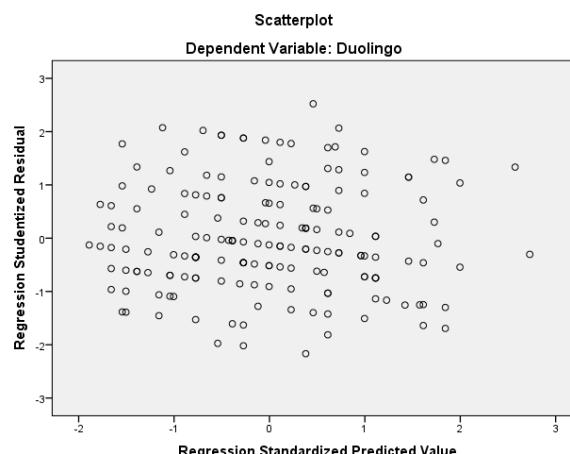

Figure 2. The Heteroscedasticity Test with Scatterplot

Based on the heteroscedasticity test, observed using the scatterplot, it is apparent that no dotted pattern is formed, and the dots are spread both below and above the 0 axis. This condition can be stated if the data formed in the regression model is homoscedastic or heteroscedasticity does not occur. Therefore, the test carried out is met or passes the data heteroscedasticity.

Multicollinearity testing for research data can be determined by examining the variance inflation factor (VIF). Research data is considered good if there is no multicollinearity. Data is considered free from multicollinearity if the obtained regression model shows a tolerance value ≥ 0.10 or equal to a VIF value ≤ 10.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.738	1.381		5.603	.000		
	Skills	.264	.097	.208	2.711	.007	.945	1.059
	Confidence	-.061	.114	-.041	-.536	.593	.945	1.059

a. Dependent Variable: Duolingo

Figure 3. The Multicollinearuty Test

Based on the multicollinearity test seen in the collinearity column in the figure, the T value is greater than 0.10 and the VIF is less than 10. This condition can be stated if the data formed does not contain multicollinearity. So the test carried out is fulfilled or passes the data multicollinearity test.

Hypothesis Testing

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.738	1.381		5.603	.000		
	Skills	.264	.097	.208	2.711	.007	.945	1.059
	Confidence	-.061	.114	-.041	-.536	.593	.945	1.059

a. Dependent Variable: Duolingo

Figure 4. Hypothesis Testing 1 & 2

Hypothesis 1: Based on individual testing, the speaking skill obtained was 2.711, indicating a positive score, with a significance level of 0.07. This indicates that the use of Duolingo media has a significant impact and will improve the speaking skills of Klabat University students.

Hypothesis 2: Based on individual testing, the speaking confidence obtained was -0.536, meaning negative, while the significance value was 0.593. This condition indicates that the use of Duolingo media does not have a significant effect and its influence will increase the self-confidence of Klabat University students.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.740	2	24.370	3.680	.027[b]
	Residual	1145.800	173	6.623		
	Total	1194.540	175			

a. Dependent Variable: Duolingo

b. Predictors: (Constant), Confidence, Skills

Figure 5. Hypothesis Testing 1 & 2

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.202[a]	.041	.030	2.57354

a. Predictors: (Constant), Confidence, Skills

b. Dependent Variable: Duolingo

Figure 6. Hypothesis Testing 3

Hypothesis 3: Based on individual testing, the Duolingo contribute to the overall development of students' communicative competence in English obtained was the significance value was 0.027 and adjusted R² was 0.03. This condition indicates that the use of Duolingo media has contributed to providing a significant overall influence and its influence can develop the skills of Klabat University students in speaking English.

Hypothesis 4: Based on the results of a questionnaire or open-ended questions to 176 Klabat University students regarding pedagogical recommendations for using Duolingo. The first question regarding the advantages or preferences of the Duolingo application in improving English skills, the majority of students liked the Duolingo application. The second question regarding features that need to be improved in the Duolingo application, showed that there is a need for two-way features, evaluation and feedback features, and improvements to the Duolingo application.

Discussions

Specific features of Duolingo in improving English speaking skills

Testing with Klabat University students yielded a speaking skill score of 2.711, indicating a positive score at the 0.07 significance level. This indicates that using Duolingo as a learning medium has a significant impact and has the potential to improve students' speaking skills. These results imply that the app's features are well-received by students and provide benefits in developing speaking skills.

Based on these results, the specific Duolingo features that students perceive as helpful are likely related to the perceived ease of use (PEOU) and perceived usefulness (PU) aspects of the TAM. For example, Duolingo's automatic pronunciation practice, instant feedback, and gamification provide students with perceived ease and relevance, leading them to use the app regularly. This aligns with research by Sulistiyo et al. (2022), which shows that the PEOU and PU variables in the context of ICT for English learning significantly influence technology use.

From the perspective of Communicative Competence Theory, learning to speak involves not only linguistic aspects such as grammar and pronunciation, but also sociolinguistic and strategic aspects (e.g., the ability to adapt to context and choose communication strategies). According to Fauziati (2015) communicative competence encompasses the ability to use language in real-life situations. Duolingo's features, which allow for voice practice, recording, and conversation simulations, can contribute to this aspect-that is, practicing speaking in real-life situations, even in a digital environment.

The Duolingo app features students found most helpful were those that were easy to access and understand (touching PEOU) and those that significantly improved their speaking skills (touching PU). Consequently, the app's acceptance was high, leading to intensive use. This intensive use opened up opportunities for repeated speaking practice, which, within the Communicative Competence framework, helps improve fluency, pronunciation, clarity, and communication strategies. Conversely, the features students cited as challenges-such as limited two-way interaction or less personalized feedback-reflected the gap between digital practice and real-life speaking contexts, resulting in learning that did not fully address the sociolinguistic and strategic aspects of communicative competence.

The results of this study align with various previous studies highlighting the effectiveness of using Duolingo in improving English speaking skills. Research by Agustina &

Khawas (2024) showed the use of Duolingo significantly improved students' vocabulary mastery, as seen from the increase in the average post-test score compared to the pre-test. Furthermore, research by Khomariyah & Ekowijayanto (2025) found that the use of artificial intelligence-based features in Duolingo was able to improve the speaking fluency of EFL students at Zain Academy, while also fostering learning motivation through an interactive digital learning approach. Meanwhile, Hanifah & Lisan (2024) in their research concluded that speaking practice in the Duolingo application had a significant impact on increasing students' vocabulary retention and pronunciation which directly strengthened their speaking skills.

The use of Duolingo in influencing English speaking confidence

The study showed that the use of Duolingo did not significantly increase students' confidence in speaking English—as evidenced by a negative score (-0.536) and a p-value of 0.593 (>0.05), indicating that the positive influence hypothesis was not proven in this context. This condition indicates that the use of Duolingo media does not have a significant impact and its influence will increase the confidence of second-semester Klabat University students.

Based on the TAM theory, students' level of acceptance of technology is highly dependent on two main factors: perceived usefulness (PU) and perceived ease of use (PEOU) (Lin & Yu, 2023). If students do not perceive the ease and tangible benefits of Duolingo in increasing their speaking confidence, then the use of the technology will not have a significant impact on affective aspects such as self-confidence. In the context of this study, Duolingo's relatively passive features such as one-way pronunciation practice and automatic feedback— do not provide an authentic interaction experience that can foster students' confidence in real speaking situations.

From a Self-Determination Theory (SDT) perspective, a person's motivation and self-confidence will increase if the basic psychological needs of autonomy, competence, and relatedness are met. However, in this case, the use of Duolingo does not seem to fully meet these needs (Alamer & Almulhim, 2021). Students may feel a lack of autonomy because learning activities are limited by the application system, perceived competence does not increase because the feedback provided is not personalized, and low connectedness due to minimal social interaction with other users. The unfulfillment of these three aspects explains why the use of Duolingo is unable to significantly increase students' confidence in speaking English.

Several studies have shown that using Duolingo can improve speaking confidence in EFL competitions. For example, a study by Khomariyah & Ekowijayanto (2025) found that using Duolingo positively contributed to building students' English speaking confidence at Zain Academy.In addition, research by Pusparini et al. (2025) suggests that Duolingo not only improves speaking skills, but is also able to reduce levels of speaking anxiety (speaking anxiety) through artificial intelligence-based practice features that provide instant feedback to users. However, our results differ-confidence did not increase significantly-suggesting that in the context of second-semester university students, there may be additional factors such as a real-life speaking environment, face-to-face interactions, or speaking anxiety that the app has not addressed.

Duolingo contribute to the of students' communicative competence in English

Based on the test results, a significance value of 0.027 was obtained with an Adjusted R² value of 0.03. These results indicate that the use of Duolingo media has a significant influence on improving students' speaking skills and self-confidence simultaneously in speaking English. Although the coefficient of determination value shows a relatively small contribution, these results still confirm that Duolingo plays a role in supporting the development of students' communicative competence, including affective aspects such as self-confidence when speaking. Thus, this application can be considered as a learning medium that contributes positively to the development of speaking skills of second-semester students at Klabat University.

These findings align with the Technology Acceptance Model (TAM), which explains that the acceptance and effectiveness of a learning technology are influenced by two main constructs: perceived usefulness (PU) and perceived ease of use (PEOU) (Lin & Yu, 2023).
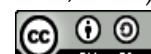
Students who perceive Duolingo as easy to use and beneficial for improving their speaking skills will be more motivated to practice independently. This app provides game-based exercises (gamification), a points system, and instant feedback, creating a fun and stress-free learning environment. These aspects support increased student motivation and confidence in actively using English.

Furthermore, these results can be explained by the Affective Filter Hypothesis proposed by Stephen Krashen (1982). According to this theory, successful language learning is strongly influenced by affective factors such as motivation, self-confidence, and anxiety. When students' affective filters are low meaning they learn in a calm state, are not afraid of making mistakes, and feel motivated language input can be absorbed more effectively. A relaxed and stress-free learning environment like that offered by Duolingo allows students to practice speaking without fear of being judged, thereby reducing anxiety (speaking anxiety) and increasing self-confidence. Application-based learning technology can reduce anxiety levels and improve speaking performance by creating an interactive and supportive learning atmosphere.

The relationship between TAM and the Affective Filter Hypothesis strengthens the findings of this study. When students perceive Duolingo as easy to use (PEOU) and useful (PU), they are more motivated to practice actively, which in turn lowers their affective filter. In other words, technology acceptance (TAM) supports the creation of a positive affective state (Affective Filter Hypothesis), so that students feel more comfortable, confident, and less afraid of making mistakes when speaking English. The combination of these two theories explains that increased student confidence is not only a result of technology use, but also from the conducive emotional state facilitated by digital learning media such as Duolingo.

The results of this study align with several previous research findings showing that Duolingo contributes to improving students' confidence and speaking skills. Research by Pusparini et al. (2025) stated that using Duolingo can reduce speaking anxiety and increase the confidence of vocational students through artificial intelligence-based features that provide instant feedback. Similarly, Khomariyah & Ekowijayanto (2025) found that Duolingo increases students' confidence in speaking due to its interactivity and gamification design that makes students more comfortable practicing. These studies reinforce that implementing Duolingo in English learning can foster a fun learning environment, reduce affective barriers, and increase students' confidence to speak more naturally.

Pedagogical recommendations for using Duolingo as a digital language learning medium

Based on the responses from 176 respondents, it can be concluded that students generally like Duolingo because it is practical, engaging, and motivating. However, they also want improvements in interactive features and speaking feedback to make the app more effective in practicing their English speaking skills.

The results showed that most students liked using Duolingo because it was attractive, easy to use, and provided a fun and engaging learning experience. They felt motivated by the level system, points, and rewards that made learning feel like play. Furthermore, pronunciation and vocabulary exercises helped them improve their speaking skills and understanding of everyday situations. Several students also mentioned that learning moments were Duolingo's main advantage.

Regarding features that need improvement, many students highlighted that Duolingo is still limited in interactive speaking practice because conversations are only one-way and based on recordings. They hoped for a two-way conversation feature with more natural voice responses. Furthermore, some students felt the difficulty level between levels was inconsistent, so they wanted a clearer evaluation and feedback system. Some also suggested that the app add more in-depth grammar explanations so users understand the context before speaking.

The system of levels, points, and rewards makes learning feel like play, reducing boredom and increasing engagement. Pronunciation and vocabulary exercises are considered effective in aiding comprehension and improving speaking skills in everyday situations. However, some respondents stated that Duolingo's speaking feature is still limited in its

interactive nature—due to its one-way nature and audio recording-based nature—and does not provide sufficiently in-depth feedback. Students also hoped for a two-way conversation feature with natural voice responses and more comprehensive grammar explanations to clarify the context of language use.

These findings are highly relevant to the concept of Mobile-Assisted Language Learning (MALL) proposed by Kukulska-Hulme & Shield (2008), where mobile-based technology like Duolingo provides learners with the opportunity to learn flexibly, personally, and independently anytime and anywhere (Nuraeni et al., 2020). According to this theory, language learning through mobile devices supports not only cognitive aspects (mastery of language comprehension and structure) but also affective aspects such as motivation, autonomy, and learning engagement. Duolingo, a gamification-based application, has successfully reduced learning barriers by making the process more enjoyable and reducing stress (learning anxiety).

The research findings indicate that students feel more confident practicing speaking through the app because the learning environment is free from social pressure. This aligns with the MALL theory that mobile-based learning can boost self-confidence because users have full control over the time, duration, and frequency of learning.

However, the MALL theory also emphasizes that the success of mobile learning is largely determined by the level of interactivity and collaboration the app provides. When Duolingo only features one-way speaking exercises without real social interaction, the learning experience becomes less immersive. This was also conveyed by Sutrisna (2025), who found that although MALL is effective in increasing vocabulary and motivation, speaking skills that require social interaction do not develop optimally without the support of two-way communication activities.

When linked to MALL theory, the results of this study confirm that Duolingo's gamification features and shared usage align with the "ubiquity" and "autonomy" aspects of mobile learning. Klabat University students appreciated the freedom to learn without pressure, which allowed them to lower their affective filters and build confidence in speaking, in line with the principles proposed by Krashen in the Affective Filter Hypothesis. However, student responses also revealed a pedagogical gap: Duolingo still lacks the "collaboration" and "authentic communication" aspects that are essential elements of MALL. In other words, the app excels at practice-based learning but falls short in communication-based learning, which is the core of speaking skills.

Several previous studies support these findings. Research by Sakkir & Syamsuddin (2023) showed that the use of Duolingo in MALL-based learning increased students' motivation and vocabulary, but was not fully effective in speaking interactions due to limited conversational features. Similarly, Fitriani (2024) stated that although Duolingo contributed to improved learning outcomes and positive perceptions of language learning, its limited social context posed a challenge in developing natural speaking skills. Recent research by Apoko et al. (2023) also showed similar results, indicating that Duolingo had a positive impact on vocabulary retention but needed innovation to strengthen user interaction in speaking contexts. Furthermore, Sutrisna (2025) emphasized that the integration of MALL into learning must emphasize interactivity and personalization so that learners can develop confidence in communicating in the target language.

CONCLUSIONS

The findings of this study indicate that Duolingo plays a meaningful role in supporting the development of students' english speaking skills. Several features—particularly pronunciation practice, vocabulary reinforcement, and interactive exercises—were perceived as helpful for improving linguistic, discourse, and strategic aspects of communicative competence among General English students at Klabat University. However, despite these benefits, the use of Duolingo did not show a significant effect on students' self-confidence in speaking English, suggesting that psychological factors may require more direct interpersonal
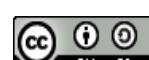
support than what digital applications alone can provide. These results align with the research objectives, which were to examine students' perceptions of Duolingo features, evaluate its influence on speaking confidence, assess changes in communicative competence, and formulate recommendations for curriculum integration. The study also offers several practical implications. For teachers, integrating Duolingo as a supplementary tool can enhance speaking practice outside the classroom and provide individualized learning opportunities. For students, the platform offers flexible, self-paced speaking practice in a low-anxiety environment, which can strengthen foundational skills. For developers, the findings highlight the need to improve Duolingo's two-way speaking features, expand evaluation and feedback mechanisms, and incorporate more authentic communicative tasks to better support confidence-building and interactive speaking practice. This research, however, is not without limitations. The study relied on self-reported data and a single institutional context, which may limit the generalizability of the findings. Additionally, speaking performance was not measured through direct oral proficiency tests, which could have provided more objective evidence of improvement. Future research may explore the integration of Duolingo with face-to-face speaking interventions, compare the effectiveness of Duolingo with other mobile language-learning platforms, or employ experimental and performance-based assessments to obtain a more comprehensive picture of speaking skill development. Longitudinal studies could also be conducted to examine how sustained use of digital learning applications influences both competence and confidence over time.

REFERENCES

Agustina, E., & Khawas, U. T. (2024). The Effect of Using Duolingo to Improve Seventh Grade Students' Vocabulary. *Jurnal Abdi Insani*, *11*(2), 1215–1225.

Alamer, A., & Almulhim, F. (2021). The Interrelation Between Language Anxiety and Self-Determined Motivation; A Mixed Methods Approach. *Frontiers in Education*, *6*(618655), 1–12.

Ambarita, C. S., Siahaan, J., Purba, R., & Daulay, I. K. (2022). Improving Students' Speaking Skills By Using Storytelling. *Linguistic, English Education and Art (LEEA) Journal*, *6*(1), 200–208.

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 Vocabularymasteryat The Tertiary Level. *English Review: Journal of English Education*, *11*(1), 11–26.

Council, B. (2021). *English in numbers*. British Council. https://www.britishcouncil.cn/en/EnglishGreat/numbers?utm_source=chatgpt.com

Desiana, D., Yundayani, A., & Susilawati. (2020). Hubungan antara Motivasi Siswa terhadap Kemampuan Berbicara Bahasa Inggris. *Prosiding Seminar Nasional Pendidikan STKIP Kusuma Negara II*, 54–59.

Fauziati, E. (2015). A State of the Art of Communicative Competence Theory. *Ahmad Dahlan Journal of English Studies (ADJES)*, *2*(2), 78–86.

Fitriani. (2024). Duolingo in English education: Evidence-based perspectives on learning outcomes. *Curricula: Journal of Curriculum Development*, *3*(2), 333–346.

Fransisca, V. (2023). Improved Speaking Skills In English Language Learning In Elementary SchoolS. *Jurnal Pendidikan Indonesia*, *4*(12), 1310–1317.

Hanifah, S. N., & Lisan, K. H. (2024). An Analysis Of Students' Speaking Ability In Using Duolinguoapplication. *Darussalam English Journal (DEJ)*, *4*(1), 71–85.

Khomariyah, Y., & Ekowijayanto, M. (2025). Duolingo As aDigital Tool for Enhancing English As aForeign Language (EFL) Speaking Proficiency at Zain Academy. *Journal of Artificial Intelligence and Digital Business (RIGGS)*, *4*(2), 6482–6492.

Lin, Y., & Yu, Z. (2023). Extending Technology Acceptance Model to higher-education students' use of digital academic reading tools on computers. *International Journal of Educational Technology in Higher Education*, *20*(34), 1–24.

Nuraeni, C., Carolina, I., Supriyatna, A., Widiati, W., & Bahri, S. (2020). Mobile-Assisted Language Learning (MALL): Students' Perception and Problems towards Mobile Learning in English Language. *Journal of Physics: Conference Series*, *1641 01202*, 1–7.

Nuraini, D. (2019). *Efektivitas Penerapan Absensi Fingerprint Terhadap Disiplin Kerja Karyawan Hotel Patra Comfort Jakarta*. STMIK Nusa Mandiri.

Permatasari, N. P. I., & Wulandari, C. I. S. A. (2025). English Speaking Fluency and Confidence for Global Competitive Work: The Highlight of Authentic Role-play Activity for University Students. *Jurnal Multidisiplin Sahombu*, *5*(2), 400–411.

Pusparini, L. A., Silitonga, L. M., & Senowarsito. (2025). Artificial Intelligent Supported Duolingo: Enhancing Students' Speaking Skills and Reducing Speaking Anxiety in Vocational Education. *Jurnal Veridika*, *37*(1), 91–111.

Sakkir, G., & Syamsuddin, N. A. (2023). Students' Perceptions of Duolingo Mobile Assisted Language Learning (MALL) in Learning English Vocabulary. *EduLine: Journal of Education and Learning Innovation*, *3*(3), 381–388.

Sasrawangi, A., Iskandar, & Muhlis. (2021). Meningkatkan Motivasi Siswa dalam Belajar Bahasa Inggris Melalui Game di Kelas VIII MTSS Badan Amal Ujung Loe Kab Bulukumba Sulawesi Selatan. *Jurnal Pemikiran Dan Pengembangan Pembelajaran*, *3*(3), 18–28.

Stone, R. (2020). *Speaking and Listening Skills: An Essential Component in the EL Classroom*. Rosetta Stone For Schools. https://educationblog.rosettastone.com/2020/08/speaking-and-listening-skills-an-essential-component-in-the-el-classroom/?utm_source=chatgpt.com

Suharni, S. (2021). Upaya guru dalam meningkatkan motivasi belajar siswa. *G-Couns: Jurnal Bimbingan Dan Konseling*, *6*(1), 172–184.

Sulistiyo, U., Arif, T. Z. Z. Al, Sulistiyo, U., Handayani, R., Ubaidillah, M. F., & Wiryotinoyo, M. (2022). Determinants of Technology Acceptance Model (TAM) Towards ICT Use for English Language Learning. *Journal Of Language & Education*, *8*(2), 17–30.

Sutrisna, I. P. E. (2025). Mobile-Assisted Language Learning (MALL) in EFL Classroom: Examining Its Contribution to Students' Foreign Language Acquisition Process. *Jurnal Pedagogi Dan Pembelajaran*, *8*(2), 443–454.

Wicaksono, S. R. (2022). *Teori Dasar Technology Acceptance Model*. CV. Seribu Bintang.