

## **IMPLEMENTING DUOLINGO AS A SUPPLEMENTARY TOOL FOR VOCABULARY AND PRONUNCIATION MASTERY**

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### **Abstract**

This study examines the implementation of Duolingo as a supplementary tool for vocabulary and pronunciation mastery among second-year university students taking English subjects. The study was conducted in response to the challenges often found in traditional classroom learning, particularly in maintaining student motivation and helping learners retain new vocabulary over time. Using a qualitative method with simple quantitative measurement, the research combined questionnaire results and semi-structured interviews to understand students' experiences in using the application. The findings show that Duolingo was generally helpful and well received by 16 students. Most of participants agreed that the application helped them learn new English vocabulary, while three-fourths of them stated that it increased their confidence in pronunciation. These results indicate that Duolingo functioned effectively as a complementary learning medium that supported classroom instruction. The integration of clear audio features, vivid visual cues, and interactive tasks facilitated a flexible learning environment that catered to diverse student needs. Its visual and audio features, interactive tasks, and repeated exposure to language forms helped students practice English in a more engaging and flexible way. In addition, the gamified system encouraged regular use and made learning feel less stressful. Overall, the study suggests that Duolingo can be a useful supplementary tool for improving vocabulary and pronunciation while also promoting independent learning habits outside the classroom.

**Keywords:** Duolingo, Vocabulary Mastery, Pronunciation Mastery, English Learning

## **INTRODUCTION**

English has become an essential component of higher education, serving not only as a medium for academic communication but also as a gateway to global knowledge and professional opportunities. In university contexts, English is commonly offered as a compulsory subject to equip students with the language skills needed for academic and future workplace demands (Roshid & Kankaanranta, 2025). Despite its importance, English learning practices in the classroom often face several limitations, including restricted instructional time, limited opportunities for individual practice, and differences in students' prior language competence. As a result, classroom instruction alone may not be sufficient to support the development of all aspects of students' English proficiency.

Among second-year university students taking English subjects, vocabulary knowledge and pronunciation mastery remain two significant areas of concern. Limited vocabulary often prevents students from understanding texts effectively, expressing ideas accurately, and participating confidently in oral and written communication (Husein et al., 2024). At the same time, pronunciation is an equally important component of language learning, as inaccurate pronunciation may cause misunderstanding and reduce the clarity and effectiveness of spoken interaction. For university students, who are increasingly expected to

engage in presentations, discussions, and other forms of academic communication, mastery of vocabulary and pronunciation is therefore highly necessary (Ryan et al., 2024).

These challenges become more relevant when considered in relation to the learning characteristics of Generation Z students. As members of a generation that has grown up with digital technology, Gen Z learners are generally more accustomed to visual-based learning, interactive, flexible, and technology-mediated learning environments (Qatrunnada et al., 2025). Conventional classroom practices that rely heavily on textbooks and teacher-centered instruction may not always align with their preferences and learning habits (Treve, 2024). This condition suggests the need for more adaptive and supportive learning approaches that extend beyond the classroom and enable students to engage in independent language practice.

One digital platform that has gained considerable attention in language education is Duolingo. As a mobile-assisted language learning application, Duolingo offers a range of features such as short interactive exercises, audio-based input, repetition, instant feedback, and gamified learning elements (Suryanto, 2024; Kazu & Kuvvetli, 2025). These characteristics make it a potentially effective supplementary tool for language learning. Rather than replacing formal classroom instruction, Duolingo can complement it by providing additional opportunities for students to practice vocabulary and pronunciation in a more accessible and engaging manner. Through repeated exposure to lexical items and pronunciation models, students may gradually strengthen their language mastery outside scheduled class sessions.

Although many studies have discussed Duolingo in relation to motivation, general language learning, or mobile-assisted language learning, there is still a research gap in explaining how Duolingo is implemented as a supplementary tool that simultaneously supports vocabulary and pronunciation mastery among second-year university students in an English course. Previous discussions often emphasize learning outcomes or general perceptions, while fewer studies provide a detailed account of how students use the application in daily basis, what features support their vocabulary and pronunciation practice, and how interview data explain the questionnaire results. Therefore, the novelty of this study lies in its focus on the implementation process of Duolingo as a classroom supplement and its perceived contribution to both vocabulary and pronunciation mastery, especially for Gen Z university learners.

Based on this gap, the study addresses two research questions: (1) How is Duolingo implemented as a supplementary tool for vocabulary and pronunciation mastery among second-year university students taking an English course? (2) To what extent does the implementation of Duolingo support students' vocabulary and pronunciation mastery? The findings are expected to contribute to current discussions on English learning practices in higher education, particularly in relation to the use of digital applications to support independent and flexible learning.

## **METHOD**

This study used a qualitative descriptive design to explore how Duolingo was implemented as a supplementary tool for vocabulary and pronunciation mastery among second-year university students taking an English subject. This approach was chosen because the study aimed to understand students' experiences, perceptions, and responses in using Duolingo as part of their learning process. Rather than focusing on numerical measurement, the study sought to describe how the application supported students in learning new vocabulary, practicing

pronunciation, and engaging in English learning beyond classroom activities. The participants of this study are 16 second-year university students, were selected purposively, as they were directly involved in the use of Duolingo during the learning process and were considered relevant to the context of the research.

The data were collected through 10 items question on questionnaires and 5 open-ended questions within semi-structured interviews. The validity of the instruments was established through content validation. The questionnaire and interview guide were reviewed by two English-language teaching lecturers to ensure that the items were relevant to the research questions, clear for students, and appropriate for the context of the study. The reliability of the data is strengthened by using the same questionnaire instructions for all participants, checking item clarity before administration, coding students consistently, and cross-checking the questionnaire results with the interview data. The questionnaire was used as simple quantitative result to obtain an initial overview of 16 students' responses to the use of Duolingo, while the purposive interviews with 4 students mentioned in this study as S1, S2, S3 and S4 as samples were conducted to gain deeper information about their learning experiences, perceived benefits, and challenges in using the application. The data were then analyzed using qualitative descriptive analysis by organizing, reducing, and categorizing the responses into several themes related to vocabulary learning, pronunciation practice, and the role of Duolingo as a supplementary learning tool. To strengthen the credibility of the findings, the researcher combined the data from both instruments and interpreted them carefully in relation to the research questions.

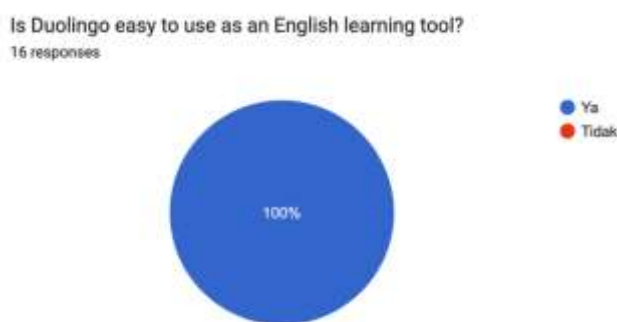
## **FINDINGS AND DISCUSSION**

### **Findings**

This section presented the findings on research instruments to answer two main questions as follows:

- (1) How is Duolingo implemented as a supplementary tool for vocabulary and pronunciation mastery among second-year university students taking English subjects?

The implementation of Duolingo is defined by high levels of student engagement with its gamified and interactive interface. According to the questionnaire results, all students agree that Duolingo provides an easy way for learning English as a supplementary tool.

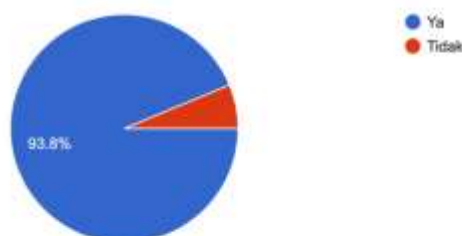


*Figure 1. Students' perception of Duolingo's ease of use*

This is further confirmed by Student 3, who noted that the desire to increase a game score made the learning process enjoyable rather than a chore. The application is implemented as a mobile-assisted tool that facilitates independent study outside of formal classroom hours, with 93.8% of students strongly agreeing that it motivates them to study beyond the classroom. S1

and S2 corroborated this by stating they use the app consistently, even during holidays or days without scheduled English subjects.

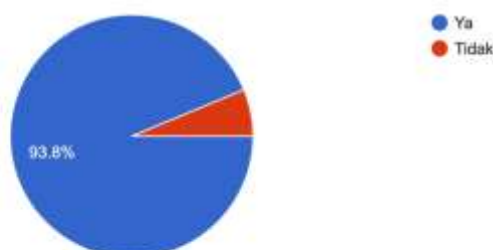
Has using Duolingo made you more motivated to learn English outside of class?  
16 responses



*Figure 2. Students' motivation to learn English outside class*

Furthermore, the tool's implementation relies on a multimodal approach, combining visual and auditory elements to reinforce linguistic foundations. Moreover, the implementation of Duolingo is characterized by its capacity to facilitate a contextual and visual-based learning environment that complements formal university instruction. A significant 93.8% of second-year students agree that the application helps them learn and understand new English vocabulary. This questionnaire evidence is supported by the experiences of Student 1 and S3, who noted that the implementation relies on a contextual-visual method where new words are paired with images to create immediate mental associations. Furthermore, the tool is implemented as an autonomous habit-building platform. S2 and S4 highlighted that the app's daily reminders and streak system encourage them to capture new vocabulary every day, even outside of scheduled English subjects. By integrating this mobile-assisted tool, the learning process becomes a flexible and engaging extension of the classroom that effectively reinforces the linguistic foundations of the students.

Will you continue to use the Duolingo app as an additional English learning tool after this course is completed?  
16 responses



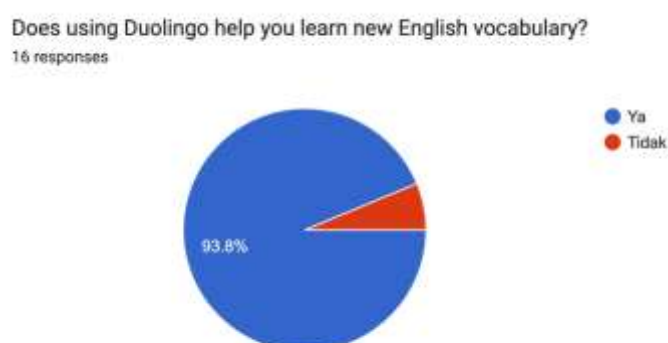
*Figure 3. Students' intention to continue using Duolingo*

The implementation of Duolingo as a supplementary tool is characterized by its ability to transform a structured academic requirement into a sustainable, self-directed learning habit. Questionnaire data reveals that 93.8% of second-year university students plan to continue using the application as an additional learning tool even after their formal course is

completed, indicating a high level of integration into their daily routines. This long-term implementation is supported by the findings from Student 4, who observed that the shift from academic obligation to personal desire creates a more effective learning environment. Furthermore, the tool is implemented through a mobile-assisted framework that provides students with a pressure-free space to refine their vocabulary and pronunciation mastery. By offering a platform that students find valuable enough to maintain independently, the implementation ensures that linguistic development continues beyond the constraints of the university semester, fostering a culture of lifelong learning (Chen, 2024).

2) To what extent does the implementation of Duolingo support students' vocabulary and pronunciation mastery?

The second research question focuses on the extent to which Duolingo supports students' vocabulary and pronunciation mastery. The findings show that the support was stronger in vocabulary learning and retention than in overall pronunciation improvement. This difference is important because vocabulary learning in Duolingo is supported by repeated visual, textual, and contextual input, while pronunciation improvement also depends on students' confidence, speaking habits, and opportunities for oral feedback.



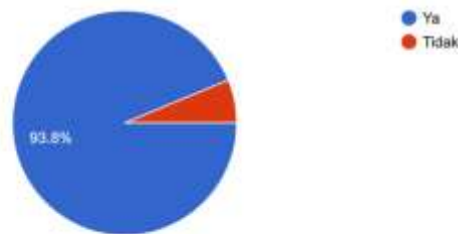
*Figure 4. Duolingo's support for learning new vocabulary*

The data show that this implementation was positively perceived by students, as 93.8% agreed that using Duolingo helped them learn new English vocabulary, while only 6.2% responded negatively. This indicates that Duolingo functioned effectively as a complementary learning medium rather than a replacement for classroom instruction. Its use allowed students to practice independently through interactive and repetitive activities that exposed them to new words, contextual usage, and pronunciation models.

Furthermore, the finding confirmed by Student 1, explaining that the contextual-visual method by pairing new words with images allows for immediate understanding even if the specific English term is temporarily forgotten. Throughout this implementation, students successfully acquired a diverse range of new vocabularies spanning various daily life contexts. This lexical acquisition included open-ended responses such as (1) practical nouns such as jacket, ticket, passport, and gate, alongside (2) descriptive adjectives like expensive, quiet, busy, and friendly. Students also engaged with (3) essential food and drink items including a bowl of soup, a glass of water, tea, coffee, sugar, and milk. The learning process extended to (4) environmental and spatial terms such as street, park, windy, rainy, and near, as

well as (5) social and grammatical foundations including roommate, cousin, French, Mexico, and pronouns like he, she, and you're.

Does Duolingo help you understand the meaning of English words better?  
16 responses



*Figure 5. Duolingo's support for understanding word meanings*

The implementation of Duolingo as a supplementary tool is highly effective in improving lexical comprehension, with a vast majority of 93.8% of students reporting that the platform helps them understand the meaning of English words better. This high success rate is attributed to an implementation strategy that prioritizes contextual learning over rote memorization. S4 observed that the platform avoids isolated word lists and instead integrates vocabulary into practical sentences, which allows students to grasp how words function in real situations. This contextual approach is further supported using visual aids, as Student 1 and S3 noted that the pairing of new words with images creates immediate mental associations that clarify meaning even when the specific translation is forgotten. S1 particularly stated,

Excerpt 1

*"When I see a new word together with an image,  
I can understand the meaning faster."*

Furthermore, the tool is implemented as a daily digital habit that facilitates continuous exposure; Student 2 and Student 4 highlighted that the repetition of these meaningful contexts across different levels ensures that vocabulary is not only understood but also retained in long-term memory. By providing clear audio models alongside these visual and contextual cues, the implementation offers a comprehensive support system that addresses the diverse proficiency levels of second-year university students.

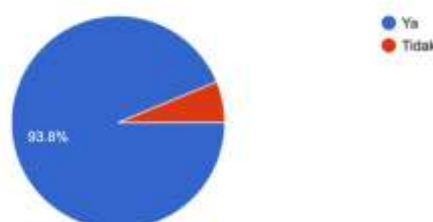
Does practicing on Duolingo help you remember English vocabulary you've learned longer?  
16 responses



*Figure 6. Duolingo's support for long-term vocabulary retention*

The implementation of Duolingo as a supplementary tool significantly enhances long-term retention through a structured, repetitive learning cycle that extends beyond the formal classroom. Questionnaire data indicates a high success rate, with 93.8% of students agreeing that practicing on the platform helps them remember vocabulary longer. This efficacy is rooted in an implementation strategy that utilizes a spaced repetition system; for instance, S2 and S4 observed that encountering words like homework and expensive across multiple missions ensures these terms stay in the memory longer without the need for forced memorization. Furthermore, the tool is implemented as a multimodal resource where new lexical items are paired with clear visual images and auditory models, creating deep mental associations that aid recall. By integrating these daily digital habits, the implementation provides second-year university students with a consistent, pressure-free platform to solidify their vocabulary and pronunciation mastery.

Do you feel like your English vocabulary has improved after using Duolingo?  
16 responses



*Figure 7. Students perceived vocabulary improvement*

Directly addressing the research data, the integration of Duolingo as a supplementary tool provides a high-impact, multimodal learning environment that resulted in a 93.8% success rate for vocabulary improvement. This mastery is achieved through contextual repetition and visual-auditory association, where students (S1–S4) move beyond rote memorization to an intuitive understanding of how words like 'expensive' or 'homework' function within real-world sentences.

Does the audio feature in Duolingo help you learn how to pronounce English words?

16 responses

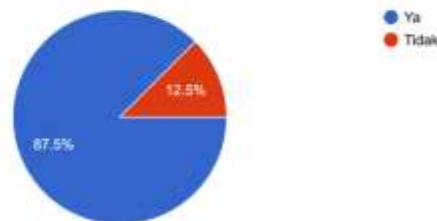


Figure 8. Duolingo audio feature and pronunciation learning

For pronunciation, 87.5% of students agree that the audio features improve their clarity. Student 4 highlighted that the implementation provides a pressure-free environment, allowing them to practice clear audio models privately until they feel braver and more confident in their oral communication. This transition from academic obligation to personal desire to learn is a key outcome of how the tool is integrated into the students' daily digital habits.

Did the pronunciation exercises on Duolingo help you pronounce English words more confidently?

16 responses

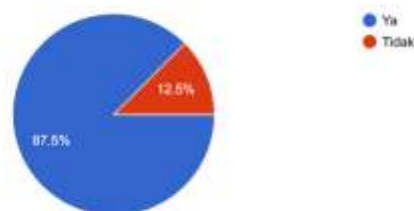


Figure 9. Pronunciation exercises and speaking confidence

Quantitatively, 87.5% of students reported a significant increase in their pronunciation confidence, a finding strongly validated by qualitative data from interviews (S1–S4). These students highlighted that the application's clear audio features and interactive speaking exercises served as a safe environment to practice, effectively reducing psychological barriers such as insecurity (S3) and hesitation (S4). S3 clearly stated,

Excerpt 2

*"I sometimes feel insecure when speaking English, but Duolingo gives me a safer place to practice."*

Operationally, Duolingo is implemented through a combination of gamification (points, levels, and daily targets) and spaced repetition. According to S2 and S4, this repetitive system is crucial for long-term vocabulary retention because it reintroduces previously learned words (like "homework" or "expensive") within new sentence contexts,

moving beyond rote memorization to intuitive understanding. Furthermore, the integration of multimodality using vivid imagery (S1, S3) and contextual sentences (S4) allows students to grasp semantic meanings more naturally. The most profound impact of this implementation is the cultivation of intrinsic motivation; students (S1, S2) consistently engaged with the app every day, even during holidays or days without formal English subjects, transforming the learning process from a mandatory academic task into a self-driven, enjoyable habit.

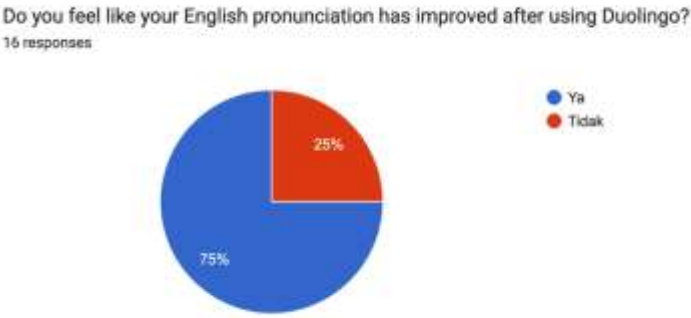


Figure 10. Pronunciation improvement

In terms of pronunciation, the 75% increase in pronunciation confidence is specifically attributed to the app's clear audio features, which allow students to practice phonetics in a low-pressure setting, effectively eliminating the insecurity (S3) often found in traditional classrooms. By leveraging gamification and daily reminders, the tool transforms language acquisition into a self-directed habit, motivating students to engage with English consistently—even during holidays—rather than only during formal lecture hours.

To make the qualitative evidence more visible, selected excerpts from the transcribed audio are presented in Table 1. The excerpts were taken from the audio files of S1, S2, S3, and S4 and organized according to themes aligned with the two research questions.

Table 1. Selected interview excerpts from transcribed audio

| Code | Theme                               | Selected interview excerpt                                                                                                                                   |
|------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S1   | Visual vocabulary and pronunciation | <i>“When I see a new word together with an image, I can understand the meaning faster.”</i>                                                                  |
| S2   | Flexible learning and repetition    | <i>“I can use it at home, during free time, and even on holidays.” S2 also said that repetition helped because “the application gives the word again.”</i>   |
| S3   | Gamification and confidence         | <i>“The score, level, and progress make me want to continue learning.” S3 added that Duolingo “gives me a safer place to practice.”</i>                      |
| S4   | Autonomy and pronunciation practice | <i>“After using it regularly, I became more interested in continuing by myself.” S4 also stated, “I can listen and repeat the pronunciation many times.”</i> |

The excerpts show that Duolingo was implemented not only as a digital application but also as a flexible learning routine. S2's statement about using the application at home, during free time, and on holidays indicates that Duolingo extended English learning beyond classroom hours. S4's statement also confirms that the application gradually shifted from a course-related activity into a self-directed learning habit.

In relation to vocabulary mastery, the interview data show that students benefited from images, contextual sentences, and repeated exposure. S1's excerpt demonstrates how visual support helped students understand word meanings faster, while S2 and S4 emphasized that repeated words in different exercises or missions helped them remember vocabulary longer. These findings support the questionnaire results, which showed 93.8% positive responses for vocabulary learning, word-meaning understanding, vocabulary retention, and perceived vocabulary improvement.

In relation to pronunciation mastery, the interview data show that Duolingo created a safer and less stressful practice environment. S3's statement about feeling insecure when speaking English explains why private pronunciation practice was important. S4's statement about listening and repeating pronunciation many times further supports the finding that audio models helped students practice before speaking publicly. However, the lower percentage for perceived pronunciation improvement (75%) also indicates that Duolingo should be supported by teacher correction and communicative classroom practice.

### **Discussion**

The integration of Duolingo as a pedagogical supplement for second-year university students is characterized by several core conceptual pillars: multimodal immersion, gamified engagement, and the transition from rote memorization to contextualized understanding.

#### **Multimodal Immersion and Cognitive Load Theory**

The implementation of Duolingo is fundamentally rooted in a multimodal approach that synchronizes visual, textual, and auditory stimuli (Vega et al., 2024). In traditional university settings, vocabulary acquisition often suffers from split attention effects where students must jump between a dictionary and a text, leading to cognitive fatigue. By integrating high-fidelity images directly with the target vocabulary, the application creates a seamless mental map. This sensory synchronization ensures that the brain does not have to work as hard to decode the basic meaning of a word, allowing cognitive resources to be redirected toward higher-order linguistic tasks such as sentence structure and usage.

This multimodal strategy aligns with the principles of Dual Coding Theory, which suggests that memory is enhanced when information is stored in both verbal and visual forms (Ciocan, 2025). When a student encounters a new term alongside a clear, relevant image, the concept is double coded in the brain. This dual representation makes retrieval significantly more reliable. If the student momentarily forgets the English word, the mental image often acts as a retrieval cue, triggering the linguistic memory. This implementation is particularly effective for second-year university students who are transitioning from basic vocabulary to more complex, abstract concepts that require strong semantic anchors.

Furthermore, the clarity of the integrated audio provides a critical third dimension to this immersion. By hearing the word at the exact moment it is seen and read, students develop a holistic understanding of the lexical item. This prevents the common issue of silent reading where students recognize a word on paper but have no mental representation of its sound (Lin & Liu, 2025). This three-pronged implementation involving visual, textual, and auditory

elements creates a robust learning environment that accommodates various learning styles, ensuring that vocabulary is not just memorized as a list of letters but understood as a living component of the language.

### **Gamified Engagement and Affective Filter Reduction**

A second pillar of the implementation is the use of gamification to manage the emotional state of the learner. In second-language acquisition, the Affective Filter refers to the psychological barrier that can prevent input from reaching the brain's language acquisition device (Rojas, 2025), usually caused by anxiety, low self-esteem, or lack of motivation. The implementation of the game-like interface, featuring levels, experience points, and daily targets, effectively lowers this filter (Zhu & Bai, 2025). By framing language practice as a series of achievable quests rather than high-pressure academic tests, the tool fosters a relaxed state of mind that is optimal for learning.

The gamified structure also leverages behavioral psychology using streaks and daily reminders. These elements act as a subtle nudge that encourages consistent engagement. For university students with busy schedules, the pressure of a looming deadline can often lead to cramming, which is detrimental to language retention. The application's implementation of daily targets encourages small, manageable bursts of learning. This transformation of an academic obligation into a rewarding daily habit ensures that students maintain contact with the English language consistently, which is a prerequisite for reaching advanced levels of proficiency.

Finally, the competitive yet safe environment of a gamified app provides a sense of agency that is often missing in formal lectures. Students feel a sense of ownership over their progress as they unlock new levels and earn rewards. This sense of achievement builds a positive feedback loop whereas students see their score improve, their confidence in their linguistic abilities grows (Jiang et al., 2024). This psychological shift is essential for second-year students as it replaces the fear of making mistakes with the drive to achieve the next milestone, creating a resilient and motivated cohort of learners.

### **Contextualized Repetition vs. Rote Memorization**

The implementation of Duolingo also emphasizes a shift from isolated rote memorization to a context-heavy learning model (Pan, 2024). Traditional vocabulary instruction frequently asks students to memorize definitions in their native language, which often fails to capture the nuances of how words are deployed. In contrast, this tool implements vocabulary within the framework of active sentences. From the very first encounter, students see how a word interacts with other parts of speech. This contextual exposure allows students to intuitively grasp grammatical rules and collocations, such as which adjectives naturally pair with certain nouns.

This approach facilitates a deeper level of cognitive processing known as elaboration. When students are forced to arrange words into sentences or translate phrases within a specific scenario, they are performing a complex mental task that goes beyond simple recognition. They are learning the behavior of the word within the English language. For instance, understanding a word's meaning is one step, but seeing it used in a question, a negative statement, and a descriptive sentence provides a 360-degree view of its utility. This ensures that the vocabulary mastery achieved is flexible and functional rather than rigid and academic (Xu et al., 2025).

The repetitive nature of these contextual exercises further solidifies understanding. A single word is not just practiced once; it reappears across various formats including listening, writing, and speaking, each time in a slightly different context. This ensures that the student is not just memorizing a specific answer but is learning to identify the word regardless of the sentence structure. This implementation mirrors natural language acquisition where repeated exposure in different situations leads to a deep, internalized mastery of the lexicon (Pratama et al., 2025).

### **Spaced Repetition and Long-Term Lexical Retention**

The support provided for vocabulary mastery is largely a result of the spaced repetition system built into the implementation (Halizah & Anggraini, 2024). Human memory follows a forgetting curve where information is rapidly lost if not reviewed at specific intervals. The tool supports mastery by tracking performance and reintroducing difficult words just as they are about to be forgotten. This systematic reinforcement moves vocabulary from short-term working memory into long-term storage, providing students with a durable linguistic foundation that persists long after the study session has ended.

The extent of this support is visible in how students recognize and apply vocabulary in real-world academic settings. Because the repetition is spaced out and varied, the memory becomes decontextualized from the app itself (Ciocan, 2025). Students report being able to identify words learned in the app while reading journals or watching English-language films. This indicates that the mastery achieved is not just a trick of the application's interface but a genuine expansion of the student's mental lexicon. The tool provides a safety net that catches fading memories and strengthens them, ensuring that the time spent studying translates into permanent knowledge.

Furthermore, this systematic repetition builds lexical fluency which is the speed at which a learner can retrieve a word during active communication (Haque et al., 2024). Because words are reinforced so frequently, the neural pathways associated with those words become stronger and faster. This is crucial for university students who need to move beyond slow, translated speech toward more fluid and natural expression. The tool supports this transition by making word retrieval an almost automatic process, thereby reducing the mental effort required during conversation and allowing the student to focus on the content of their ideas.

### **Phonetic Clarity and the Development of Pronunciation Confidence**

In terms of pronunciation, the implementation provides vital support by establishing a clear, native-sounding phonological model. A major obstacle for English learners is the lack of a consistent relationship between spelling and sound. By providing high-quality audio for every lexical item, the tool helps students develop a precise inner ear for the language. This auditory support is the first step toward accurate production (Moses & Prastikawati, 2025); before a student can pronounce a word correctly, they must have a clear mental representation of what that word should sound like.

The support extends to the physical aspect of speaking through repetitive oral practice in a judgment-free zone. In a traditional classroom, the public nature of speaking often leads to anxiety and a reluctance to practice difficult sounds. The application provides a private space where students can listen to a model and repeat it an unlimited number of times. This allows for the development of articulatory loops, which is the process of hearing a sound and

immediately trying to reproduce it (Zsiga, 2024). This repetitive physical practice builds the muscle memory necessary for clear speech, helping students overcome the phonological habits of their native language.

Ultimately, this phonetic support leads to a significant increase in bravery and self-assurance. As students master the sounds of the language in private, they feel more prepared to use those sounds in public. The insecurity that often plagues language learners is replaced by a sense of competence. The tool supports this psychological transformation by providing constant, objective feedback through its audio features. When a student can hear that their own pronunciation is beginning to match the native model, the fear of the unknown is eliminated, allowing them to speak English with a newfound sense of authority and clarity.

### **Catalyzing Learner Autonomy and Growth Mindsets**

Perhaps the most significant extent of support provided by this implementation is the cultivation of learner autonomy. The tool does not just act as a source of information; it serves as a catalyst for independent learning behaviors (Li et al., 2024). By making the initial stages of vocabulary and pronunciation mastery enjoyable and accessible, it fosters a growth mindset, which is the belief that one's abilities can be developed through dedication and hard work. When students see tangible evidence of their progress through the app's rewards and levels, they are more likely to take proactive steps in their own education.

This autonomy manifests in students seeking out additional English resources beyond the requirements of their university subjects. The confidence gained from mastering a new set of vocabulary or perfecting a difficult pronunciation often spills over into other areas of their life. Students may find themselves more willing to engage with English media, participate in online forums, or even seek out conversation partners. The tool provides the scaffolding necessary to reach a level where they feel comfortable exploring the language independently, which is the goal of any supplementary academic tool (Yang & Ying, 2025).

In conclusion, the support provided by this implementation is transformative because it changes the student's relationship with the language. English is no longer seen as a daunting academic subject to be passed but as a skill to be mastered and enjoyed. By providing a safe, structured, and rewarding environment, the tool empowers students to move beyond the classroom. The mastery achieved is not just a collection of words and sounds but a new sense of linguistic identity that encourages lifelong learning and global communication (Procel et al., 2024).

### **CONCLUSION AND SUGGESTION**

To conclude, the integration of multimodality, gamification, and spaced repetition systems successfully fosters long-term lexical retention, allowing students to internalize vocabulary contextually rather than through rote memorization. Furthermore, the high-quality audio features and low-pressure practice environment effectively reduce psychological barriers such as speaking anxiety, resulting in a marked increase in phonetic accuracy and learner confidence. Ultimately, this digital integration does not only improve receptive and productive linguistic skills but also catalyzes a sustainable shift toward learner autonomy, empowering students to take ownership of their language acquisition journey beyond the formal classroom setting.

To maximize these benefits, it is suggested that educators formally integrate mobile-assisted language learning tools like Duolingo into the lesson plan as a structured secondary resource to provide data-driven feedback and consistent language exposure outside of limited credit hours. Students should prioritize daily, consistent engagement with the application to maintain memory retention, focusing on mimicking auditory models rather than simply achieving high scores. Furthermore, future researchers are encouraged to employ experimental designs with control groups or longitudinal studies to measure the application's efficacy more comparatively and to observe its long-term impact on advanced linguistic components, such as academic writing syntax and high-level listening comprehension.

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