The Impact of Duolingo on Vocabulary Acquisition among English Department Students at Al-Jufra University

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أثر استخدام تطبيق "دوولينجو" في اكتساب المفردات لدى طلبة قسم اللغة الإنجليزية بجامعة الجفرة

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قسم اللغة الإنجليزية، كلية التربية، جامعة الجفرة، ودان، الجفرة، ليبيا

Abstract

This study examines the influence of Duolingo on vocabulary learning in Libyan EFL students at the English Department of Al-Jufra University. In the contemporary educational scene, technology-enhanced tools like social media and mobile applications have become indispensable in Facilitating language acquisition. Duolingo, a prominent educational application, is engineered to enhance vocabulary acquisition through interactive, gamified courses. The research utilized a descriptive quantitative methodology, employing a structured questionnaire with 15 items to collect data from a purposive sample of 30 students. The results demonstrate that most participants regard Duolingo as an efficient and stimulating resource for acquiring and retaining new language. Participants indicated regular exposure to novel vocabulary, enhanced comprehension via visual aids, and facilitated memorization due to the app's design.

The findings also underscore students' inclination to use such tools into formal educational settings. The study advocates for the integration of Duolingo and analogous applications within the academic curriculum to improve EFL students' vocabulary proficiency and motivation.

Keywords: Duolingo, vocabulary acquisition, EFL, mobile learning, educational apps.

الملخص

تتناول هذه الدراسة أثر تطبيق "دوولينجو" في اكتساب المفردات لدى طلبة اللغة الإنجليزية كلغة أجنبية (EFL) في قسم اللغة الإنجليزية بجامعة الجفرة. في ظل التطورات الحديثة في مجال التعليم، أصبحت الأدوات المعززة بالتكنولوجيا مثل وسائل التواصل الاجتماعي والتطبيقات المحمولة عناصر أساسية في دعم تعلم اللغات. ويُعد "دوولينجو" من أبرز التطبيقات التعليمية استخدامًا، حيث صُمم لتعزيز تنمية المفردات من خلال دروس تفاعلية قائمة على أسلوب اللعب. اعتمدت الدراسة على منهج وصفي كمي، حيث تم جمع البيانات باستخدام استبيان مكوّن من 15 بندًا، وُزّع على عينة قصدية مكونة من 30 طالبًا. أظهرت النتائج أن غالبية المشاركين ينظرون إلى "دوولينجو" كأداة فعّالة وممتعة تُسهم في اكتساب المفردات الجديدة وتثبيتها. وقد أشار المشاركون إلى تكرار تعرضهم لكلمات جديدة، وتحسن فهمهم من خلال الوسائل البصرية، وسهولة حفظ المفردات التي يوفرها هيكل التطبيق. كما بيّنت النتائج تفضيل

الطلاب لإدماج مثل هذه الأدوات في البيئة التعليمية الرسمية. وبناءً على ذلك، توصي الدراسة بدمج "دوولينجو" وتطبيقات مماثلة ضمن المناهج الأكاديمية لتعزيز كفاءة ودافعية طلاب اللغة الإنجليزية في اكتساب المفردات.

الكلمات المفتاحية: دوولينجو، اكتساب المفردات، اللغة الإنجليزية كلغة أجنبية، التعلم عبر الهاتف، التطبيقات التعليمية.

1 Introduction

1.1 Background of the Study

In recent years, the incorporation of technology into language acquisition has profoundly altered the educational environment. Mobile-assisted language learning (MALL) technologies, exemplified as Duolingo, have gained popularity owing to their accessibility, interactive design, and gamified educational experiences (Valarmathi, 2011). The prevalence of English as the primary global language for communication, education, and professional advancement has heightened the necessity for efficient vocabulary learning strategies (Holfester, 2019). Vocabulary is seen as an essential element of language proficiency; without a robust vocabulary foundation, learners find it challenging to communicate effectively, even if they possess grammatical understanding (Chen, 2009; Thornbury, 2002).

Duolingo, a popular educational application established in 2011, provides organized courses that focus on vocabulary enhancement through visual stimuli, repetition, and prompt feedback (Munday, 2016). The application's methodology corresponds with fundamental concepts of second language acquisition, including spaced repetition and contextual learning. Notwithstanding the increasing interest in these technologies, numerous Libyan EFL students persist in encountering challenges in vocabulary acquisition, thereby impeding their capacity to read texts and articulate themselves in English. This study aims to investigate how Duolingo mitigates these problems for students at Al-Jufra University.

1.2 Statement of the Problem

Despite the growing availability of mobile applications designed to facilitate language learning, many Libyan EFL students continue to face significant challenges in acquiring English vocabulary. This limitation negatively affects their ability to comprehend texts, express ideas, and engage in meaningful communication. Vocabulary is often regarded as the cornerstone of language proficiency; without sufficient lexical knowledge, learners cannot effectively participate in listening, speaking, reading, or writing tasks (Thornbury, 2002; Chen, 2009).

Although Duolingo is widely used across various educational contexts and has demonstrated potential in supporting vocabulary development (Munday, 2016; Rahman et al., 2024), there is limited research exploring its specific impact on Libyan university students. Most existing studies have been conducted in Asian or European contexts. This creates a research gap that this study aims to fill by investigating how Duolingo affects vocabulary acquisition among English Department students at Al-Jufra University.

1.3 Aim of the study

This study aims to investigate the effectiveness of Duolingo in enhancing vocabulary acquisition among English Department students at Al-Jufra University. The study also seeks to:

1. Evaluate students' perceptions of Duolingo as a tool for vocabulary learning.

2. Identify the specific features of Duolingo (e.g., repetition, visual aids, gamification) that contribute to vocabulary retention.
3. Assess the extent to which Duolingo supports independent learning and application of vocabulary in real-life contexts.

1.4 Research questions

This study seeks to answer the following main research questions:

1. To what extent does Duolingo impact vocabulary acquisition among English Department students at Al-Jufra University?
2. How do students perceive the effectiveness of Duolingo as a tool for vocabulary learning?

To explore these questions more thoroughly, the study also addresses the following sub-questions:

- Do students frequently encounter new vocabulary through Duolingo?
- Does the use of images and repetition on Duolingo assist in understanding and retaining new words?
- Do students find Duolingo an enjoyable and motivating platform for learning vocabulary?
- How does Duolingo support students' ability to apply new vocabulary in real-life communication?

1.5 Significance of the Study

This study holds both academic and practical significance. From an academic perspective, it contributes to the growing body of literature on mobile-assisted language learning (MALL), specifically in the context of EFL learners in Libya—a demographic that remains underrepresented in previous studies. The research addresses a clear gap by evaluating the role of Duolingo in improving vocabulary acquisition among university students in a non-Western context.

From a practical standpoint, the findings may benefit EFL students by introducing effective, engaging strategies to enhance vocabulary learning. Teachers and curriculum designers can utilize the results to incorporate technology-based tools into language instruction. Additionally, app developers may consider user feedback and preferences revealed by the study to improve the educational effectiveness of similar applications.

2. Literature Review and Theoretical Framework
2.1 The Role of Vocabulary in Language Learning

Vocabulary plays a fundamental role in mastering any language. It serves as the foundation upon which all other language skills—reading, writing, listening, and speaking—are built. Without a sufficient range of vocabulary, learners struggle to understand texts, express ideas, or engage in meaningful communication. Thornbury (2002) emphasizes that vocabulary is not just a component of language but a prerequisite for effective communication. Similarly, Chen (2009, as cited in Ayed, 2020) argues that "without vocabulary, nothing can be conveyed," underlining its essential role even more than grammar in many communicative situations.

2.2 Receptive vs. Productive Vocabulary

According to Nation (2001), vocabulary knowledge is divided into two main types: receptive and productive. Receptive vocabulary includes the words learners can recognize and understand when they read or hear them. In contrast, productive vocabulary refers to the words learners can actively use in speaking or writing. The development of both types is critical for EFL learners, as receptive vocabulary enhances comprehension, while productive vocabulary supports active language use and expression.

2.3 Mobile-Assisted Language Learning (MALL)

Technological instruments, particularly mobile applications, have revolutionized the domain of language acquisition. Valarmathi (2011) presents the notion of Mobile-Assisted Language Learning (MALL), emphasizing its capacity to provide flexible, accessible, and individualized learning experiences. MALL enables learners to interact with language information at any time and place, providing a learning environment that accommodates personal pacing and repetition.

2.4 Duolingo as a Language Learning Tool

Duolingo, established in 2011 by Luis von Ahn and Severin Hacker, is among the most extensively utilized language learning applications worldwide. The platform utilizes gamification techniques—such as points, levels, and rewards—combined with educational principles like spaced repetition and instant feedback to enhance learning (Munday, 2016). The application accommodates more than 40 languages and is recognized for its captivating, concise courses that integrate images, audio, and user engagement. Golonka et al. (2014) and Rahman et al. (2024) underscore Duolingo's influence on vocabulary acquisition, particularly through its emphasis on repeated exposure, contextual application, and user incentive.

2.5 Review of Previous Studies

Several studies have examined the use of Duolingo and mobile applications in vocabulary acquisition for EFL learners. Below is a review of selected research arranged chronologically:

Rosyidah et al. (2020) conducted a study on Indonesian junior high school students to explore the impact of Duolingo on English vocabulary mastery. Using a quasi-experimental method, they found that Duolingo positively influenced vocabulary retention and engagement in learners.

Munday (2016) argued that Duolingo could be effectively integrated into formal classroom settings. Through classroom observations and student feedback, the study concluded that the app promotes autonomous learning and provides a supportive environment for vocabulary acquisition.

Saeed (2021) investigated how social media platforms, including Duolingo, contribute to language learning among Pakistani undergraduate students. The study emphasized that Duolingo helped improve vocabulary and the four main language skills.

Rahman, Damayanti & Setyarini (2024) conducted a case study on EFL learners' strategies using Duolingo. They highlighted both the advantages and limitations of the application, emphasizing that learners adopted personalized strategies to maximize vocabulary retention.

Ta'amneh et al. (2024) examined the impact of Duolingo on Jordanian EFL learners' vocabulary development and their attitudes toward it. Results showed that students had positive attitudes and improved vocabulary skills after consistent use of the application.

Azi (2023) performed a comparative study among Saudi EFL learners, showing that students who used mobile apps like Duolingo outperformed their peers on vocabulary assessments.

2.6 Research Gap

While numerous studies have demonstrated the benefits of Duolingo in different cultural and academic settings, limited research has addressed its specific impact on Libyan EFL students. Most prior studies focused on Asian or Middle Eastern contexts, and few employed a descriptive quantitative design to explore university-level learners. This study aims to fill that gap by evaluating Duolingo's role in vocabulary acquisition among students at Al-Jufra University.

3.Methodology
Research design3.1

This research employed a descriptive quantitative methodology to examine the impact of Duolingo on vocabulary acquisition among English Department students at Al-Jufra University.

The design was chosen to facilitate the collecting of quantifiable data that reflects students' experiences and viewpoints on the utilization of Duolingo as a vocabulary acquisition tool.

3.2 Participants

The study population comprised students from the English Department at Al-Jufra University during the 2023–2024 academic year. A purposive sampling method was utilized to pick 30 students—25 girls and 5 males—representing diverse academic levels and backgrounds. The selection sought to guarantee diversity in responses and alignment with the study objectives.

3.3 Instruments and Data collection

Data were collected through a standardized questionnaire of 15 items that examined students' exposure to vocabulary, learning practices, and perceptions of Duolingo. The questionnaire was evaluation by academic experts for content validity and was subsequently pilot-tested on a small cohort to ascertain clarity and reliability. Participants received consent papers, and their replies were gathered anonymously to ensure anonymity. The questionnaire utilized in this study is located in Appendix A.

3.4 Data analysis

The gathered data were analyzed utilizing the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including frequencies and percentages, were utilized to analyze student replies and discern trends in vocabulary learning patterns via the Duolingo app.

4. Results and Discussion
4.1 Overview

This chapter presents the key findings of the study based on students' responses to the questionnaire, followed by a critical analysis and interpretation of the results. The data were analyzed using descriptive statistics via SPSS, and the findings are linked to the study's research questions and existing literature.

4.2 Results and Interpretation

The demographic distribution of the participants is shown in Figure 1. A large majority of respondents (97%) were female, and only 3% were male. This significant imbalance reflects actual enrollment in the English Department at Al-Jufra University and may influence the way students engage with technology-based tools like Duolingo.

- **Duolingo as a Vocabulary Learning Tool:**
  87% of the respondents agreed that Duolingo plays a vital role in learning new vocabulary. This supports Munday (2016), who emphasized Duolingo's potential in promoting autonomous vocabulary acquisition.
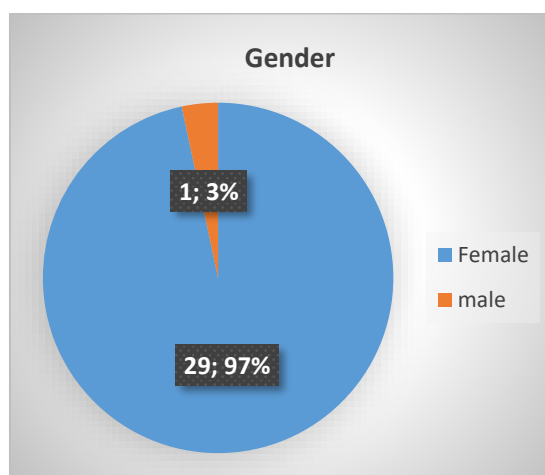
Figure 1: Gender Distribution of the Participants.

As illustrated in Figure 2, this percentage reflects students' strong belief in Duolingo's importance for vocabulary acquisition, supporting its relevance in modern language learning environments.
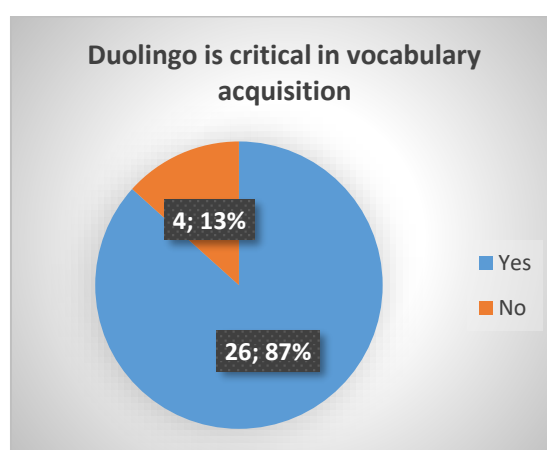

Figure 2: Students' Agreement on Duolingo's Role in Vocabulary Acquisition.

- **Exposure to New Vocabulary:**
  93% of students indicated they frequently encounter new vocabulary while using Duolingo. This aligns with Rosyidah et al. (2020), who noted similar results in Indonesian EFL contexts.

As shown in **Figure 3**, a vast majority of students (93%) affirmed that they consistently encounter new vocabulary through Duolingo. This high percentage underscores the app's effectiveness in introducing learners to varied lexical input on a regular basis.
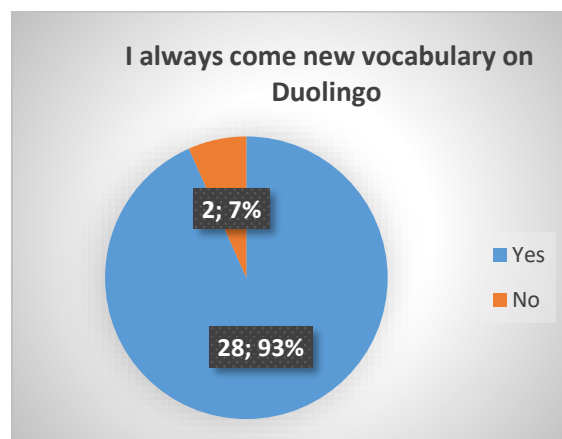
Figure 3: Students' Response on Encountering New Vocabulary Through Duolingo**.**

- **Learning Vocabulary Across Various Fields:**

As indicated in **Figure 4**, 73% of the participants reported that Duolingo exposes them to new vocabulary across a range of thematic areas or real-life contexts. This suggests that the app offers diverse content beyond routine topics, enriching the learners' lexical knowledge in different fields such as education, health, travel, and daily communication. Such variety enhances contextual understanding and real-world language application.
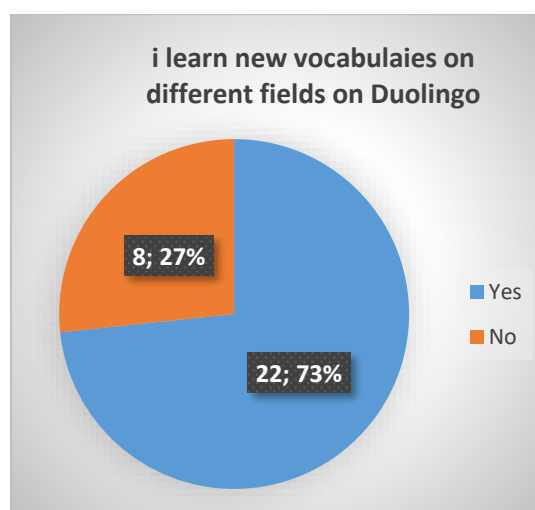

Figure 4: Students' Perception of Learning Vocabulary from Different Fields Using Duolingo

- **Use of Visual Aids:**

As illustrated in **Figure 5**, 83% of the students agreed that Duolingo lessons are consistently accompanied by pictures, which assist in understanding new vocabulary. The visual context provided by these images enhances students' ability to infer meanings and retain new words. This finding supports previous studies (e.g., Golonka

et al., 2014) that emphasize the importance of visual aids in language acquisition, especially for EFL learners who benefit from multimodal input.
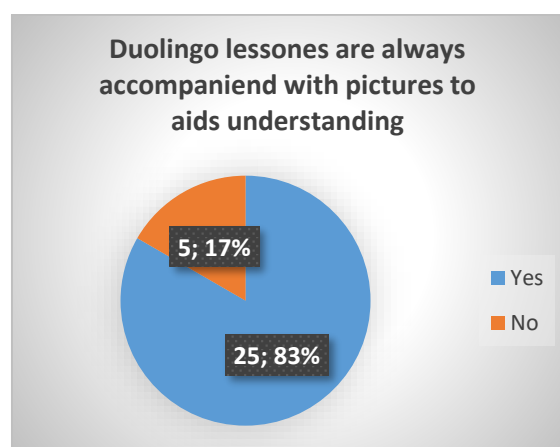
Figure 5: Students' Responses on the Use of Pictures in Duolingo Lessons for Vocabulary Understanding.

• **Use of External Tools for Meaning Clarification:**

As depicted in **Figure 6**, 60% of the students reported using external tools such as Google Translate or mobile dictionaries to check the meaning of new vocabulary encountered on Duolingo, while 40% did not. This suggests that although Duolingo provides considerable support for vocabulary learning, some students still rely on supplementary resources to clarify meanings. This aligns with the idea that mobile-assisted learning is most effective when integrated with multiple sources of input (Rahman et al., 2024). It also reflects learners' proactive strategies to ensure understanding and reinforce retention.
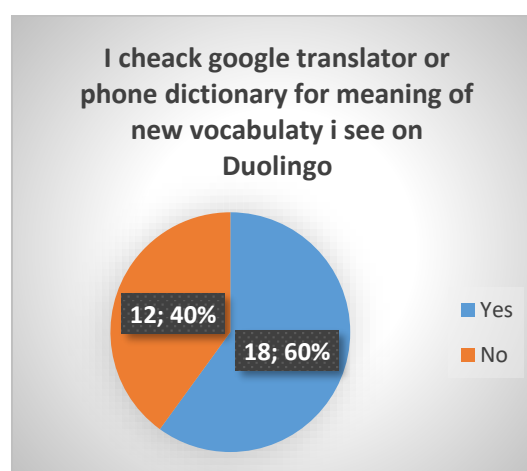

Figure 6: Students' Use of External Tools (e.g., Google Translate) for Vocabulary Clarification While Using Duolingo.

• **Ease of Vocabulary Acquisition:**

As illustrated in **Figure 7**, a substantial 90% of the respondents reported that acquiring new words through Duolingo is very easy, whereas only 10% disagreed. This reflects the app's user-friendly and intuitive design, which promotes effortless vocabulary

acquisition. The high level of agreement aligns with Munday (2016), who emphasized that gamified learning and repetition, as utilized in Duolingo, can significantly enhance vocabulary retention and learning ease. The findings confirm Duolingo's effectiveness in minimizing cognitive load and making vocabulary learning accessible, especially for beginner to intermediate learners.
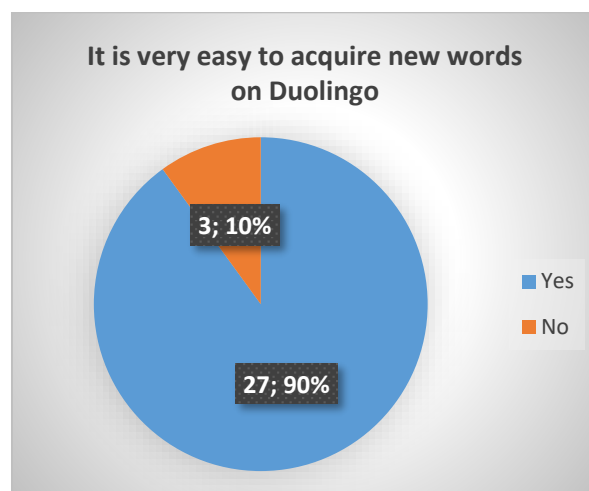
Figure 7: Students' Perceptions of the Ease of Acquiring Vocabulary via Duolingo.

**• Student Motivation and Engagement:**

As depicted in **Figure 8**, 81% of the students stated that acquiring new vocabulary through Duolingo is an interesting method of learning, while 19% did not share the same view. This result underscores the app's engaging and gamified approach, which appears to foster greater motivation and enjoyment in the learning process. These findings are in line with Rahman et al. (2024), who emphasized that motivational features such as rewards, progress tracking, and immediate feedback play a vital role in sustaining learners' interest and improving vocabulary acquisition outcomes.
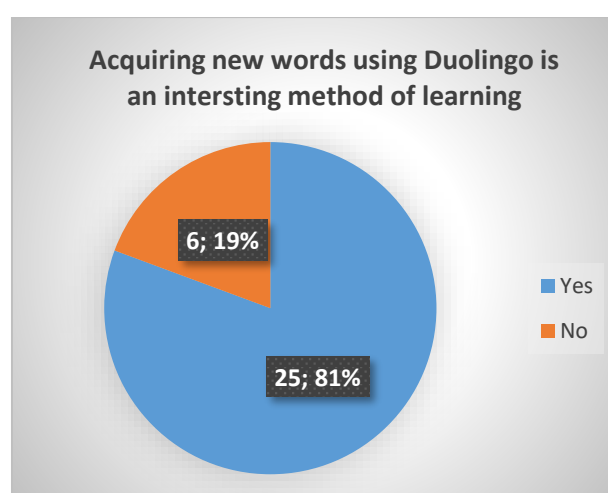
Figure 8: Students' Perceptions of Duolingo as an Interesting Vocabulary Learning Method.

• **Vocabulary Retention and Memorization:**

Figure 9 demonstrates that 70% of students reported that recalling new vocabulary learned via Duolingo is facile, but 30% disagreed. The data indicate that Duolingo's implementation of repetition, visual reinforcement, and contextual word presentation enhances memory retention. The application's design, featuring spaced repetition and gamified recall tasks, aligns with research highlighting the significance of memory in vocabulary acquisition (Thornbury, 2002; Munday, 2016). Nonetheless, the 30% who struggled with vocabulary retention may indicate individual variances in learning methods or the necessity for additional practice.

**It is easy to remmber new words acquire on Duolingo**

9; 30%

21; 70%

Yes
No
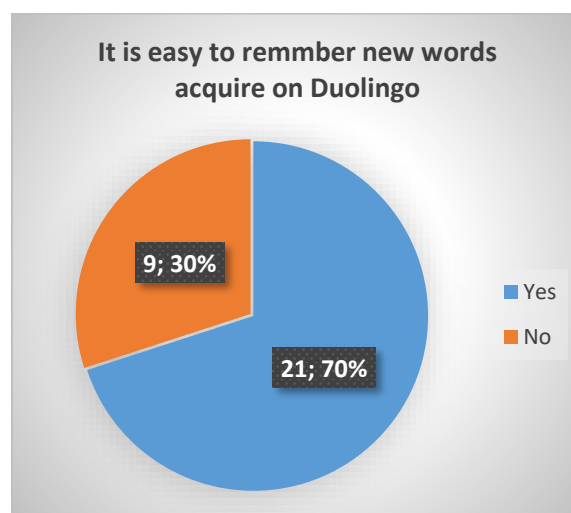
Figure 8: The above data indicated that 70% of students responded in affirmative while 30% of students disagreed.

Out of the 30 students surveyed, 60% indicated that they consider Duolingo to be a helpful tool for understanding the meanings of complex and unfamiliar vocabulary. This reflects moderate confidence in the app's capacity to support deeper vocabulary comprehension. While the majority found Duolingo beneficial in this regard, a notable 40% expressed doubts or disagreement.

This disparity suggests that while Duolingo offers contextual support and visual cues that may aid in understanding vocabulary, it may not always provide sufficient depth or explanation for more nuanced or abstract terms. These findings align with previous research by Azi (2023), who emphasized that while Duolingo is effective for basic vocabulary building, its limitations become apparent with more advanced or idiomatic language.

Consequently, this result underscores the importance of integrating supplementary resources—such as teacher explanations, reading materials, or dictionaries—especially when students encounter challenging vocabulary that may lack contextual reinforcement within the app.
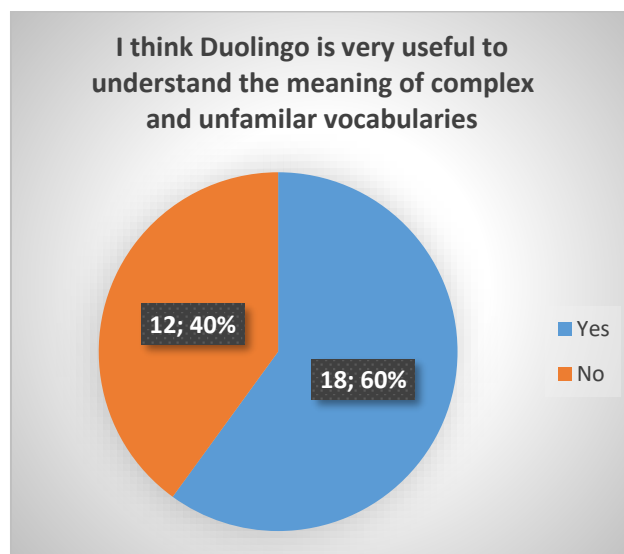
Figure 10: Students' Views on Duolingo's Usefulness in Understanding Complex and Unfamiliar Vocabulary

The results revealed that a vast majority of students (97%) expressed a strong desire for their English teachers to encourage the use of Duolingo as a supplementary learning tool during holidays. This overwhelming agreement suggests that students are not only motivated by the app's interactive design but are also willing to extend their learning outside formal class hours.

The students' preference highlights the perceived usefulness and accessibility of Duolingo, reinforcing its value as a tool for autonomous learning. It also suggests a broader implication for curriculum designers and educators to integrate mobile-based applications as part of blended learning models. Such integration could enhance student engagement, especially during periods when structured classroom instruction is not available.
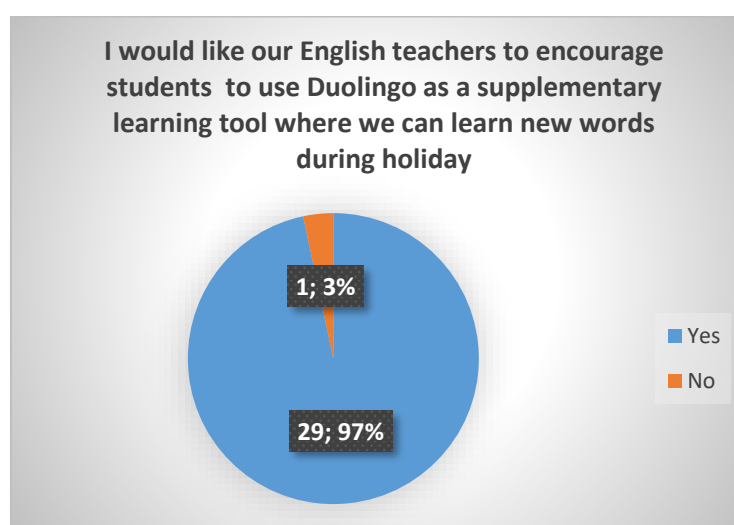
Figure 11: Students' Preferences for Using Duolingo as a Supplementary Tool During Holidays.

4.3 Discussion and Connection to Literature

These results suggest that Duolingo effectively supports vocabulary acquisition among Libyan EFL students. The strong student engagement, reinforced by multimedia elements and gamification, mirrors findings in multiple prior studies (e.g., Rahman et al., 2024; Azi, 2023). Despite the tool's success, students still rely on supplementary resources, indicating room for improvement in contextual word usage and practical application.

The answer of this question showed that the majority of students agree that Duolingo is play an essential role on learning vocabulary acquisition.

5.Conclusion and Recommendations

5.1 Conclusion

This study investigated the impact of Duolingo on vocabulary acquisition among English Department students at Al-Jufra University using a descriptive quantitative approach. A structured questionnaire was distributed to 30 students to assess their perceptions and experiences with the application. The findings revealed that Duolingo significantly supports vocabulary development, particularly through the use of repetition, visual aids, and interactive lessons. Most students reported encountering new vocabulary regularly and found the app to be engaging and effective in promoting retention and understanding.

The study contributes to the field of mobile-assisted language learning (MALL) by providing evidence from a Libyan EFL context, an area that has received limited scholarly attention. It highlights the educational value of integrating gamified learning applications into formal instruction to enhance language outcomes.

5.2 Recommendations

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

1. For   Students:
   Engage regularly with Duolingo or similar apps to reinforce vocabulary acquisition outside classroom hours, particularly during holidays and self-study time.
2. For   Teachers:
   Incorporate mobile-based vocabulary learning tools like Duolingo into the curriculum as supplementary materials to traditional instruction, especially for vocabulary revision and practice.
3. For   Educational   Institutions:
   Provide training and orientation for both teachers and students on the effective use of mobile applications for language learning.
4. For   App   Developers:
   Consider enhancing contextual word usage and integrating more culturally relevant content to better serve diverse learner populations.
5. For   Future   Researchers:
   Further studies are encouraged to examine the long-term effects of Duolingo on language skills beyond vocabulary (e.g., grammar, speaking) and to conduct comparative studies across different regions or educational levels.

Appendix A: Questionnaire

Instructions:

Please respond to the following statements by selecting either Yes or No to indicate your level

of agreement. Your responses will remain confidential and will be used for academic purposes only.

Section A: Impact of Duolingo on Vocabulary Acquisition

1. Duolingo is critical in vocabulary acquisition.
   ☐ Yes   ☐ No
2. I always come across new vocabulary on Duolingo.
   ☐ Yes   ☐ No
3. I learn vocabulary from different fields through Duolingo.
   ☐ Yes   ☐ No
4. Duolingo lessons are always accompanied by pictures that aid understanding.
   ☐ Yes   ☐ No
5. I use Google Translate or a phone dictionary to check the meanings of new words I encounter on Duolingo.
   ☐ Yes   ☐ No

Section B: Students' Perceptions of Duolingo as a Vocabulary Learning Tool

6. It is very easy to acquire new vocabulary on Duolingo.
   ☐ Yes   ☐ No
7. Acquiring vocabulary using Duolingo is an interesting learning method.
   ☐ Yes   ☐ No
8. It is easy to remember the new vocabulary I acquire through Duolingo.
   ☐ Yes   ☐ No
9. I find Duolingo very useful for understanding the meanings of complex and unfamiliar vocabulary.
   ☐ Yes   ☐ No
10. I would like my English teachers to encourage us to use Duolingo as a supplementary tool for learning new words during holidays.
    ☐ Yes   ☐ No

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