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**An investigation into the effect of using Duolingo application to enhance
students' vocabulary**

**The case of second year LMD students of English at Mohamed Kheider University of
Biskra**

A dissertation submitted to the department of English and Literature in partial fulfillment of the requirements for degree of Master sciences of the language

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DECLARATION OF INTEGRITY

I, "**Souiki Khouloud**", solemnly declare that the dissertation titled "**The effect of using Duolingo application to enhance students' vocabulary. The case of second year LMD students of English at Mohamed Kheider University of Biskra**"

submitted to the Department of the English language and Literature at Biskra University is entirely my own work, free from plagiarism, and has not been submitted to any other educational institution. I have appropriately acknowledged and cited all sources used, and I have conducted myself with academic integrity throughout the process. I understand the severe consequences of academic misconduct and affirm the authenticity of my dissertation.

Signature

Dedication

*I dedicate my research work to my lovely family. I would like to give my entire gratitude and appreciation to my beloved and precious father **Madani**, My deep love and profound affection go to my dear mother '**Houda**' to whom I owe a great debt. To my brothers, **Mostafa** and **Mohamed**, to my beautiful sisters **Aisha** and **Sounia** for their patience and help to complete this investigation. Special thanks go to my uncle **Souiki Khaled** and his beautiful wife **Saliha** who have supported me throughout this research.*

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Abstract

This present study aims to investigate whether the implementation of Duolingo application can enhance students' English vocabulary achievement. It has dealt with L2 LMD students in the Department of English at Mohamed Kheider University of Biskra. The study has adopted a quantitative method research for data collection and data analysis. For data collection, a questionnaire is administered to fifty-one (51) L2 LMD students who use Duolingo selected based on convenience sampling at the Department of English. Concerning data analysis, the computer program Statistical Package for Social Sciences (SPSS) is used to analyze the numerical data obtained from the closed-ended items of the questionnaire. The results of the study have demonstrated that L2 students have positive attitudes towards using Duolingo to learn vocabulary. That means that the hypothesis of this study was accepted and Duolingo Application can be used to improve students' achievement in learning vocabulary .The researcher suggests the English teachers to use Duolingo Application as the media in teaching English vocabulary because it can make students more interested in the teaching and learning activity.

Key words: Duolingo, MALL, EFL, Vocabulary, second year, University of Biskra

List of Abbreviations and Acronyms

EFL: English as a Foreign Language

LMD: Licence, Master, Doctorat

MKUB: Mohamed Kheider University of Biskra

ICT's: Information and Communication Technologies

IOS: iPhone Operating System

ET: Educational Technology

FLT: Foreign Language Teaching

E-Learning: Electronic Learning

M-Learning: Mobile Learning

MALL: Mobile-Assisted Language Learning

CALL: Computer-Assisted Language Learning

Apps: Application software

L2: Second Language

SPSS: Statistical Package for Social Sciences

WAP: Wireless Application Protocol

RQ: Research Question

Q: Questions

WBL: Web-based Learning

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Introduction

Vocabulary is a fundamental aspect of language development and is crucial for success in reading, writing, listening and speaking. The ability to expand one's vocabulary and increase their word knowledge can significantly impact students' ability to communicate and comprehend language. Carter & McCarthy (2014) stated that a person who masters vocabulary is a person who can use words and understand the meaning of them. Learning English vocabulary by using software and other apps is a good way, especially Duolingo. There are four reasons for learning from software and apps: convince, economy fun, and variety (Darlene, 2018). Duolingo is a widely used language learning application that provides users with a gamified approach to vocabulary building and language learning. The use of Duolingo has become increasingly popular as a tool for enhancing vocabulary among EFL students.

Statement of the problem

Due to the fact that vocabulary is a part of managing the four skills and that the Algerian educational community struggles with learning English, vocabulary should be given priority over other English learning components. EFL students communicate quickly for a variety of reasons, but one of the main reasons is because they lack the necessary vocabulary. The hardest and most crucial skill in any language is vocabulary. This problem could not be solved without the use of various effective techniques. Each student chooses the best option based on their own requirements. The purpose of this study is to demonstrate how the use of "Duolingo" may be an effective and enjoyable technique for enhancing the vocabulary of EFL learners.

Aims of the study

This study aims to enhance second -year students' vocabulary through Duolingo application. EFL students of Mohamed KHIDER University want to make learning and using English, especially vocabulary, interesting and exciting for them. To be more specific, the purpose of this study is to get a full understanding of students' opinion regarding the use of the

Duolingo application and to identify the factors that motivate them to accept or reject the application as a tool for improving their vocabulary.

Significance of the study

The significance of this study can be seen at both the student and teacher levels. To begin with, it encourages students to use current technology rather than relying on teachers and their materials. Also, it informs second-year English Department students at Biskra University about the benefits of Duolingo, which is not only a source of learning but also a form of entertainment that can help students improve their vocabulary. Furthermore, it draws students' attention to the Duolingo application, which can assist them in accurately practicing the language. Another point of view is that EFL teachers must understand the value and the importance of using Duolingo to increase students' engagement and involvement in the English language environment. Duolingo may become a component of FLT due to the positive effects of game-based learning. As a result, this study is especially important for EFL university teachers of various modules because it encourages them to consider using the MALL Approach to teaching vocabulary that includes one effective tool, which is the Duolingo application.

Research questions

This research aims to answer the following questions:

RQ1: Is Duolingo application effective on student' vocabulary for EFL students?

RQ2: Do EFL second year students in the Department of English at MKUB have positive or negative attitudes towards using Duolingo application?

Research hypothesis

According to the questions mentioned above, we suggest the following hypothesis:

If Duolingo application is properly used, it will enhance EFL students' vocabulary.

Research methodology

Two variables are interrelated in this study. The Duolingo application is the independent variable, and the vocabulary of EFL learners is the main variable. A quantitative approach is

assumed to be the best choice for achieving the study's expected aims and goals. Essentially, we will use the descriptive method to describe EFL students' perspectives on the "Duolingo Application" as well as their use of it. We also considered how much this application helps EFL learners improve their vocabulary. The use of such a method is justified because it provides the researcher with a variety of data collection methods for gathering valuable information and gaining an in-depth understanding of the results.

Population and Sampling

The participants who were randomly chosen to represent this study are second-year LMD English students at Mohamed Kheider University of Biskra because they have already had previous exposure to the English language. Furthermore, individuals still face a number of difficulties and challenges when using this foreign language because of their average level (for the majority) and lack of vocabulary. From a total of 339 students, fifty one (51N) second-year English as a Foreign Language students were included in the current study sample. It specifically focused on students who are already familiar with this programme.

Limitation of the study

The population of the study is the Second year students of English department at Mohamed Kheider University of Biskra. Fifty one (51) students are randomly chosen to answer the questionnaire. The study of the Duolingo application effects is limited to one skill which is vocabulary and the purpose of this study is to describe how the Duolingo application can help EFL learners enhance their vocabulary. This representative number is necessary because the researcher wants to focus only on students who are already familiar with the Duolingo application.

Introduction

During the first decades of the 20th century, the vocabulary component of language got less focus than other language-related aspects. The preferred and most important subject to be taught was frequently grammar. However, vocabulary is absolutely a difficult undertaking and a crucial component of teaching and learning a language. A strong word knowledge assists students in understanding/receiving the input and generating the output of any language, whether it is their first, second, or a foreign language. This chapter will discuss the definition of vocabulary and the types of vocabulary. In addition, it will show the importance of vocabulary. In addition, the difficulties in learning vocabulary will be discussed. Moreover, it will define vocabulary-learning strategies and give the importance in helping learners increase their repertoire of vocabulary. Finally, it will focus on the different types of vocabulary learning strategies.

The Definitions of Vocabulary

Vocabulary is regarded as the foundation for learning any language because it aids in the expression and performance of our thoughts and ideas. Many academics have different definitions of vocabulary. According to Hatch and Brown (1995:1), they say that vocabulary refers to a list or set of words for a particular language or a list or set of words that individual speakers of language might use; they also state that vocabulary is the only system involved of alphabetical order. Neuman and Dwyer (2009: 385) further define vocabulary as "words we must know to communicate effectively: words in speaking (expressive vocabulary) and words in listening (receptive vocabulary)". This implies that vocabulary improves conversational ability. Simply said, a person's vocabulary is a list of the words they know how to use. According to Ur (1994: 60) vocabulary is defined as "the words we teach in the foreign language". Additionally, Brown (2001:

377), views vocabulary items as "a boring list of words that must be defined and memorized by the students, lexical forms are seen in their central role in contextualized, meaningful language".

Richard in Schmitt (1997: 241) also states that "knowing a word meaning, knowing how often it occurs, the company it keeps, its appropriateness in different situations, its syntactic behaviour, its underlying form and derivations, its word associations, and its semantic features".

Hebert and Kamil (2005: 3) define vocabulary as "the knowledge of meanings of words". The word "vocabulary" has several different connotations. For instance, some teachers use the term to refer to students' meaning vocabularies, which are words they understand as sight words. Still other educators use the term to refer to their students' listening vocabularies, which are collections of words they pick up while speaking. Academic vocabulary, as used by content teachers, refers to words that are exclusive to a given subject. In this part, we use the term "vocabulary," which refers to conceptual knowledge of words that goes well beyond a simple dictionary as they make connections to other words, learn examples and non-examples of the word and related words, and use the word accurately within the context of the sentence (Snow, Griffin, & Burns, 2005).

From those claims, it can be observed that vocabulary is a list of words as a fundamental part of language competency that has a form or expression and includes of aspects, they are meaning, use of word, form (pronunciation and spelling).

The Importance of Vocabulary

One of the most important aspects of language ability is vocabulary, and its significance cannot be emphasized. Those who have a large and varied vocabulary are better able to express their thoughts and ideas precisely, clearly, and effectively. EFL students must master vocabulary in order to comprehend the target language.

Vocabulary plays a significant role in the process of acquiring a language, in fact. To be able to speak effectively and appropriately, EFL students must memorize a substantial amount of vocabulary, as a weak vocabulary repertoire results in a bad communication.

According to Krashen (1989: 440) when students travel, they do not carry grammar books, they carry dictionaries". In other words, grammar is not as important as vocabulary. Even when they use incorrect grammar, EFL students are still able to convey meaning.

Vocabulary is essential for communication, academic success, and language proficiency. For people who want to improve their language abilities and succeed in their academic and professional goals, developing a rich and varied vocabulary is important.

As Graves (2006) notes, "a rich vocabulary is one of the most important tools for understanding and communicating in any language." Zimmerman (1997: 5), as cited in Wu (2009:10), states that vocabulary is central to language and of critical importance to the typical language learners. In order to learn English well, EFL learners have to master English vocabulary.

As Rivers (1983: 125) in Nunan (1991: 117) argues that the acquisition of an adequate vocabulary is essential for successful second language use because without an extensive vocabulary, it will be unable for learners to use the structures and functions they may have learned for comprehensible communication.

Learning something new is crucial for learners, but it will be challenging them to do so if they are unaware of its significance. In order for students to master the target language they are learning, understanding vocabulary is essential. It is also possible to teach students how to communicate verbally and nonverbally.

According to Alqahtani (2015)," limited vocabulary can hinder successful communication so knowing a lot of vocabulary for second language learners is very important". This can

make it easier for them to acquire new skills or determine the foreign language they wish to learn." Vocabulary is considered essential to successful second/foreign language learning" (Schmitt, Citation, 2000).

In addition, it is supported by UR (1996: 60) that vocabulary is one of important things to be taught in learning foreign language because it will be impossible to speak up without variety of words. In addition, McCarthy (1990) states that "no matter how well the Students learn grammar, or how successful the sounds of the language are mastered, without words communication cannot occur in any meaningful way". Wilkins in Thornbury (2004: 13) states that "without grammar very little can be conveyed, without vocabulary nothing can be conveyed".

Types of Vocabulary

Harmer (1991) distinguished between the two types of vocabulary. The first type of vocabulary refers to the one that the students have been taught and that they are expected to be able to use. The second one refers to the words that the students will recognize when they meet them, but they will not be able to use them. Also, Pikulski and Templeton (2004, p.2) demonstrate that vocabulary items play a dominant part in learning to communicate effectively while listening, speaking, reading, and writing.

Furthermore, Hycraft (1978, p.44) put the distinction between receptive and productive vocabulary. The receptive vocabulary as "those which the students recognize and understand when they occur in context but which he cannot produce correctly". The students can understand these kinds of words in the text they find difficulty in production.

Whereas the productive vocabulary as "those that the students understand can produce correctly in speaking and writing". When the students recognize, they will be produce the language in good

way. Writing and speaking are considered to be productive skills, while vocabulary based on reading and listening is known as receptive skills.

In addition, the receptive refers to words that one can recognize when they are read or heard, and the productive refers to terms that students utilize in writing or speaking when they use their own words.

Receptive Vocabulary

This type of vocabulary refers to the words that a learner can understand when reading or listening to a language. Receptive vocabulary is an essential component of language comprehension and reading skills (Nation, 2013).

Redman & Gairns (1986 p. 64) defined it as "Receptive vocabulary is the language items which can only be recognized and comprehended in the context of reading and listening material".

Accordingly, Nation (2001 p. 38) defined receptive vocabulary use as that of "perceiving the form of a word while listening or reading and retrieving its meaning".

Productive Vocabulary

This type of vocabulary refers to the words that a learner can use when speaking or writing in a language. "Productive vocabulary is crucial for effective communication and writing skills." (Schmitt & McCarthy, 1997).

Alqahtani (2015 p. 25) explained it by saying "productive vocabulary is the words that the learners understand and can pronounce correctly and use constructively in speaking and writing". It involves what is needed for receptive vocabulary in addition to the ability to speak or write at the appropriate time.

Therefore, productive vocabulary can be seen as an active process, because the learners can produce the words to express their thoughts to others (Webb, 2005)

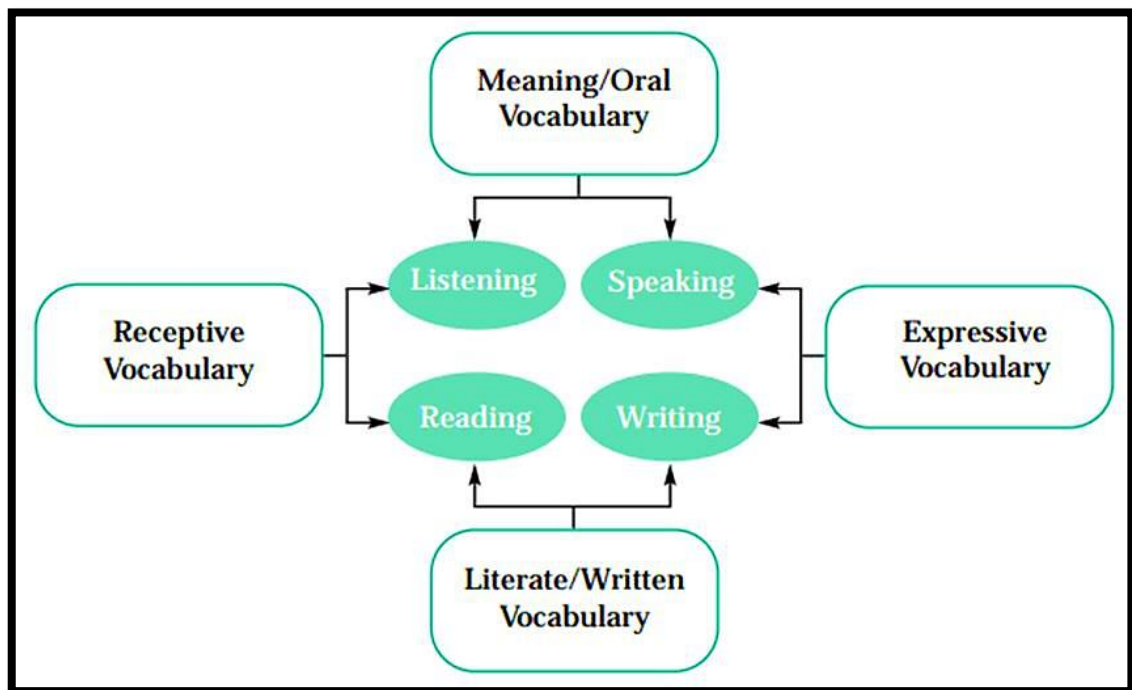


Figure 1: Types of vocabulary (Adapted from Pikulski and Templeton (2004, p. 2))

In fact, it had been suggested that vocabulary be divided into two categories. Redman & Gairns (1986) commented that polarizing vocabulary into productive and receptive categories, in this way, may seem rather artificial, and indeed the decisions to be made will not be that clear-cut. Furthermore, in relation to kinds of vocabulary, Nation (2001) states that there are four kinds of vocabulary. These kinds are academic vocabulary, High-frequency vocabulary, Technical vocabulary and Low-Frequency vocabulary.

Academic Vocabulary

This type of vocabulary includes words that are commonly used in academic contexts, such as in textbooks, lectures, and research papers. Academic vocabulary is essential for academic success and critical thinking skills (Coxhead, 2000). These words typically represent approximately 14% of the main words in the text; they include terms like "policy," "phase," "adjusted," and "sustained," which are frequently used in various academic works.

High Frequency Vocabulary

High frequency vocabulary is a term used to describe terms that are often used in oral and written communication and are commonly utilized in ordinary language. These are the words that individuals tend to encounter and use in a regular basis. In other words, high frequency vocabulary are simply those which appear most frequently in spoken or written content. Such as (in, of, and, the, as and it). These words present about 80% of the text's running words (Nation, 2001, 2013). Furthermore, these frequently words with little intrinsic meaning, but they add a lot to the meaning of a sentence. Knowing high frequency vocabulary is important for effective communication, as these words make up a significant portion of everyday language.

Technical vocabulary

Technical vocabulary is the specific terminology used by professionals in a specific field to communicate clearly, precisely, pertinently, and succinctly. It is essential to increase your English vocabulary on a broad level before working on your technical vocabulary. Furthermore, according to (Nation, 2001: 18-19) these words represent approximately around 5% of the text's running words, and they include several terms that are quite relevant to the subject. The technical terms used in this context are indigenous, regeneration and beech forest planting.

Low-Frequency Vocabulary

Low frequency vocabulary are those words that appear in a language only occasionally. A word's frequency is often determined by counting how many times it appears in a given text, corpus, or sample of spoken language. Low frequency terms can range from being more specialized or technical to being less frequent in regular speech and writing. Scientific terminology, obscure historical or literary allusions, and specialist jargon used in a particular sector or field are examples of low frequency words in the English language. These are the terms with a moderate frequency that failed to make the list of words with a high frequency. In fact, here are thousands of these

words (Goulden, Nation and Read, 1990) and they typically cover around 5% of the running words in texts.

According to those experts' interpretation, vocabulary can be categorized into two categories: productive vocabulary, which is based on activity (writing and speaking), and receptive vocabulary, which is more passive (written and printed). These two categories of vocabulary include academic, technical, and low-frequency terms in addition to high-frequency words.

Problems in Learning Vocabulary

When learning vocabulary, a variety of lexical factors must be taken into consideration. EFL students usually struggle to remember and comprehend the language. One of the reasons is that the students are bored during the class, among other things that stimulate it. The vocabulary learning process, in which students acquire new words by listening to their teachers explain them, becomes boring for them. Students own relatively few dictionaries as well. Their use of English in interactions is constrained. According to Azar, (1999) "many students do not want to take risks in applying what they have learned. Students may recognize a word in a written or spoken form and think that they already "know the word", but they may not be able to use that word properly in different contexts or pronounce it correctly". The learners' productive vocabulary is emphasized. Students must apply their vocabulary in writing or speaking in order to go on to the next stages of vocabulary mastery. Nonetheless, it has been discovered that pupils are anxious to use the words they already know to describe themselves.

There are more variables as well that frequently cause students to have trouble learning vocabulary. Based on Lado (1972: 1) as cited in Mardianawati (2012: 11), the vocabulary aspects consists meaning, Spelling, pronunciation, word classes, and word use. Moreover, according to Thornbury (2002, p.27) "some words seem easier than others". What makes the word hard is closely related to its pronunciation, spelling and grammar, meaning, length and complexity. In line with

learning English vocabulary, English vocabulary differs from the Algerian form in terms of word meaning, pronunciation, and spelling. The words are also pronounced very differently when spoken than when written. As a result, learning vocabulary is frequently challenging for every person, especially English language learners

Meaning

The denotation of a word is its true meaning, which may be found in the dictionary definition. The majority of students are aware that this is a crucial component in learning new vocabulary, but this is not the only thing you should be aware of. Depending on the context in which it is used, a word may have more than one meaning. English words generally have many meanings.

Even though a word's meanings can differ substantially, some of them may be similar. Nation (2001) stated that "meaning encompasses the way that form and meaning work together". The term "**head**" for instance, has nine meanings listed for the verb form and 32 meanings for the noun form.

Spelling

Spelling is important for vocabulary learning since it facilitates reading. Many words in English are spelled differently from how they sound, making English spelling notoriously challenging. For instance, while having quite distinct connotations, the words *tort* and *taught* are both pronounced exactly the same, i.e., /tɔ:t/, while *tuff* and *tough* are both pronounced /tʌf/. Even though those two words are spelled differently than the other two, the first word in each case is more closely spelled to how it is pronounced. Nearly every phoneme (unit of sound) can be spelled in several ways. Even among native speakers, there are frequent spelling errors.

A spelling of a word confuses many students, especially words that contain silent letters such as: foreign, listen, headache, muscle. (Thornbury, 2002, p.27)

Pronunciation

Pronunciation is how words are pronounced. Knowing how a word is pronounced is especially important if you want to use it in your speaking, or understand it when listening. Pronunciation, like spelling, can be a difficult area, with some words that are spelled similarly being pronounced in different ways. For instance, tough, though and thought, which all contain the combination */ough/*, are pronounced */tʌf/*, */ðoʊ/* and */θɔt/* respectively. The main difference here is the vowel sounds. O'Connor in Hassan (2014:34) reported that it is not simple to know the exact sounds of the letters in a certain language. Indeed English has a particularly large number of vowel sounds when compared to other languages, and these tend to be the area which learners struggle with the most, with consonants being relatively straightforward. The vowels of English differ considerably between dialects, which is another source of difficulty.

Grammar

Grammar can be a challenge for some learners when it comes to acquiring new vocabulary. This is because grammar rules are often complex and can be difficult to understand and apply correctly. For instance, if a student is attempting to learn the English word "*run*," the fact that the term's past tense is "*ran*" may throw them off. Without a grasp of English grammar, they might not be aware that this is a typical irregular verb and might find it difficult to recall the right form of the term to use in a sentence. Similar to this, a learner may have trouble recalling the proper preposition to employ with a certain verb or may be unsure about the right sentence structure.

Haudeck, (1996, cited in European Commission, 2006) has reported that many learners have difficulty in internalizing grammar rules, although these have been taught intensively. These kinds of problems may prevent students from clearly comprehending how words fit together in a phrase, which can make it more difficult for them to learn and remember new vocabulary.

Word classes

Word classes is a collection of words that share similar formal characteristics, particularly in their distribution and inflections. According to Croft,(2001:11) “word classes (traditionally called parts of speech) are groups of words in a language that fill similar slots in an utterance and share some linguistic properties, whether those properties are semantic, syntactic, or morphological”.

The grammatical patterns that students should practice fluently include nouns (countable and uncountable), verb complementation, phrasal verbs, adjectives, and adverbs. This classification of words in a language is based on how they are used for communication. Nouns can appear in specific contexts and perform specific tasks in sentences. Word class membership is an important lexical characteristic since verbs also have certain places and functions.

Word use

Word use is the use of a word, phrase, or idea in a language or linguistic variation. According to Nation (2001), “word use is one aspect of word knowledge that consists of knowing the grammatical functions, the collocation, and the different constraints of word use”. Word use involve grammar and thus be the subject of profound analysis. Lexicographers gather samples of written instances of a word's use and study them in order to identify patterns of geographical or social usage as well as meaning.

A phrase, such as the English word "*donny*," which describes a small, round rock around the size of a man's head, can only be used in a few particular places or it might be widely used by Standard English speakers over the world with several meanings.

Length and Complexity

Length and complexity are indeed two difficulties that learners may encounter when trying to learn vocabulary. According to Brown, G., & Yule, G. (1983) length refers to the number of letters and syllables in a word. Longer words may be more challenging to learn because they require more

effort to pronounce and remember. For example, "*supercalifragilisticexpialidocious*" is a famously long and complex word that would be challenging for many learners to remember and use.

According to Crystal, D. (2003) complexity refers to the level of difficulty in understanding a word's meaning, pronunciation, or usage. Complex words may have multiple meanings, irregular pronunciations, or nuanced connotations. For example, "*facetious*" is a word that is difficult for many learners because its pronunciation does not match its spelling, and its meaning may be confusing or unclear.

Vocabulary Learning

The process of acquiring new words and learning their definitions and contexts, then storing them in memory, is known as vocabulary learning. Depending on the aims, preferences, and learning style of the learner, vocabulary can be acquired through a variety of methods and strategies. These are the two primary approaches of learning vocabulary:

Intentional learning

Intentional learning is when a learner consciously sets out to learn new word. This kind of learning typically occurs in a classroom setting or through independent study where students actively interact with the subject matter through the use of flashcards, vocabulary lists, or quizzes. Because it enables students to concentrate on particular words or phrases, which they can subsequently practice and reinforce through various tasks, intentional learning can be beneficial. Hatch and Brown stated that (1995, p.369) "Intentional learning as being designed, planned for instead teachers or students."

Incidental learning

Incidental vocabulary learning is referred to as accidental learning. This kind of education generally happens naturally in ordinary circumstances, such as when reading, listening, or conversing with people. A person might learn a new word when reading a book, watching a movie,

or talking with someone. The ability to encounter new vocabulary in context, which assists in comprehension and retention that tends to make incidental learning very effective. Hulstijn (1996, cited in Grass 1999) asserted that definition of incidental learning “is learning in the absence of an intention to learn”.

Both intentional and incidental learning have their benefits and drawbacks, and most language learners use a combination of both methods. Intentional learning is helpful when trying to learn specific vocabulary or when preparing for a language exam, while incidental learning can help learners build their vocabulary more organically and naturally.

Vocabulary Learning Strategies

Learning and remembering new words may be difficult for language learners. One approach facilitates vocabulary learning is vocabulary learning strategies. (Schmitt, 2000 p.133). Vocabulary-learning strategies are meant to assist students in improving their vocabulary and language competency by increasing the effectiveness, efficiency, and enjoyment of the learning process.

Definition of VSL and Their Importance

Vocabulary learning strategies are the approaches and procedures used to acquire and retain new terms and phrases in a language. One method employs memory, word lists, and dictionaries, as well as a diversity of reading, listening, writing, and speaking activities. Intaraprasert (2004, p.203) stated that “any set of techniques or learning behaviors, which language of learners use to understand the meaning of a new word to restore the knowledge of newly learned word, and to expand one’s knowledge of vocabulary”.

Effective vocabulary learning strategies are critical since vocabulary is such an important aspect of language proficiency. Moreover, Vocabulary learning strategies are the methods or approaches people use to deliberately learn and remember new words and phrases in a second or

foreign language. These techniques are important for language learners who want to increase their vocabulary and general language skills.

Effective vocabulary learning techniques have been found to significantly enhance vocabulary acquisition and retention. According to Cameron (2001.p.92) VLS are “actions that learners take to help themselves understand and remember vocabulary items.” Therefore VLS is “the process by which information is obtained, stored, retrieved, and used”. (Rubin, 1987, Cited in Brigitta Doczi, 2011, p.139). That means looking up in dictionary to find out the meaning of a word and writing words then practice it. VLS greatly assists learners in acquiring vocabulary, and an enormous amount of vocabulary is learned while learners utilize VLS. It also provides greatly to the learners' vocabulary understanding. For this reason, teachers have to provide their students with many strategies so that they can select the individual strategies that suit their individual learning styles. (Harmer, 1991, p.229).

In this context, Schmitt (2000) saw the need to help learners choose the strategies necessary to learn words on their own. There are various vocabulary learning strategies and learners can use different types of them.

Types of Vocabulary Learning Strategies

Language learners are able to use a variety of techniques to effectively learn and retain new words and phrases. Vocabulary learning is an essential component of language acquisition. These techniques aim to improve retention and recall while also developing relationships between new and prior knowledge.

The following are the most important types of vocabulary learning strategies that have been recognized and investigated by language education scholars.

Semantic Mapping Strategy

Semantic mapping is a visual technique that links new words or concepts to their definitions or other terms that are linked to them. It aids students in organizing and incorporating new terminology into their pre-existing mental schema, improving retention and recall. According to Eskey (1988), "semantic mapping is a useful technique for enhancing vocabulary learning as it promotes meaningful learning and facilitates the mental connections between new and existing knowledge".

Contextual Clues Strategy

Contextual clues are words or phrases that can be used to determine the meaning of an unknown term. Utilizing the context of the text, such as the words before and following the target word, to infer its meaning is part of this method. Ellis and Beaton (1993) state that "contextual clues are an important source of vocabulary learning, and learners should be encouraged to use them to guess the meaning of unknown words".

Word Families Strategy

Word families, also known as word roots, are collections of words that have a common origin. Understanding word families can help students comprehend and retain a variety of terms with related meanings. For instance, the roots of the terms "transportation," "transport," and "transported" are all the same. Nation (2001) suggests that "learning word families is an effective vocabulary learning strategy as it allows learners to expand their vocabulary by acquiring related words with similar meanings".

Flashcards Strategy

Flashcards are physical or digital cards that have a target word or phrase on one side and its description or meaning on the other. Flashcards allow students to review and test their knowledge of vocabulary in an active way, which helps them remember and recall words more easily. Oxford

(1990) argues that "flashcards are a popular and effective vocabulary learning strategy, as they promote active engagement, repetition, and retrieval practice, which are crucial for long-term retention"

Repetition Strategy

Webb (2007) finds out that the learners can gain greater knowledge about the words as repetition of the words is increased. His research suggests that the more frequently learners meet the same terms, the greater their opportunity to build their knowledge about those words.

In addition, repetition is very important for students who struggle with memorization in second or foreign languages because they will naturally start using the same vocabulary repeatedly.

Word Guessing Strategy

During reading or listening, second-language learners frequently come across unfamiliar words. They feel forced by this to make educated assumptions about unfamiliar vocabulary. Clarke and Nation (1980. p.217) claimed that, "the ability to guess the meaning of words without referring to a dictionary saves times and allows the reader to continue reading without interruption" The meaning of a term can be determined by looking at the roots and affixes of a new word, assuming from context, or thinking of a relative word in one's mother tongue.

Conclusion

The majority of EFL learners face significant issues with their vocabulary knowledge, and its importance in language learning is essential. Learning new words can be challenging for EFL students due to their word structure, meaning, pronunciation, and other factors. It is important to understand the process of learning language. Either consciously (Intentional learning) or unconsciously (Incidental learning). Additionally, without a VLS foundation that helps learners in enhancing their lexicon, vocabulary development would not be successful.

Introduction

Technology has changed the way that learners acquire and use new abilities in the present immediate digital world. As a result, mobile-assisted learning language is critical in education since it provides various benefits when correctly applied both inside and outside educational intuitions, particularly universities. In fact, educational platforms might represent one of the most innovative learning applications for increasing and promoting EFL students' vocabulary learning and understanding. Duolingo is a technology-driven application that has achieved significant popularity among students to enhance vocabulary.

This chapter will present some background information on mobile learning, Mobile-Assisted Language Learning and mobile applications in language learning. After that, it introduces Duolingo, its purpose, its tasks, its advantages and disadvantages. Finally, we have mentioned the effect of using this application in improving the learner's vocabulary.

Mobile Learning

Many scholars defined mobile learning, or m-learning, as new type of learning model that allows students to learn anywhere and at any time. Kukulska-Hulme (2005) defined it by saying “it is certainly concerned with learner mobility, in the sense that learners should be able to engage in educational activities without the constraints of having to do so in a tightly delimited physical location”

Others have defined mobile- learning “as taking place when the learner is not in a fixed location and when he takes advantage of the learning opportunities offered by mobile technologies” (O'Malley et al., 2005, p. 6 cited in J.Herrington, A.Herrington, J.Mantei, W.Olney & B.Ferry, 2009 P.17). “Research on m-learning initially focused on the mobility of the technology, but

recently has moved from this interpretation to know that it is the mobility of the learner and the learning that is important” (Sharples, Taylor, & Vavoula, 2007).

M-learning is also defined in terms of mobility of technology, learning and the learner (El-Hussein and Cronje, 2010). Firstly, the mobility of technology refers to mobile devices with Wi-Fi capacities and Wireless Application Protocol (WAP) that deliver information and learning materials through the Internet or satellites, that enable learners to learn anywhere, anytime. Secondly, mobile learning enhances the mobility and dynamism of the learning processes. In fact, the mobile device allows learners to experience personal and unique learning and they can easily connect with each other for their own purposes and interests in order to accomplish their learning objectives (Sharples et.al, 2005). Finally, mobile learning enhances the mobility of individual learners. It is beneficial because most of the learners prefer to be independent and free especially in learning, because they want to develop a sense of individuality, community and ubiquitousness that make learning more enjoyable and effective (Kim and Kwon, 2012). In this respect, mobile learning refers to the use of mobile devices as educational tools to access learning materials at anytime and anywhere.

Mobile-Assisted Language Learning

The fast increasing literature on mobile learning generates a novel method to language learning, including learning English as a foreign language. This innovative method is known as Mobile-Assisted Language Learning (MALL). MALL is defined as a method of language learning that is enhanced or aided by the use of handled devices. Miangah and Nezarat (2012: 313) state that “MALL deals with the use of mobile technology in language learning. Students do not always have to study a second language in classroom. They may have the opportunity to learn it using mobile devices when they desire and where they are. In other terms, it is the use of mobile devices in language learning, and it allows learners to learn the language both in and out of the classroom”.

Kukulska-Hulme and Shield (2008: 273) claim that MALL differs from CALL “in its use of personal, portable devices that enable new ways of learning, emphasizing continuity or spontaneity of access across different contexts of use”, while CALL is “a term used for the collection of technologies aimed at enhancing creativity and collaboration, particularly through social networking” (Beatty 2010) In other words, CALL refers to the use of computer technology in language learning. Thus, MALL is a subset of M-Learning and an evolution of CALL. The rapid transformation of CALL into MALL has brought huge transformation in foreign language learners’ attitude towards language learning (Kukulska-Hulme, 2009).

MALL can be viewed as an ideal solution to language barriers in terms of place and time (Miangah and Nezarat, 2012). Mobile Applications (Apps) have emerged as a tool to support MALL and assist students in their language learning as a result of the advancement of mobile technologies.

The Use of Mobile Apps in Language Learning

Mobile applications for language learning have acquired in popularity due to their accessibility, convenience, and effectiveness. These apps provide a variety of features like as interactive courses, vocabulary exercises, speaking practice, and cultural insights that can be accessed at any time, from any location via a mobile device. Prizes, badges, and progress tracking are common gamification tactics used to keep learners motivated and interested. To increase language input and provide a more immersive learning experience, mobile apps can also make use of multimedia resources such as audio recordings, videos, and interactive games. It is mentioned that students use technology mostly in their everyday life and find it valuable, easy and it motivates the learning process, including learning a foreign language (Cakir, 2016).

Learning through technology is called Educational Technology (ET) or 'e-learning'. It refers to the intentional use of networked Information and Communication Technology (ICT) in learning and teaching (Naidu, 2006).

In simple terms, it is the utilization of modern scientific and technological breakthroughs to facilitate the teaching-learning process.

Mobile Apps for Language Learning

Language learning apps are a relatively new type of educational apps whose purpose it is to facilitate language learning. It is indicated that mobile technologies have the advantage of "anywhere and anytime" which supports the idea of adapting MALL in educational contexts to engage students 'learning abilities (Kukulska-Hulme, 2006).

Research on MALL shows that mobile devices and their apps are beneficial for foreign language learning, especially thanks to their interactivity, ubiquity and portability features (Klimova, 2018). According to Techopedia (2013), "a mobile application, most commonly referred to as an app, is a type of application software designed to run on a mobile device, such as a smartphone or tablet computer.

Mobile applications frequently serve to provide users with similar services to those accessed on PCs." Mobile apps are software applications that run on smartphones, tablets, and other mobile devices to provide users with a variety of services. A mobile app, such as Google Play for Android, can be downloaded via an app store, as well as Apple's App Store for (iOS). Furthermore, some of the accessible programs are free to use, while others are not. Mobile applications are one of the most important and convenient devices for providing a simple approach for EFL students to learn the language both online and offline in English language training. Furthermore, they aim to fulfill

instructional objectives, improve learning quality, and facilitate the learning process by carefully selecting tools such as quizzes and games.

Thus, Rossing et.al (2012) claim that using mobile apps makes learning fun, valuable, collaborative and useful. Gilgen (2004) also argues that mobile apps are user-friendly and interesting when they are used in language learning. Moreover, other studies (e.g. Böhm and Constantine, 2016; Zou and Li, 2015) state that Mobile Learning applications can provide EFL students with diverse resources to help practice English, increase the academic success, allow students to build positive attitudes towards learning English language, develop students' motivation and prompt their desire to study English.

According to the research listed, mobile applications benefit learners by increasing performance, motivation, and creating favorable attitudes about language learning. Language learning applications are being developed and are widely used by a large number of learners in many different disciplines of education, particularly in learning English as a foreign language. El-Hussein and Cronje (2011) state that, the number of teachers and students who use mobile apps as a teaching and learning tool is rapidly growing.

Indeed, there are numerous language learning devices that may be accessed for free as long as an internet connection is available. Duolingo application is one of the options that is widely available.

Definition of Duolingo Application

Duolingo is an application made to make it easier for learner to learn many languages for free and in an easy way. Duolingo is a gamified language learning application accessible for both Android and iOS systems, and is available as a website. According to The Guardian, Duolingo Application was initiated by the end of 2009 by the professor Luis Von Ahn and his student Severin

Hacker. It was launched for general public in June 2012 and currently provides 68 distinct language courses in 23 languages, with 22 additional courses still in development. Duo is the official mascot of Duolingo. It is a green owl, similar to the spectacled owl species in the real world and is meant to symbolize knowledge, wisdom, and learning (See figure 2).

Duolingo is a free language learning applications and website. As stated on their website, "Duolingo builds a world with free education and no language barriers. Users are able to learn languages for free while simultaneously translating web" (Jaskova, 2014, p.16). In Addition, Duolingo is a multilingual program that allows users to learn multiple languages, including English, Greek, Arabic, Dutch, and French. Despite the fact that there are other languages available for learning, English is the most popular language (Duolingo, 2021).

Furthermore, Krashen (2014) gives this application positive feedback. In other words, he describes Duolingo as a web-based learning and self-paced language-learning application that guides users through a variety of challenges, the majority of which are focused on translation. Munday (2016) says that although Duolingo seems to be a highly modern-looking game program, the majority of the tasks required to finish the courses are centered on translation, dictation, and pronunciation. Additionally, she believed Duolingo added gamification features to inspire and engage learners. For this, Duolingo uses some game based elements, including reward by collecting lingot or gems after completing a lesson or a daily goal, badges after completing a monthly challenge, level system and a leader board which allows users to see where they are comparing to the other users. This application is simple to use, it offers a variety of languages, and assists individuals who desire to learn a foreign language.

Furthermore, it has several features that make learning any language simple, such as daily word lists, repetition, conversation with other users, reinforcement through sending notifications as a reminder, and translation. In Fact, Duolingo platform was awarded Google Play's Best of the

Best 2013 for innovation due to its effective gamification strategies. It is utilized to get many people to acquire new things.



Figure 2: The Duolingo Application on the App Store (App Store Preview, n. d).

The Purpose of Duolingo Application

The Duolingo application's purpose is to provide an enjoyable and engaging platform for language learning. Duolingo's objective is to make language education free and accessible to everyone who has access to the internet. The application provides a diverse set of language classes ranging from beginner to expert levels of ability. Through interactive exercises, quizzes, and challenges, Duolingo's primary purpose is to help users learn a new language or enhance their present language skills. Gamification tactics are used in the app to make the learning process more entertaining and to encourage users to continue their language-learning journey.

Duolingo provides an organized curriculum that includes lessons on vocabulary, grammar, listening, speaking, and reading comprehension. Moreover, to educate and reinforce language concepts, the application use a combination of text, voice, and visual signals. It also provides quick feedback on user responses, helping them to learn from their mistakes.

Duolingo is intended to be convenient and adaptable, allowing users to learn at their own rate and on their own time. It has a mobile-friendly layout that makes it accessible on smartphones and tablets, as well as a website version for desktop users. Duolingo also allows users to create individual objectives, track their progress, and earn virtual incentives as they proceed through the lessons.

Lionetti (2013) has pointed out several objectives of the Duolingo application. The first one is to teach users to speak another language for free. The second is to make learners understand and be able to speak a phrase or sentence in another language. The third objective is to let them listen to a phrase or a sentence in their target language and type it out. The next one is the ability to write correct words to the matching pictures. The last one is to make users develop skills to translate words and sentences from their chosen language to English Overall, the Duolingo app's purpose is to make language learning accessible, enjoyable, and effective for people all around the world, regardless of their background or previous language learning experience.

Types of Duolingo Exercises

Wagner & Kunnan (2015: 322) say that Duolingo has four separate tasks such as vocabulary task, listening task, Translation task, and speaking task. Because each user may have a distinct order and task, there is a computer adaptive test in which the order and occurrence of tasks are varied dependent on the replies of each user.

According to Nushi & Eqbali (2017), Duolingo is a useful language application, this is because Duolingo can provide practical and systematic activities that can be used by learners in learning a new language personally. Duolingo's activities are as follows:

Vocabulary and Grammar Exercises

Duolingo provides a variety of exercises focused on specific grammar rules, vocabulary themes, verb conjugation, and sentence construction. For example, in vocabulary assignments, the learners can select many words from a grid on the screen. Then users must choose the appropriate English vocabularies. Llach, (2009) emphasizes the effect of vocabulary exercisers in promoting vocabulary knowledge. The grammar-translation approach has a high potential for language development, and Duolingo mostly uses it to teach learners in the target language. (See Figure 3)



Figure 3: Vocabulary Exercise (Nushi, and Eqbali, 2017, p92)

Listening and Exercises

Listening can be used to test the learner's ability to listen. Users must properly type the words they hear orally. This activity is typically similar to a dictation model. Users can choose between using speed and slow when listening to the offered test. Students must preserve an appropriate listening environment that triggers their potential to participate, which ameliorates their pronunciation (Mart, 2013). (See Figure 4)

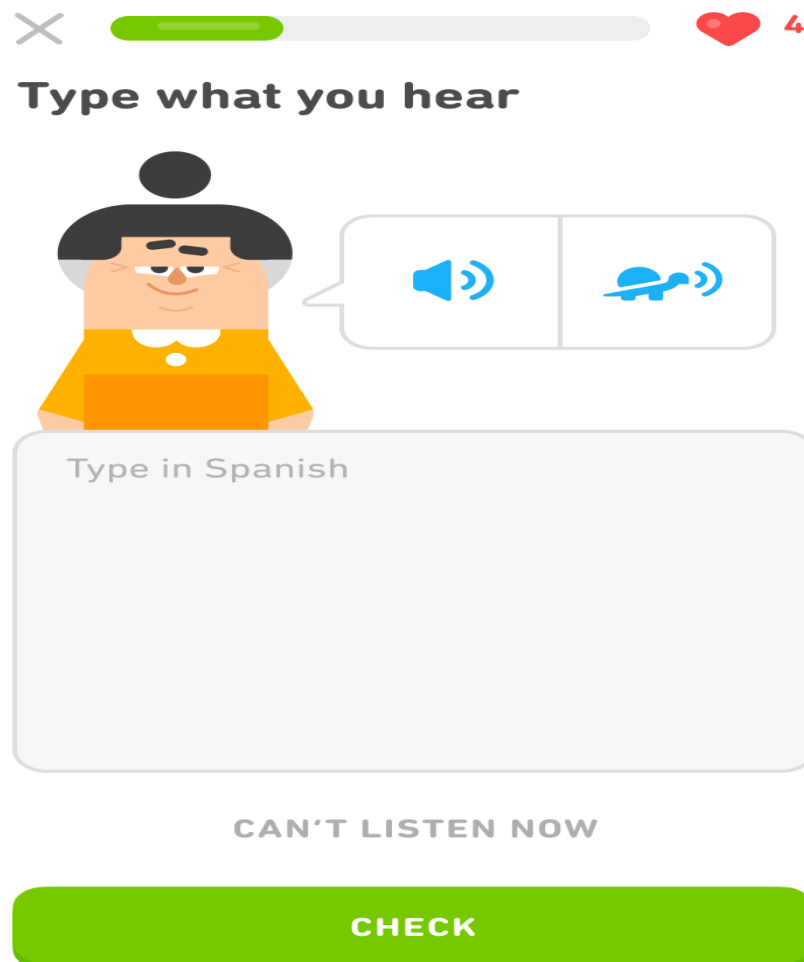


Figure 4: Listening Exercise (Nushi, and Eqbali, 2017, p.92)

Translation Exercises

According to Chang (2011), "The Grammar Translation Method is more effective in improving learners' learning confidence, and motivation than the Communicative Approach." The following task is to complete sentences. The user will be presented with a number of words that must be sorted into correct sentences. It is often used as a practice activity to improve vocabulary, grammar and comprehension skills in a target language. The context of the sentence and the words provided can vary, depending on the specific learning objective or exercise. Duolingo conveys information to students via translation and a communicative method. The grammar-translation strategy has a tremendous potential for language development, and it is primarily used by Duolingo to educate learners in the target language. (See Figure 5)

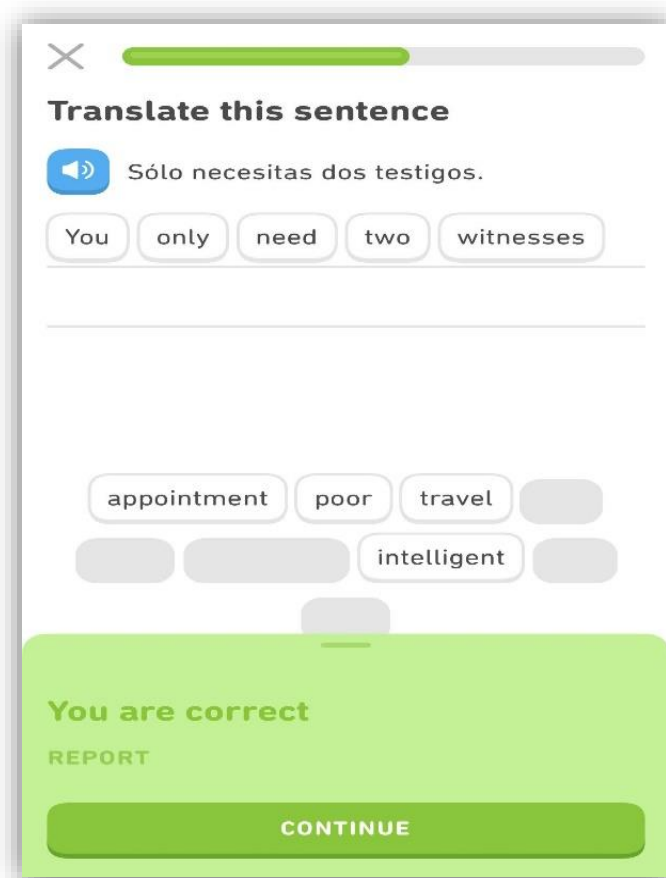


Figure 5: Translation Exercise (Nushi, and Eqbali, 2017, p.92)

Speaking Exercises

This approach is characterized by the following: memorized words, word consolidation, good pronunciation, and no grammar rules (Brown, 2006). Speaking is the final assignment in Duolingo.

The user will be provided on-screen instructions such as "say this sentence" during this activity. The user after that must click on the microphone icon and read the given written sentence.

In other words, Duolingo grades your pronunciation as you speak the translated word or sentence in the target language through the microphone. (See Figure 6)



Figure 6: Speaking Exercise (Nushi, and Eqbali, 2017, p.93)

Advantages and Disadvantages of Duolingo

Duolingo is a popular language-learning platform that offers several advantages and disadvantages. Here are some of them

Advantages

White and Siracusa (2013) believe that Duolingo allows learners to make connections between their L1 and the target language (TL) through translation while offering its users many opportunities for enjoyment, rewards and success, and offers powerful customization for each learner. Duolingo was created to use a combination of activities like as listening, transcribing, speaking, and translating in a simple interface while working through words and phrases. Lionetti (2013) states that Duolingo provides comprehension, that is it interacts with the user in different contexts, verbally, written and visually. The author also adds that it is user friendly and can be accessed anywhere and anytime; it is a medium of learning language that allows the learners to learn wherever they have internet connection and whenever they like it. Also, there are other advantages of using Duolingo application that are supported by other researchers ,such as gamified learning experience, accessibility and convenience, structured curriculum and community and social interaction.

Gamified Learning Experience

Duolingo's platform integrates gamification features, making language learning more engaging and entertaining. It encourages learners to progress by using a point-based system, leveling up, and unlocking achievements. According to Vesselinov, R., & Grego, J. (2012), the gamified approach of Duolingo positively affects learners' motivation and engagement levels.

Accessibility and Convenience

Duolingo is offered as a mobile app and a web platform, making it available to students at any time and from any location. This flexibility enables students to incorporate language learning into their busy schedules. According to Graham, C. R., & Misanchuk, M. (2013), Duolingo's accessibility and convenience contribute to increased usage and consistent learning habits.

Structured Curriculum

Duolingo has a well-structured curriculum that guides students through numerous levels and classes, gradually improving their language skills. Each lesson focuses on a different aspect of vocabulary, grammar, and language. Christison and Murray (2014), "the curriculum is as the organization of instruction, planning, teaching, and evaluation of a course". In fact, Duolingo's curriculum design helps learners progress systematically and gain confidence in their language abilities.

Community and Social Interaction

Duolingo allows learners to connect with others, join clubs, and take part in language learning challenges. This social aspect allows for peer support, language practice, and cultural exchange. In terms of Duolingo, the domain would be the practice of language learning, "the members share the same enthusiasm for languages and are dedicated to this activity on different levels" (Richards, M. 2016). The community engagement in Duolingo positively influences motivation and learning outcomes.

Disadvantages

White and Siracusa (2013: 2) argue that "Duolingo would not be good for learning an entirely new language of which one has no knowledge". They also add that using Duolingo "is better for

reviewing a language one has already started learning or for learning a language that is closely related to one that you already know, and one of the most common complaints is that many users could benefit from more explicit grammar explanations and practice".

In another meaning, it indicates that one must have prior understanding of the language that one wishes to study. Another disadvantage is that Duolingo does not provide explanations for learning grammar. In fact, students should find a method to incorporate it into their other lessons. Furthermore, Duolingo will be difficult to use in class if there is no internet connection because this media is based online.

If Duolingo is to be used in the classroom, the teacher must prepare a projector so that students can be more active and engage in the teaching and learning process. In addition, Teachers need to prepare many things such as loudspeakers, notebooks if they are going to be done in a regular class.

The Effect of Using Duolingo in Learning Vocabulary

Given the importance of vocabulary in learning English, it is critical to acquire it. Of course, learning vocabulary requires the proper methods. Considering the advancements in technology, one method for learning vocabulary is through technology.

According to Ajisoko (2020) that in the industrial revolution 4.0, learning English needs to be combined with technology. Furthermost, vocabulary learning can be assisted by English learning applications. Guaqueta & Castro-Garces (2018) stating that using English learning applications helps students develop vocabulary and can even motivate students to read more in English. They add that this can happen because using the English Learning Application is a way of learning that is much more dynamic and fun. Using Application helps in learning vocabulary. This is also supported by Bustillo et al. (2017) also supported this, that there is an increase in vocabulary mastery when learning to use technology, in this case the Language Learning

Application. One application that can be used for learning English is Duolingo. According to Ali and Deris (2019), Duolingo is an ideal application to use in learning and teaching vocabulary.

The use of Duolingo to improve vocabulary is that it is used to motivate students to be interested in learning more vocabulary, one of which uses the feature of games in the Duolingo application, so the learning process becomes fun; the games use English so that students close a new vocabulary that they have not known yet.

According to Wijaya, Yufrizal, & Kadaryanto (2016) Duolingo can make students more active and motivated in the learning process, as said by Clark (2013) that technology can improve effectiveness of vocabulary teaching efforts. Also state that technology can be useful, challenging, creative tool and resource in and around the classroom.

Using the features of the Duolingo app encourages students to explore new things on a big scale, including the ones that make learning while playing. Furthermore, on this Application, there is a "Duolingo friend" option where they can speak different languages, particularly English, polishing their capacity to add new words.

Ajisoko (2020) agree that what makes Duolingo effective is that it is interesting and easy to understand the material in it, especially vocabulary. Also added that the students get a fair turn in practicing the material, can eliminate boredom in learning and encourage students to learn something new. Using Duolingo is effective because it can be used anywhere and anytime, providing opportunities to be more active in learning vocabulary, as well as growing enthusiasm and motivation in learning vocabulary.

Conclusion

To summarize, this chapter offers a review of relevant literature on our research topic, which is the effect of using Duolingo application to enhance student's vocabulary. It demonstrates the significance of mobile learning and mobile applications in EFL learning. Nowadays, Learners have access to a variety of mobile devices and can download various mobile applications such as "Duolingo" in order to improve their vocabulary knowledge. It also introduces the effectiveness of using Duolingo and its value in helping EFL students improving and learning vocabulary.

Introduction

This chapter is practical. It describes the procedures of data collection and data analysis adopted to answer the questions of our research topic, entitled “the use of Duolingo to enhance student’s vocabulary”. It deals with the presentation of the findings obtained from the questionnaires administered to (51) second year students in the department of English at Mohamed Kheider University of Biskra, who use Duolingo language application. For the sake of readability and visibility, the results are presented in percentages and displayed in tables, diagrams and pie charts. Firstly, it includes the research method, context and participants of the study. Secondly, it depicts the procedures of data collection which is a questionnaire. Finally, it ends with the procedures of data analysis which consists of quantitative analysis.

Research Method

In order to conduct our investigation, we have opted for a quantitative method research. According to (Creswell, 2003, p. 153), quantitative research involves the collection of data so that information can be quantified and subjected to statistical treatment in order to support or refute “alternate knowledge claims”. In other words, the quantitative method is adopted to collect statistical data from the closed-ended items of the questionnaire that should be presented by using tables and diagrams (pie charts, bar charts, etc...) and later is analyzed using the Statistical Package for Social Sciences (SPSS). We believe that such an approach can be suitable for the nature of our research as the objective is merely to describe the multiple uses of “Duolingo” application as a pedagogical tool especially in enhancing EFL students’ vocabulary.

Furthermore, the quantitative method is the best way to obtain as many pieces of information as possible, and to have a clear insight of our research topic.

Data Collecting Methods

Several methods can be used to collect data such as questionnaires (structured, semi-structured and unstructured), interviews (structured, semi-structured and unstructured), observations, focus groups, etc. However, in our case, we relied on one tool that is the questionnaire. A semi-structured questionnaire is designed to gather data from second-year EFL students at Biskra University and collect their opinions and attitudes concerning the enhancement of their vocabulary using Duolingo application.

Students' Questionnaire

The Population and Sample

Frankel & Wallen, (2006, p. 476) claim, "The population of interest is typically a group of persons who poses a certain characteristic (or set of characteristics)". In this study, the targeted population is 2nd year LMD students in the Department of English at Mohamed Kheider University of Biskra during the academic year 2023/2024. The reason behind choosing to work with 2nd year LMD students is because they have been studying oral expression for many years and have enough knowledge of the strategies and tools used to teach and learn vocabulary. So, they are believed to give us valuable answers and favorable ideas about the relationship between the Duolingo application and vocabulary and how this application can improve their vocabulary knowledge. Hornby (2000 as cited in Makhloufi, p. 67) refers to the sample of the study "as the selected number of people from the whole population". We deal with a sample of fifty one (51) students from a total population of about (N=339). Precisely, the selection of

this sample was purposive. It mainly targets those students who are already familiar with the Duolingo application.

Research Variables

Our current study "The Effect of Duolingo Application on improving students' vocabulary learning" consists of two main variables namely: (1) independent variable and (2) dependent variable.

The Independent Variable

The independent variable of this study is Using Duolingo Application by Second year LMD students of English at Mohamed Kheider University of Biskra.

The Dependent Variable

The dependent variable of this study is the improvement of student's vocabulary learning.

Procedures of Data Collection

In order to investigate students' use of Duolingo language application to enhance their vocabulary, one main tool is used. A questionnaire is given and administered to fifty one (51) second year students who use Duolingo application, in the Department of English.

Questionnaire

The questionnaire is one of the most valuable and supportive research instruments for collecting both quantitative and qualitative data. Brown (2001: 06) defines the questionnaire as "any written instrument that presents respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers". In a simple way, it is a set of written items to be answered by respondents to get information about a particular topic.

The aim of the questionnaire is to obtain information about the effect of using Duolingo language application to enhance their vocabulary.

It is made up of fourteen (14) closed-ended questions which ask students to provide precise responses by choosing an answer, simply by "yes" or "no", or by choosing a suitable answer, while two (02) of them allow students to express their own opinion by justifying their choices. The questionnaire is divided into three (03) main sections: vocabulary learning, students' information about Duolingo, and student's attitudes towards the use of Duolingo to learn vocabulary.

Procedures of Data Analysis

This section presents the method adopted to analyze the quantitative information gathered from the questionnaire. The quantitative data gathered are analyzed using the Statistical Package for Social Sciences (SPSS).

Quantitative Analysis

For the analysis of the numerical data gathered from the closed-ended questions of the questionnaire, the Statistical Package for Social Sciences (SPSS) is used. It is defined as a general statistical software tailored to the needs of social scientists and the general public' (Blumenthal, 2010: 1). In other words, it is computer a programme, which helps to analyze statistical data and organize them into tables and diagrammes.

Section One: Vocabulary Learning

Q1: Do you consider Vocabulary as an important aspect in learning English?

The outcomes reveal that all the participants consider vocabulary as an important language skill in learning English.

Please justify your answer

Students were asked to justify their answers. Their comments state that vocabulary is the foundation of the language and that it enhances other language skills such as listening, speaking, reading, and writing. Many of them pointed out the importance of speaking ability,

claiming that vocabulary allows for good knowledge of the language and improved communicative skills. Others argued that it allows for the creation of rich pieces of writing.

Q2: How do you evaluate your English vocabulary?

Table 1

Students' Evaluation of their English Vocabulary

	Answers	Percentages%
Good	18	35,29%
Average	30	62,75%
Poor	01	1,96%
Total	51	100%

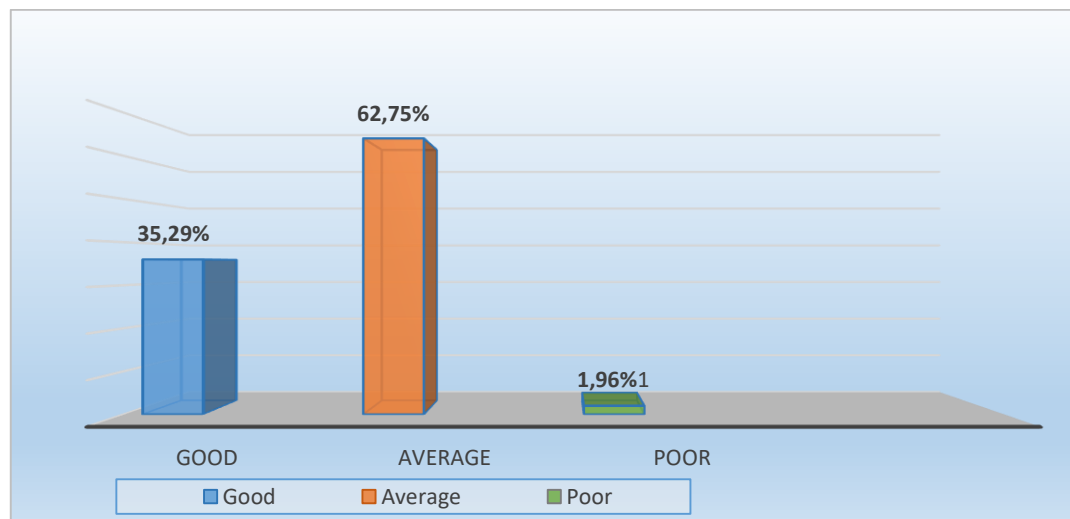


Figure 7: Students' Evaluation of their English Vocabulary

In question 2, we asked students to evaluate their level in English as being good, average or poor. As shown in figure (07), the majority of the students representing (.62.75%) have said that their English vocabulary is “average”. Eighteen (18) students representing (35.29%) have said that

they have a “good” English vocabulary repertoire, while only one (01) representing (1.96%) claimed to have a “poor” English vocabulary repertoire.

Q3: What kind of problems do you face when you encounter new words?

Table 2

Vocabulary Learning Problems

Vocabulary Problems	Answers	Percentages%
Pronunciation Problems	10	19.6%
Memorizing Problems	21	41.1%
Spelling Problems	9	17.6%
Meaning Problems	11	21.5%
Total	51	100%

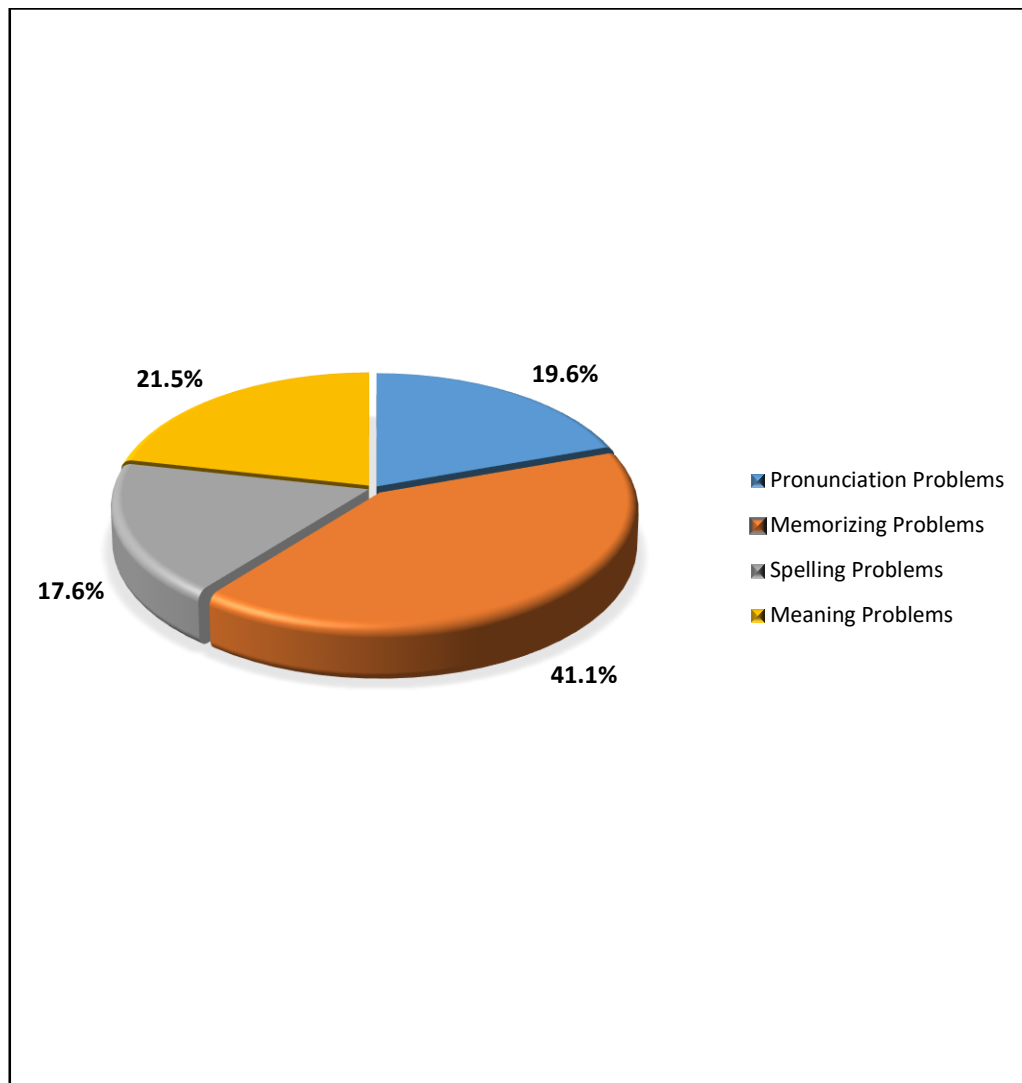


Figure 8: Vocabulary Learning Problems

Table (02) and figure (08) indicate that twenty-one (21) students representing (41.1%) face memorizing problems when encountering new words. Ten (10) representing (19.6%) said that they face pronunciation problems. Nine (09) representing (17.6%) claimed to have spelling problems, and eleven (11), which is (21.5%) face meaning problems.

Q4: When learning new vocabulary, which of the following strategies do you use?

Table 3

Strategies to learn vocabulary

Strategies to learn vocabulary	Answers	Percentages%
Mobile devices	39	76.4%
Books and printed materials	7	13.7%
Podcast	2	3.9%
Applications	2	3.9%
Note book and dictionary	1	1.9%
Total	51	100%

As it is seen in table (03), thirty-nine (39) students, representing (76.4%), use their mobile devices to learn vocabulary. Seven (07) representing (13.7%) claim that they use books and printed materials, while there are five (5) participants name other strategies, (02) representing (3.9%), name “listening to podcast”, other two students representing the same percentage (3.9%) name “using applications”, and only one student representing (1.9) has written “using note book and dictionary”.

Section Two: Students' information about Duolingo

Q5: Do you use Duolingo to learn English?

Table 4

The use of Duolingo to learn English

Options	Participants	Percentages%
Yes	40	78%
No	11	21%

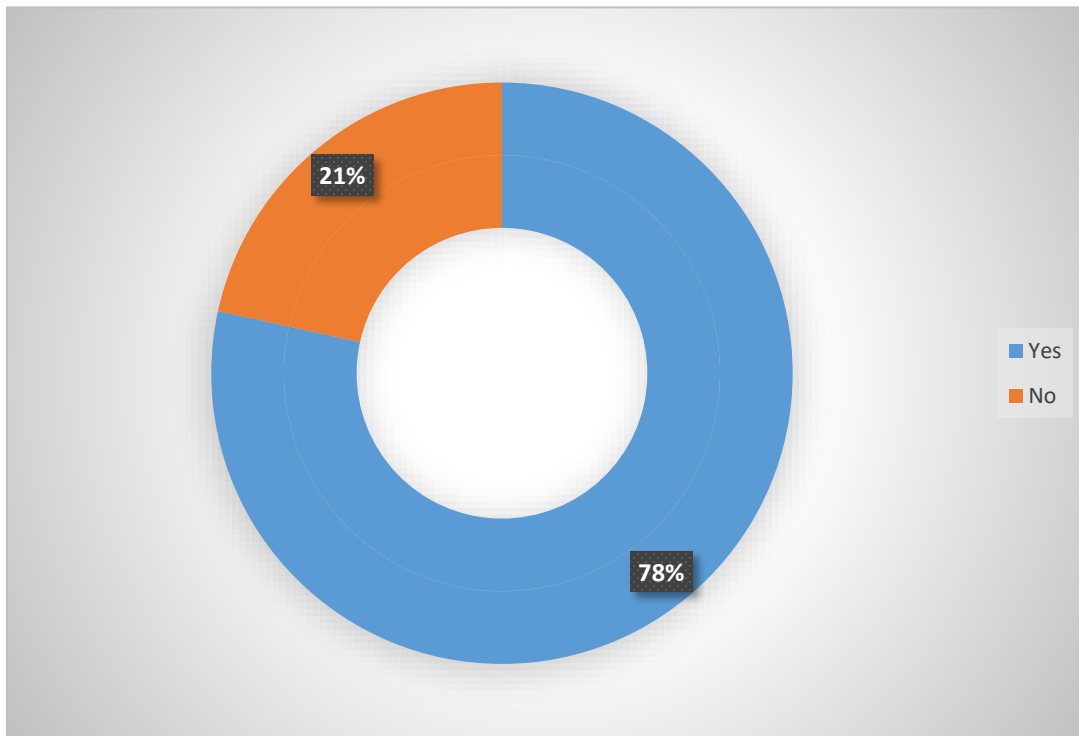


Figure 9: the use of Duolingo to learn English

Table (04) indicates that the majority of the participants representing (78%) do use Duolingo to learn English, while only (11%) of them do not use it.

Q6: How often do you use it?

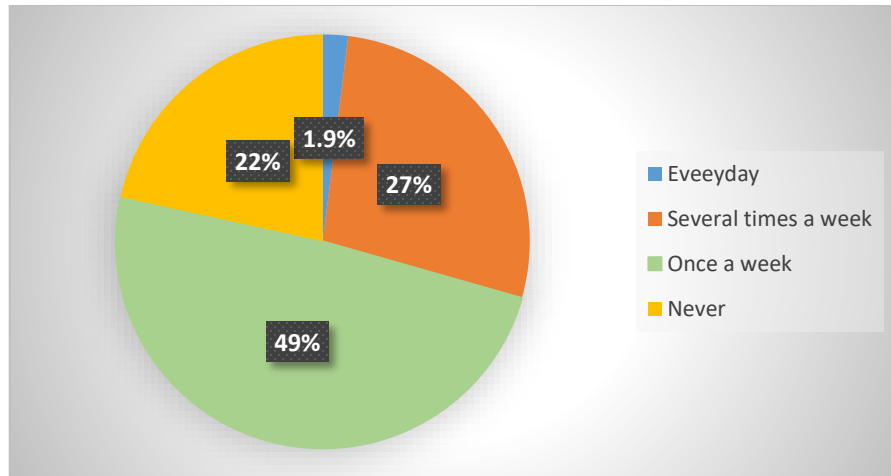


Figure 10: Students' Frequency of Duolingo Use

As it is illustrated in figure (10), twenty five (25) participants representing (49%), use Duolingo “once a week” and fourteen (14) students representing (27%) use it “several times a week”. Eleven students (11) representing (22%) claimed to have “never” used it, while only one which is (1.9%) use it “everyday”. These results indicate that nearly all the participants (90%) are active users of Duolingo in learning English.

Q8: Which aspect of English do you wish to improve when using Duolingo?

Table 5

The aspect of English that the students wish to improve when using Duolingo

Language aspect	Participants	Percentages%
Listening	3	5.8%
Grammar	6	11.7%
Vocabulary	29	56.8%
Pronunciation	13	25.4%
Total	51	100%

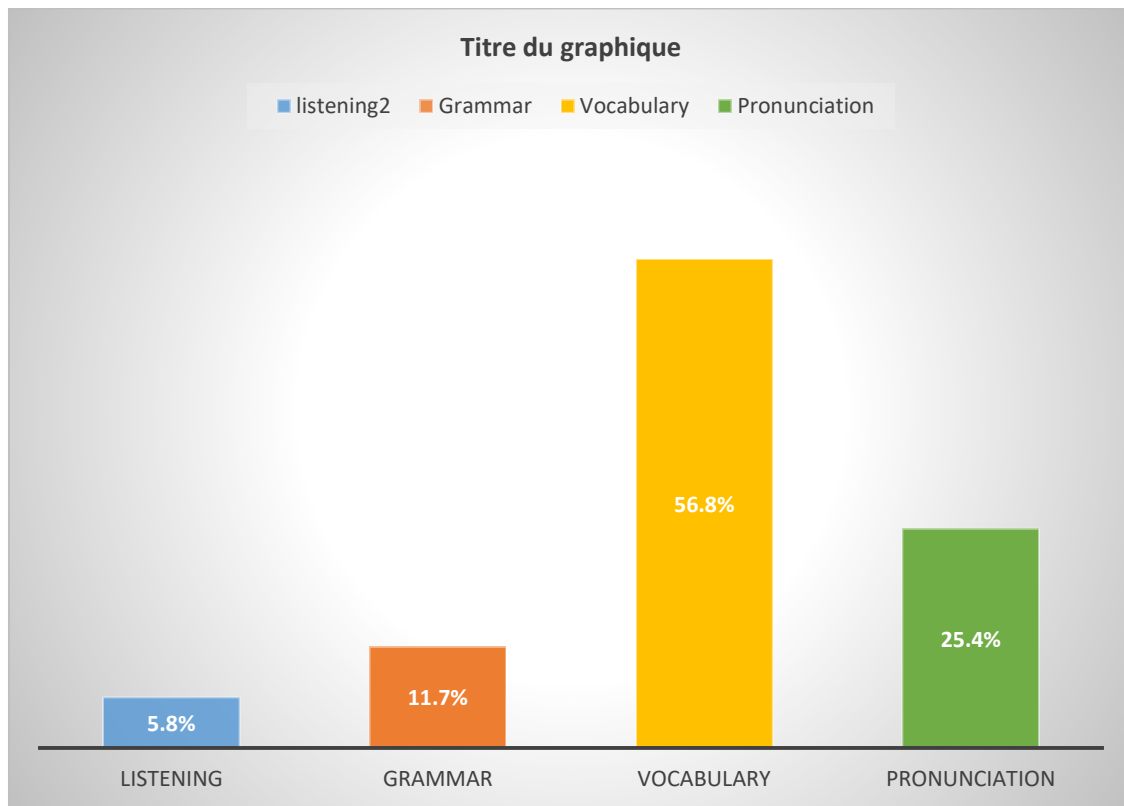


Figure 11: the aspect of English that the students wish to improve when using Duolingo

The aim of this question was to see which one of the four skills students would like to improve the most. As it is shown in table (05), twenty nine (29) of the participants representing (56.8%) wish to improve vocabulary when using Duolingo. Thirteen (13) representing (25.4%) wish to improve pronunciation, six (06) representing (11.7%) want to improve grammar and also three (03) others representing (5.8%) intend to improve listening.

From the results, it can be deduced that Duolingo as a MALL application favors important language aspects, including vocabulary, grammar, pronunciation and listening.

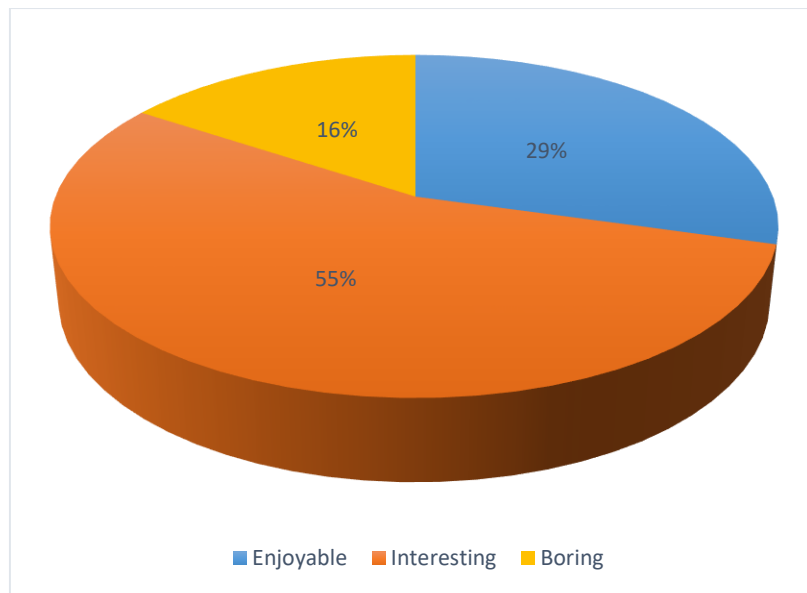
Section Three: Students' attitudes towards using Duolingo to enhance their vocabulary

Q8: How do you find learning vocabulary through Duolingo?

Table 6

Students' View about Learning Vocabulary through Duolingo

Options	Answers	Percentages%
Enjoyable	15	29%
Interesting	28	55%
Boring	8	16%
Total	51	100%

**Figure 12: Students' View about Learning Vocabulary through Duolingo**

As it is demonstrated in table (06) and figure (12), twenty-eight (28) students representing (55%) said that learning vocabulary through Duolingo is “interesting”. Fifteen (15) participants representing (29%) answered that it is “enjoyable”, while eight (08) which is (16%) find it “boring”.

Q9: Do you think that Duolingo increases your motivation to learn vocabulary items?

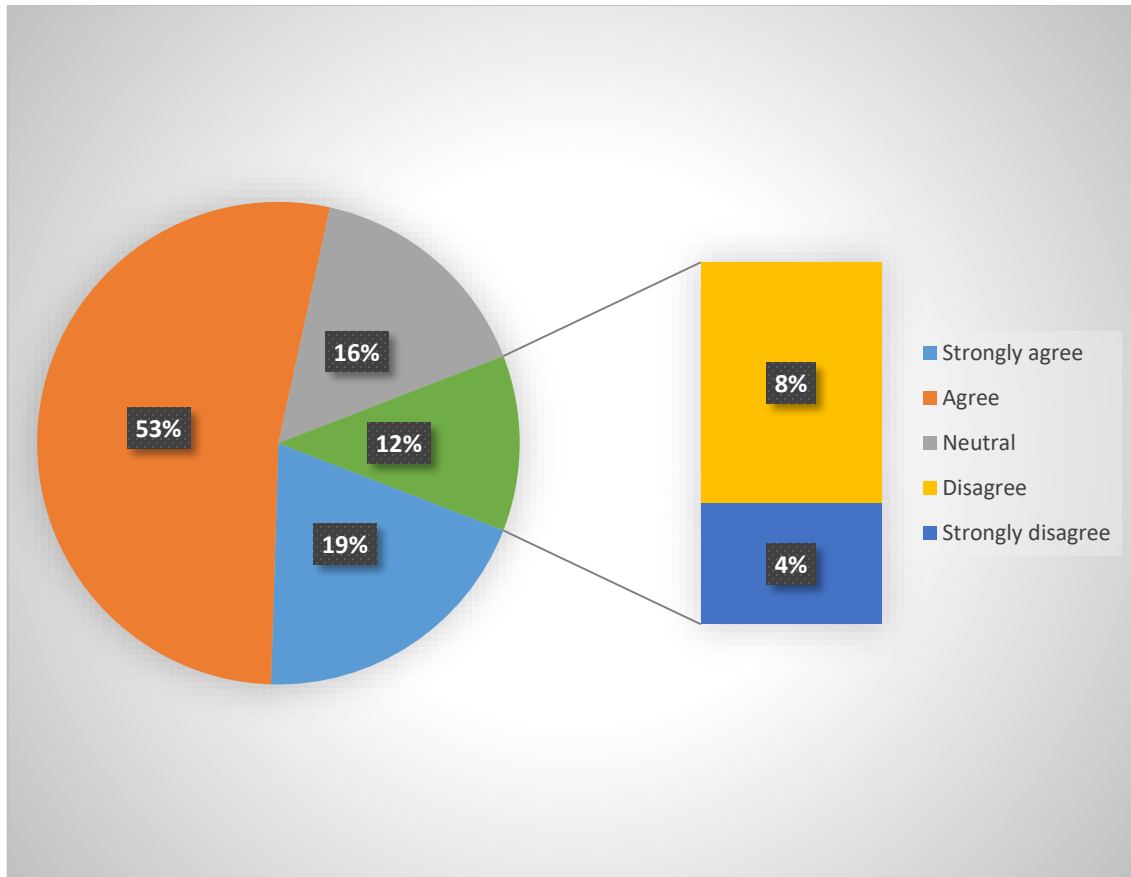


Figure 13: Students 'Motivation to Learn Vocabulary Items

According to figure (13), twenty-seven (27) representing (53%) of the students “agree” on the fact that Duolingo increases their motivation to learn vocabulary items and ten participants (10) representing (19%) said that they “strongly agree”. Whereas eight (08) representing (16%) are “neutral”. While, four (04) students representing (8%) said that they, “disagree”. Then only two (02) representing (4%) responded that they “strongly disagree”.

Q10: Do you think that Duolingo offers a good opportunity to learn vocabulary that Traditional methods cannot offer?

Table 7

Students' View about Duolingo Compared to Traditional Methods

Options	Participants	Percentages%
Strongly agree	12	24%
Agree	24	47%
Neutral	7	14%
Disagree	5	10%
Strongly disagree	3	6%
Total	51	100%

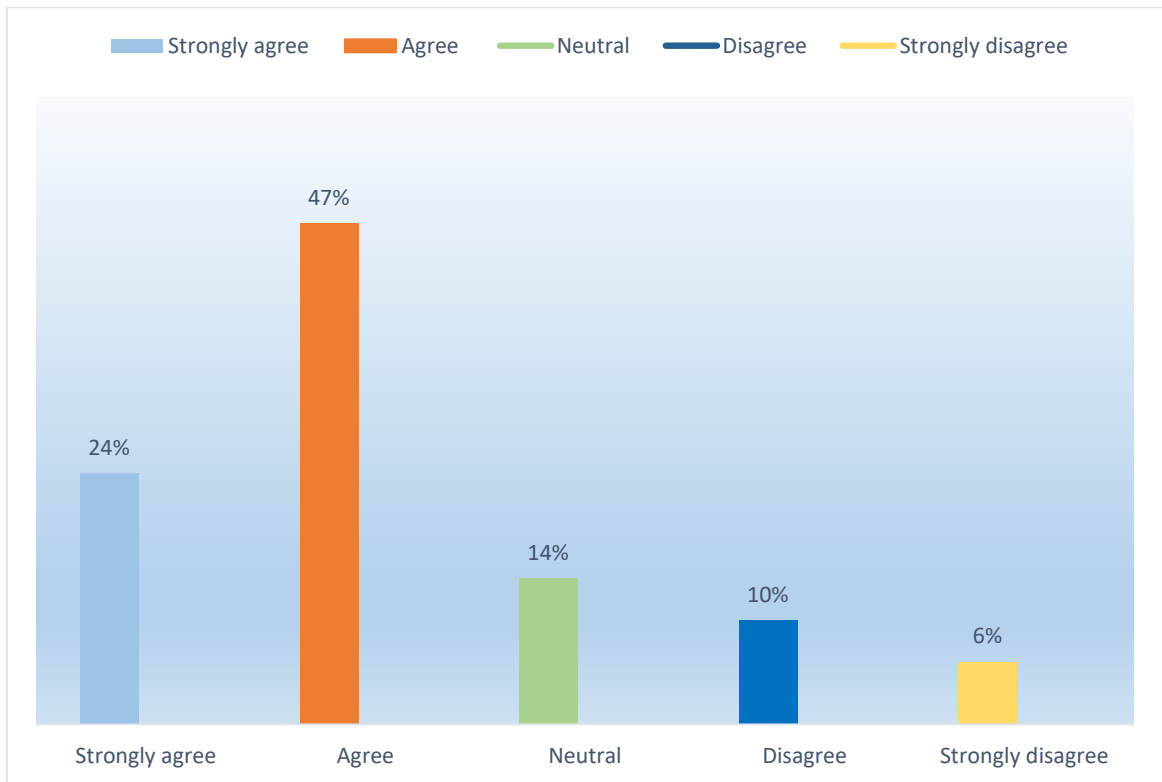


Figure 14: Students' View about Duolingo Compared to Traditional Methods

As it is mentioned in figure (14) and table (07), twenty-four (24) students representing (47%) “Agree” on the fact that Duolingo offers a good opportunity to learn vocabulary that traditional methods cannot offer. Twelve (12) representing (24%) are “Strongly agree” and seven (07) representing (14%) answered that they “Neutral”. Five (05) participants representing (10%) said that they “Disagree” and three (03) students representing (6%) responded that they “Strongly disagree”.

Q11: Does Duolingo help you overcome your vocabulary learning problems (meaning, pronunciation, spelling, memorizing)?

Table 8

Students' View about Duolingo as a tool to overcome Vocabulary Problems

Options	Participants	Percentages %
Yes	34	67%
No	17	33%
Total	51	100%

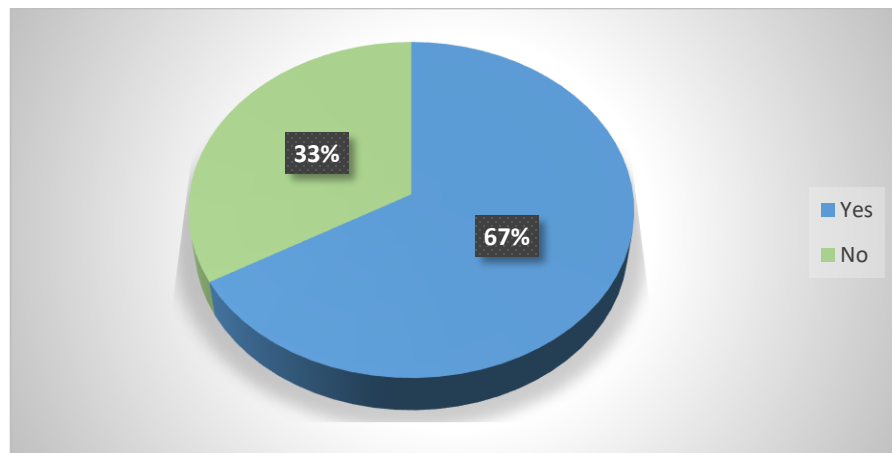


Figure 15: Students' View about Duolingo as a tool to overcome Vocabulary Problems

According to table (08) and figure (15), the majority of students representing (67%) answered that Duolingo helps them to overcome their vocabulary learning problems. Whereas, seventeen (17) students representing (33%) said that it does not help.

If yes, how does it help? Students who answered "yes" feel that Duolingo helps them overcome obstacles by providing a variety of tasks such as listening, speaking, and writing. Those who have pronunciation issues report that listening to the correct pronunciation of words, even complete phrases, helps them. They also stated that it provides the meaning of the phrases by simply clicking on them for individuals who have meaning problems. For spelling problems, each word is spelled correctly, and they finally claimed they are given the opportunity to memorize by listening and repeating at the same time, in spoken form or in written form.

Q12: Does Duolingo help you improve other English Language skills (speaking, listening, reading, and writing)?

Table 9

Students' View about Duolingo as a Tool to Improve other English Language Skills

Options	Answer	Percentages %
Yes	43	84%
No	8	16%
Total	51	100%

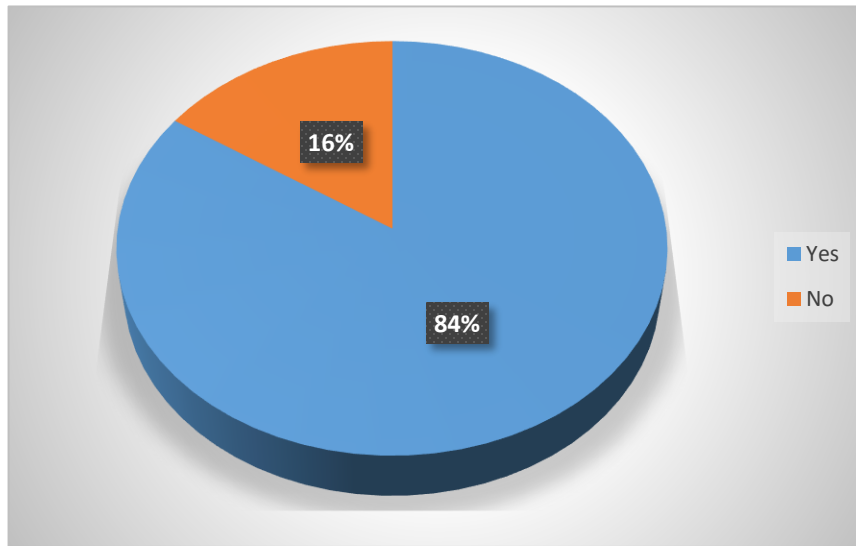


Figure 16: Students' View about Duolingo as a Tool to improve other English Language Skills

As it is indicated in figure (16) and in table (09), the majority of the participants that are (43) students representing (84%) answered that Duolingo helps them to improve other English language skills. Whereas, eight students (08) representing (16%), responded with a “No”

Q13: Do you use Duolingo in the classroom?

Table 10

Students' Use of Duolingo Application in the Classroom

Options	Yes	No
Yes	6	12%
No	45	88%
Total	51	100%

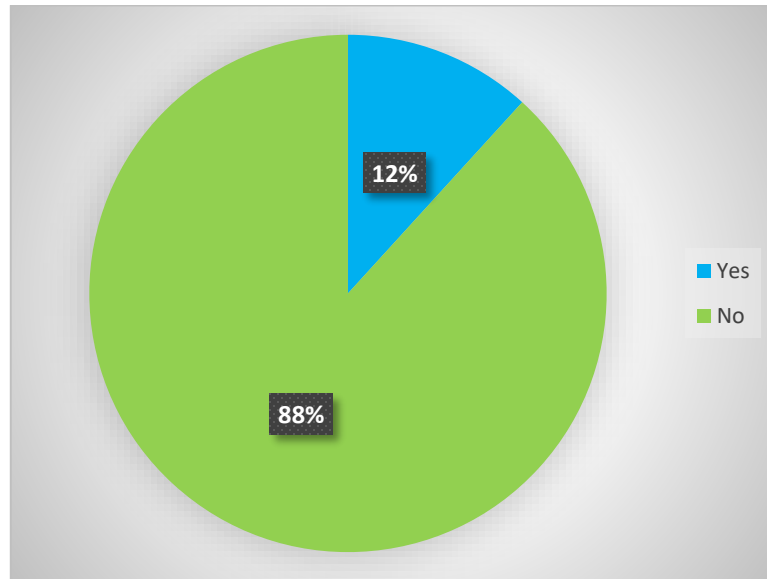


Figure 17: Students' Use of Duolingo Application in the Classroom

Table 10 and figure 17 demonstrates that forty five (45) students representing (88%), said that they do not use Duolingo applications in the classroom, whereas six (06) students representing (12%) answered that they do.

Q14: Would you like your teachers integrate Duolingo application in the Teaching learning process?

Table 11

Students' View about Integrating Language Applications in the Teaching Learning Process.

Options	Yes	No
Yes	26	51%
No	8	16%
Not necessary	17	33%
Total	51	100%

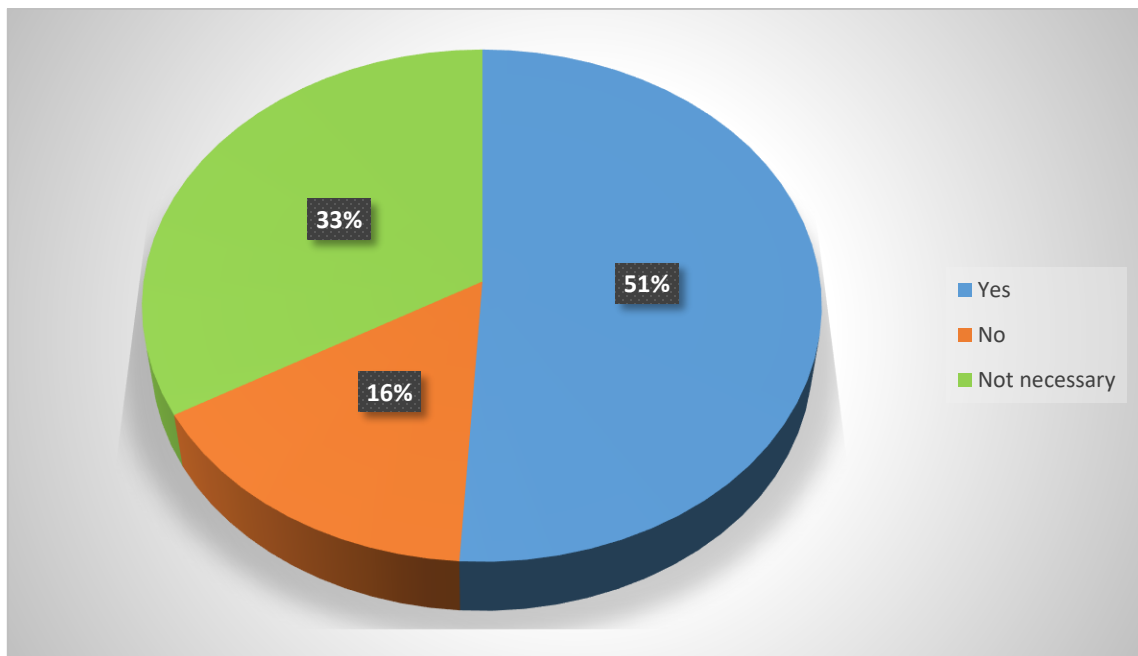


Figure 18: Students' View about Integrating Language Applications in the Teaching Learning Process

As it is shown in table (11), sixty-two (26) students representing (51%) said that they would like their teachers integrate Duolingo application in the teaching and learning processes. While, seventeen (17) representing (33%), answered that the integration is “Not necessary”, and only four (08) which is (16%) responded by “No”.

Discussion and Synthesis of the Findings

Students' View about Vocabulary Learning

The analysis of the students' questionnaire supplied us with interesting data that corroborate our hypothesis and allow us to address some of the critical research questions raised at the start of the study. It was about the function of the Duolingo application in improving students' vocabulary at Biskra University. When studying a foreign language, vocabulary is an important factor to

consider. When we asked second year students about the relevance of vocabulary study in the first (01) question, all of the participants agree. When asked to justify their response, they stated that vocabulary provides the foundation for strengthening other language abilities (speaking, writing, listening, and reading) and communicative competence. According to Krashen (1987: 440) who argues that “when students travel, they do not carry grammar books, they carry dictionaries”. (See chapter one).

In the second (02) question the findings of the study have revealed that thirty (30) students representing (62.75%) have an “average” English vocabulary repertoire. Eighteen (18) representing (35.29%) claim to have a “good” vocabulary, whereas only one (01), which is (1.96%), have a “poor” English vocabulary repertoire (See figure 07). As for the third (03) question, it is apparent that (21) participants representing (41.1%) face memorizing problems, while eleven (11) participants, which is (21.5%), encounter meaning problems. Pronunciation problems are faced by eight (08) students representing (15.4%) and spelling problems by only seven (07) representing (13.6%) (See table 02). These outcomes support the fact that vocabulary is not an easy task since learners encounter difficulties as stated by Harmer (1991) in the first chapter.

The results also have revealed that memorizing problems are the most encountered by the students, because of the large amount of words being learnt. The students need to remember the words they have learned, in order to use them when writing or speaking. The present study highlights that thirty-nine (39) participants representing (76.4%) use “mobile devices” to learn vocabulary. According to Karpenko and Magda (2021), there is an increasing tendency towards utilizing mobile technology for the purposes of language learning. Then, ten (10) of the respondents representing (19.6%) claim that they use “books and printed materials”.

The analysis shows that one (01) student has mentioned another strategy to learn vocabulary. Two (02) of them have mentioned “apps and social media” and that can be considered as a part of

mobile devices, the other two (02) students have mentioned listening to Podcast, while only one (01) student has mentioned using note book and dictionary (See table 03). These findings are supported by Brown and Payne (1994) who argue that in order to learn vocabulary, learners can check different sources, such as books, newspapers, and mainly electronic materials.

Students' Use of Duolingo Application

The study demonstrate that forty (40) representing (78%) use Duolingo application to learn English. While Eleven (11) participants do not use it (See table 04). As already mentioned in the Review of Literature (Chapter one), Duolingo is a multilingual application where learners can learn several languages, but English is the most learned one. According to the answers obtained from the sixth (06) question, it is deduced that twenty-one (21) participants representing (44%) use Duolingo to learn English “once a week” and twenty-five (25) representing (49%) use it “once a week”, whereas, fourteen (14) students representing (27%) use it “several times a week” and eleven (11) participants representing (22%) claimed to have “never” use it, while only one (01) representing (1.9) use it “every day.”(See figure 10). These results indicate that nearly all the participants (90%) are active users of Duolingo in learning English.

When asked about the aspect of English they wish to improve when using Duolingo, half of the participants (56%) mentioned that they intentionally want to improve their “vocabulary” which confirms what is stated earlier in the first chapter that Duolingo application can help learners to improve English language skills, mainly vocabulary. Then Thirteen (13) students representing (25.4%) responded by “pronunciation”, Six (06) representing (11.7%) said “grammar” and three (03) students representing (5.8%) replied by “listening” (See table 05). From the results, it can be deduced that Duolingo as a MALL application favor important language aspects, including vocabulary, grammar, pronunciation and listening.

Students' attitudes towards using Duolingo to enhance their vocabulary

From the outcomes of the eight (08) question, it is appears that twenty-eight (28) of the participants representing (55%) find learning vocabulary through Duolingo “interesting”, and fifteen (15) representing (29%) find it “enjoyable”; whereas, eight (08) participants representing (16%) responded by “boring” (See table 06).

The concept of gamification in Duolingo does not have to do with the act of playing, but with the characteristic of creating an interesting and enjoyable atmosphere in the learning process which is a positive feeling. These findings are confirmed by many studies cited in the first chapter (Gilgen, 2004; Rossinget.al 2012).

From the results of the nine (09) question, it is noticed that twenty-seven (27) students representing (53%) “agree” and ten (10) participants said that they “strongly agree” on the fact that Duolingo increases their motivation to learn vocabulary items whereas eight (08) representing (16%) are neutral. While only four (04) students representing (4%) responded that they “strongly disagree”. (See figure 13). Motivation is considered as cognitive since it provokes a decision to act (Harmer, 1991).

The study also demonstrates that Twenty-four (24) participants representing (47%) “agree” and twelve (12) students representing (24%) they “strongly agree” on the idea that Duolingo offers a good opportunity to learn vocabulary that traditional methods such as books and dictionaries, cannot offer and seven (07) students representing (14%) answered that they “neutral” while, five (05) representing (10%) said they disagree and three (03) students representing (6%) responded that they “strongly disagree” (See figure 14). Duolingo breaks the monotony of the traditional method of learning as it uses gamification and provides funny and interesting tasks to get the attention of the users to learn.

The outcomes reached from the eleventh (11) question show that thirty-four (34) participants representing (67%) have answered that Duolingo helps them overcome their vocabulary learning obstacles, while seventeen (17) of them representing (33%) have said that it does not help (See table 08).

In fact, the participants who have answered by “yes” confess that Duolingo helps them through different activities. As already stated in the second chapter, Duolingo has different tasks, including vocabulary, listening, speaking and pronunciation tasks, which help learners to overcome their difficulties.

Moreover, the exercises are varied depending on the level of the learner. The findings also show that forty three (43) respondents representing (84%) have claimed that Duolingo helps them to improve other English language skills (See figure 16).

Duolingo allows practice in all skills, and is not limited to basic concepts and phrases, but provides an important repetition and reinforcement, especially for students who are not in a traditional learning environment. Repetition in this case means that a word is used in different contexts to ensure that it is memorized, for example, by using voice, pictures, matching, writing, fill in the blank and much more. If students see a word once, they might forget it quickly, but when they come across that word a number of times, they have a better chance to remember it.

As for the thirteen (13) question, the students are asked if they use Duolingo in the classroom, it appears that thirty (45) students representing (88%) said “no” and six (06) students representing (12%) answered by “yes” (See figure 17). The results indicate that the number of students who said ‘no’ is superior than those who replied by yes. It can be inferred that students are not allowed to use their mobile devices during classes. In the Algerian context, research concluded that obstacles,

such as lack of equipment, internet access, students' unfamiliarity with technological devices and large classes, are barriers to the use of ICT in EFL classrooms (Berbar, Ait Hamouda; 2018).

In the fourteenth question (14), they are asked if they would like their teachers to integrate Dulingo application in the teaching and learning process. The outcomes indicate that twenty-two (22) participants representing (51%) answered by "yes", while seventeen (17) participants representing (33%) answered by "not necessary" and eight students (08) answered by "no". (See table 11). Compared to the results of Borja (2018) study, it was concluded that educators can use Duolingo as a part of classroom practices as well as homework, as it motivates the students to work through communication and collaboration.

Conclusion

This chapter has discussed and interpreted the results obtained from the students 'questionnaire in order to answer the research questions, and confirm the hypothesis suggested in the general introduction. From the discussed results of the questionnaire, it appears that the majority of second year students at Mohamed Kheider University of Biskra, evaluate their vocabulary learning through Duolingo in a positive way, since it motivates them to learn it, and helps them overcome their vocabulary learning problems and other language skills difficulties. In fact, these findings answer the second research question and confirm the proposed hypothesis of the general introduction, which is "the use of Duolingo application to enhance students' vocabulary.

Recommendations

The famous language-learning application Duolingo has many benefits for both students and instructors. Students can learn a new language at their own speed with the help of Duolingo's engaging and user-friendly platform. The application provides a variety of interactive lessons, including vocabulary learning, writing, grammar, and listening comprehension exercises. Duolingo's gamified approach keeps students engaged and promotes consistent practice with its streak system and achievement badges. A personalized learning experience is also provided by Duolingo's adaptive learning technique, which adapts the lessons to the student's proficiency level.

Duolingo is a useful tool that teachers can use to enhance language learning in the classroom. The app is appropriate for both beginning and advanced language learners thanks to its extensive curriculum, which covers a variety of language-related topics. Duolingo allows teachers to assign specific courses or subjects to their students, evaluate their progress, and give them performance feedback. The app's progress tracking capabilities let teachers spot areas where their students might need more help, allowing for focused intervention. Additionally, due to Duolingo's adaptability, teachers can modify their lessons and prepare different learning styles in the classroom.

The accessibility of Duolingo is another noteworthy benefit. The software offers convenience in terms of time and place because it can be used on smartphones, tablets, and PCs. Duolingo is suitable for both in-class and independent study thanks to its accessibility, which lets students practice their language skills outside of the classroom. Additionally, Duolingo has a social component through its forums and language clubs, where users may interact with other language learners, ask questions, and take part in language challenges.

Given its affordability, Duolingo is accessible to students and teachers on a tight budget because its fundamental functions are provided without charge.

The program also offers a platform called Duolingo for Schools, which gives teachers access to extra tools including the ability to set up classes and track students' progress in real time. A Duolingo Plus subscription is offered for people looking for a more thorough experience and includes features like offline access, ad-free learning, and limitless hearts.

In conclusion, Duolingo is an application that both teachers and students should strongly consider using. Duolingo provides a successful and accessible language-learning experience with its user-friendly design, adaptive learning engine, and extensive curriculum. It helps students on pursue their goals to mastering a language and gives teachers useful resources to improve classroom instruction, assess learners' advancement, and customize learning. Duolingo can be a helpful tool for language learners of all ages, whether used independently or in conjunction with conventional language instruction.

General Conclusion

Educational applications are a very useful approach to supplement and reinforce vocabulary acquisition for language learners and allow them to expand their vocabulary. Students' ability to communicate effectively depends on their motivation, articulation, and vocabulary levels. The researcher decided to conduct the current study in an effort to shed light on the significance of the Duolingo application in boosting EFL learners' vocabulary at Biskra University because of the importance of technology in developing EFL students' vocabulary learning. As a result, this program may be a useful tool to help pupils learn vocabulary in an efficient manner. Reviewing the dissertation's first two chapters is noteworthy. The first was designed to give a general overview of vocabulary learning and its definitions according to some experts in addition to what is related to it such as its importance, types and the factors that cause difficulties to EFL learners.

The second chapter has provided an overview of vocabulary acquisition techniques and their various subtypes. However, learning through Mobile Assisted Language Learning (MALL) in general and learning through the Duolingo application in particular were the topics of the second chapter. It discussed this tool's definitions in detail as well as exercises, advantages, and disadvantages. In addition, the chapter demonstrated how Duolingo help students improve their vocabulary

Finally, the third chapter was dedicated to the fieldwork of the study which is a students' questionnaire was analyzed. Accordingly, the obtained results of this study successfully reached the aims, answered the research questions, and validated the research hypothesis. The study followed a descriptive method to tackle the topic and a quantitative approach is assumed to be the

best choice for achieving the study's expected aims and goals. Furthermore, it relied on using a semi-structured questionnaire as a data gathering tool to collect the needed data.

These were designed to a sample of fifty one second year students at the department of English at Biskra University in the academic year 2022-2023. The aim from using these instruments was to collect credible information from the participants. In addition, they aimed to gather data and explore the opinions and attitudes of students towards the significance of the Duolingo application in developing vocabulary.

The obtained results from the questionnaire showed that the participants provided positive views about the importance of vocabulary. They considered it as one of the most important aspects that should be developed. In addition, students' level of vocabulary has been revealed to be average, so they need to work on it in order to reach the required level. That is why, most of students are looking for any effective tool that may encourage them to learn independently. In view of that, the majority of students consider learning vocabulary through Duolingo as interesting and enjoyable, and they claim that it raises their motivation to learn vocabulary. It has also demonstrated that Duolingo offers the students a good opportunity to learn, it helps them overcome their vocabulary learning problems and it improves other language skills like listening, speaking and writing.

Moreover, the students have expressed their wish to see their teachers integrate Duolingo and application in the classroom setting as an additional pedagogical support to their learning. In other words, all the participants provided positive opinions about its usefulness, especially if is used appropriately; it will enhance the English language vocabulary. Furthermore, most of the participants agreed that the use of this technique may make learning more attractive and may motivate its users to learn more due to its motivational features. As a result, the obtained findings

through the data collection tool was positive; students' opinions were of great help in achieving the research aims and answering the research questions. Initially, the majority of students bestowed positive attitudes towards the Duolingo application which helped them in improving their vocabulary and ameliorating their pronunciation.

Hence, the hypothesis was confirmed, so we conclude that the integration of the Duolingo application is advantageous in developing students' vocabulary learning. To conclude, English language students should reinforce their vocabulary in order to use them in the target language. It is necessary to choose an effective strategy that may enable them to learn inside and outside the classroom effectively. In addition, they should benefit from their mobile devices and enhance their vocabulary learning through remembering vocabulary easily, especially with the Duolingo application that may help them to learn. In a short saying, the findings demonstrated that this application is significant in developing vocabulary through its multiple exercises.

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Appendix

Students' questionnaire

Dear students,

You are kindly invited to answer this questionnaire, which is an attempt to collect data for the accomplishment of a master dissertation. **It is about Enhancing EFL Students 'vocabulary through "Duolingo Application"**. The Case of Second year LMD students at Biskra University.

We would be so grateful if you could sincerely provide us with precise, clear, and complete responses by putting a Tick (✓) on the appropriate box and expressing your comments when necessary. Your Contribution will be of great help for the completion of the research work. We promise that all Information obtained is kept anonymous and confidential. Thank you in advance for your Contribution

Section One: Vocabulary learning

1- Do you consider vocabulary as an important aspect in learning English?

Yes

No

Please justify your answer?

.....

2- How do you evaluate your English vocabulary?

Poor Average Good

3- What kind of problems do you face when you encounter new vocabulary?

Pronunciation problems Spelling problems

Memorizing problems Meaning problems

4- When learning new vocabulary, which of the following strategies do you use?

a- Books and printed materials b. Mobile devices

Other.....

Section Two: Students' information about Duolingo

5- Do you use Duolingo to learn English?

Yes No

6- How often do you use it?

Everyday Several times a week Once a week Never

7- Which aspect of English you intend to improve when using Duolingo?

Listening Grammar Vocabulary Pronunciation

Section Three: Students' attitudes towards using Duolingo to enhance their vocabulary

8- How do you find learning vocabulary through Duolingo?

Enjoyable Interesting Boring

9- Do you think that Duolingo increases your motivation to learn vocabulary items?

Strongly agree Agree Neutral Disagree Strongly disagree

10- Do you think that Duolingo offers a good opportunity to learn vocabulary that Traditional methods cannot offer?

Strongly agree Agree Neutral Disagree Strongly disagree

11- Does Duolingo help you overcome your vocabulary learning problems (Pronunciation, Spelling...)?

Yes No

If yes, how does it help?

.....

12- Does Duolingo help you improve other English Language skills (reading, writing, Listening and speaking)?

Yes No

13- Do you use Duolingo in the classroom?

Yes No

14- Would you like your teachers integrate Duolingo application in the Teaching learning process?

Yes No Not necessary

Résumé

La présente étude vise à déterminer si la mise en œuvre de l'application Duolingo peut améliorer les résultats des étudiants en matière de vocabulaire anglais. Elle a porté sur les étudiants L2 LMD du département d'anglais de l'université Mohamed Kheider de Biskra. L'étude a adopté une méthode de recherche quantitative pour la collecte et l'analyse des données. Pour la collecte des données, un questionnaire est administré à cinquante et un (51) étudiants L2 LMD qui utilisent Duolingo, sélectionnés sur la base d'un échantillonnage de commodité au département d'anglais. En ce qui concerne l'analyse des données, le programme informatique Statistique Package for Social Sciences (SPSS) est utilisé pour analyser les données numériques obtenues à partir des questions fermées du questionnaire. Les résultats de l'étude ont démontré que les étudiants en L2 ont des attitudes positives à l'égard de l'utilisation de Duolingo pour l'apprentissage du vocabulaire. Cela signifie que l'hypothèse de cette étude a été acceptée et que l'application Duolingo peut être utilisée pour améliorer les résultats des étudiants dans l'apprentissage du vocabulaire. Le chercheur suggère aux professeurs d'anglais d'utiliser l'application Duolingo comme moyen d'enseignement du vocabulaire anglais parce qu'elle peut rendre les étudiants plus intéressés par l'activité d'enseignement et d'apprentissage.

Mots clés : Duolingo, MALL, EFL, Vocabulaire, deuxième année, Université de Biskra.