

وزارة التعليم العالي و البحث العلمي
Ministry of Higher Education and Scientific Research
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Mouloud MAMMERI University of Tizi Ouzou
Faculty of Letters and Languages
Department of English
Field: Letters and Foreign Languages
Branch: English Language
Speciality: Didactics of Foreign Languages

جامعة مولود معمري تيزي وزو
كلية الآداب و اللغات
قسم اللغة الانجليزية

**Dissertation Submitted in Partial Fulfillment of the Requirements
For the Degree of Master in English**

Title:

**EFL Students' Attitudes towards the Use of Duolingo Language
Application to Enhance their Vocabulary: the case of junior degree
in the Department of English at MMUTO**

Presented by :

Ms. TAHIR Akila

Ms. TAFAT Feriel

Supervised by:

Mr. CHETOUANE Madjid

Board of Examiners:

Chairwoman: Yassine Souryana, Professor, Mouloud Mammeri University of Tizi Ozou

Supervisor: Chetouane Madjid, MAA, Mouloud Mammeri University of Tizi Ozou

Examiner: Benaissa Amel, MCB, Mouloud Mammeri University of Tizi Ozou

Academic Year: 2020/2021

Dedications

I dedicate this work to:

My beloved parents Youcef and Yamina

My dear aunt Taous

My dear brothers Moula and Ramzi

To the memory of my beloved grandmother

To my dear cousin Fahima

To my best friend Amelia and my binomial Ferial

To all those who supported me to achieve this work

Akila TAHIR

I dedicate this work to

My father Samir and my mother Safia who encouraged me to accomplish this work.

To my sister Chahinez and my two brothers Hichem and Lotfi

To my best friends Kahina and Hayet and to my lovely binomial Akila

To all my friends

Ferial TAFAT

Acknowledgements

First and foremost, we would like to express our deep and sincere gratitude to our supervisor Mr. Madjid Chetouane for his insightful support, extensive guidance and the precious advice that he gave us to accomplish this work.

We are extremely grateful to all the members of the board of examiners who have kindly accepted to read and examine our modest dissertation.

Our thanks are extended to the teachers of the Department of English for the precious teachings they provided us along the past five years.

Finally, Special thanks to all the students who have participated in this study and to all those who have supported us directly or indirectly.

Abstract

This dissertation is concerned with EFL students' attitudes towards using Duolingo language application to enhance their vocabulary. It has dealt with L3 LMD students in the Department of English at Mouloud Mammeri University of Tizi Ouzou. It is intended to determine the type of attitudes the students hold towards Duolingo use, and the factors that have influenced them to accept or reject this tool to learn vocabulary. In order to achieve the stated objectives, Davis' Technology Acceptance Model (TAM, 1989) is applied. The study has adopted a mixed methods research combining both quantitative and qualitative methods for data collection and data analysis. For data collection, an online questionnaire is administered to forty-eight (48) L3 LMD students who use Duolingo selected based on convenience sampling, and a semi-structured interview conducted with three (03) of them 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, and Qualitative Content Analysis (QCA) is applied to interpret the findings reached from the open-ended questions of the interview and the questionnaire. The results of the study have demonstrated that L3 students have positive attitudes towards using Duolingo to learn vocabulary. Moreover, the outcomes have revealed that a set of factors, such as "easiness and usefulness of Duolingo", "anytime anywhere feature" and "students' willingness to improve their learning", have influenced the students to accept this application. In addition, factors such as "difficulty of access to internet" and "feeling of boredom", have pushed the small number of students to reject Duolingo after using it.

Key words: Attitudes, Duolingo, Technology Acceptance Model (TAM), Vocabulary learning.

Liste of Abbreviations

- **EFL** : English as a Foreign Language
- **LMD**: Licence, Master, Doctorat
- **MMUTO**: Mouloud Mammeri University of Tizi Ouzou
- **ICT's**: Information and Communication Technologies
- **TAM**: Technology Acceptance Model
- **ET**: Educational Technology
- **M-learning**: Mobile Learning
- **MALL**: Mobile-Assisted Language Learning
- **CALL**: Computer-Assisted Language Learning
- **Apps**: Application software
- **SPSS**: Statistical Package for Social Sciences
- **QCA**: Qualitative Content Analysis
- **PDA**: personal digital assistance
- **WAP**: Wireless Application Protocol
- **TRA**: Theory of Reasoned Action
- **PU**: Perceived Usefulness
- **PEOU**: Perceived Ease-of-Use
- **ATU**: Attitude Toward Use
- **BI**: Behavioral Intention

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- **Statement of the Problem**

The impact of Information and Communication Technologies (ICT) on education has been proven in various studies as it is able to make the process of teaching and learning more interesting, motivating, and meaningful (Chapelle, 2001). Being more and more integrated in education, technology has led to the emergence of Mobile Assisted-Language Learning (MALL) as a type of E-learning and as a new generation of Computer-Assisted Language Learning (CALL) in teaching and learning foreign languages, mainly English as a foreign language (EFL). MALL is based on the use of mobile devices such as smartphones, laptops and other portable and wireless gadgets in the teaching and learning process.

The broad usage of mobile devices has drawn a lot of mobile applications in learning English as a foreign language. One of the most widely used applications is Duolingo. It is a gamified language learning application (software) for personal computers, smartphones and tablets with Android and iOS operating systems. Learning language through this application breaks the traditional way of learning, such as using dictionaries and books, and doesn't limit it to the classroom alone. It offers learners an easy access to learn and practice their language skills, mainly vocabulary, which is very important for language learning since it enables them express their ideas clearly.

Many studies around the world have proved that Duolingo is an effective method to learn languages. One of them was conducted by Addal Muddin at Ar-Raniry State Islamic University Banda Aceh in Indonesia, in 2018. Entitled "*The Use of Duolingo to improve Students' Vocabulary*", it is an experimental study conducted with second year students in the denominational school in Indonesia which aims to determine the effect of using Duolingo in teaching English as a foreign language to improve students' vocabulary mastery and to know the students' perception toward the implementation of Duolingo in teaching EFL. The results

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showed that there was a significant improvement in Indonesian students' scores after using Duolingo, and they showed a positive perception toward its implementation in the teaching process. Another experimental study was conducted by Borja in 2018 at Ambato Technical University in Ecuador, entitled "*Duolingo Language-Learning Platform and the English Vocabulary Acquisition*". The objective was to measure how the Duolingo language learning platform enhances English vocabulary of third year students at Unidad Educativa Primero de Abril secondary school in Latacunga. The results determined that Duolingo is a language learning and translation platform where students progress through several levels. It also revealed that Duolingo is an easy-to-use environment that improves EFL vocabulary acquisition.

At the level of the Algerian higher education, few studies have been conducted on the use of Duolingo to learn vocabulary. One of them was conducted at Mohamed Lamine Debaghine Sétif 2 University, entitled "*Investigating the Effectiveness of the Duolingo Platform in Developing Learners' Vocabulary and Grammar Acquisition*". It aimed to evaluate the effectiveness of the Duolingo online free learning platform as a means to develop adult beginner learners of English vocabulary and grammar acquisition at the Intensive Language Teaching Center in the same University. The findings revealed that adults using Duolingo showed better results than those using the teacher-directed methods in vocabulary and grammar acquisition. Hence, this study did not focused on investigating the attitudes of students towards using Duolingo to enhance their vocabulary. This study is then original as it is the first in the Department of English at Mouloud Mammeri University of Tizi Ouzou (MMUTO) to investigate students' attitudes towards Duolingo use.

- **Aims and Significance of the Study**

The present dissertation aims at investigating L3 LMD EFL students' attitudes towards the use of Duolingo as a language application to enrich their vocabulary in the Department of English at Mouloud Mammeri University of Tizi-Ouzou (MMUTO). To be more specific, the aim of this work is to get a full understanding of students' views on the use of Duolingo language application, and to determine the factors which influence them to accept or reject the application as a tool to improve their vocabulary repertoire.

The significance of this research lies on the fact that it may change administrators' and teachers' vision about Mobile-learning applications and may lead to a serious thinking about integrating them in the teaching-learning process.

- **Research Questions and Hypotheses**

In order to investigate the attitudes of students towards the use of Duolingo as a tool for learning English vocabulary, we formulated the following research questions:

Q1: Do L3 EFL students in the Department of English at MMUTO have positive or negative attitudes towards using Duolingo?

Q2: What are the factors that affect the students' acceptance or reluctance of the use Duolingo as a tool to improve their English Vocabulary?

In order to answer the above questions, the following hypotheses are advanced:

H1: L3 EFL Students have positive attitudes towards using Duolingo to learn Vocabulary.

H2: The easiness and usefulness of Duolingo affect students' acceptance of this application.

- **Research Techniques and Methodology**

To conduct our research, we rely on a mixed method research, that is to say, the combination of both quantitative and qualitative methods for data collection and data analysis. The data are gathered using two main tools: a questionnaire and an interview. Questionnaires are addressed to third year Bachelor students of the department of English at MMUTO, some of them are interviewed as well. Concerning the quantitative part, we adopt the computer program statistical package for social sciences (SPSS) to analyze the data gathered from the questionnaires. For the qualitative part, the data gathered from the interview are interpreted by using Qualitative Content Analysis (QCA).

In order to investigate the students' attitudes towards the use of Duolingo language application in learning vocabulary, we rely on Davis' *Technology Acceptance Model* (TAM, 1989) as a theory. It models how users come to accept or reject a piece of technology. In this study, we analyze the students' acceptance or rejection of Duolingo as a tool to enrich their vocabulary through "Perceived Usefulness" and "Perceived Ease of Use", which are two concepts that affect an individual's attitudes towards a piece of technology.

- **Structure of the Dissertation**

The general structure of this dissertation follows the traditional-simple model. It is composed of a General Introduction, four chapters, and a General Conclusion.

The General Introduction presents the statement of the problem, aims and significance of the study, research questions and hypotheses, research techniques and methodology and structure of the dissertation. The first chapter provides the theoretical background of the study. The second chapter is devoted to the research design which outlines the procedures of data collection and data analysis. The third chapter is the presentation of the findings which

General Introduction

presents the results. Then, the fourth chapter is dedicated to the discussion of findings, and it aims to discuss and to give answers to the research questions. The dissertation ends with a General Conclusion which includes an introductory paragraph restating the whole work and recommendations for further research.

Introduction

The present chapter reviews relevant literature on attitudes, vocabulary and Duolingo language application. It is divided into four parts. The first part provides some definitions of attitude and the importance of attitudes towards language learning. The second introduces definitions of vocabulary, its types, its importance in language learning and problems. The third part presents some background information on mobile learning, Mobile-Assisted Language Learning and mobile applications in language learning. After that, it introduces Duolingo, its purpose, its advantages and disadvantages. Finally, the last part covers the theoretical framework used to determine the attitudes and the factors that influence students to use Duolingo as a tool to enhance their Vocabulary.

1.1. Attitude

Attitude is considered central to the field of social Psychology. Allport (1954: 43) one of the founders of social psychology, claims that *"the concept of attitude is probably the most distinctive and indispensable concept in contemporary American social psychology"*. The word 'attitude' goes back to the Medieval Latin aptitude and the classical 'aptus' (Fleming, 1967), which means fitness or adeptness. In the past, it was used in painting, and particularly in sculpture to describe a bodily pose of an individual that presents him or her (Galton, 1884). But in social sciences, the meaning is more related to a state of mind instead of the body.

Allport (1935:810) defines attitudes as *"a mental and neural state of readiness, organized through experience, exerting a directive and dynamic influence upon the individual's response to all objects and situations with which it is related"*. In other words, attitudes are mental postures or a conscious way of reacting that is based on the individual experiences, and it leads him to exert certain behaviors or opinions for or against a particular object. Krech and

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Crutchfield (1948: 152) claim, *"An attitude can be defined as an enduring organization of motivational, emotional, perceptual, and cognitive processes with respect to some aspect of the individual's world"*. The two authors describe it as an enduring system of positive or negative evaluation, emotional feelings and pro or con action tendencies with respect to a social object. The objects of attitudes are anything that exists for an individual.

In subsequent decades, the attitude concept has lost much of its breadth and was largely reduced. Bem (1970: 14) states *"attitudes are likes and dislikes"*. Similarly, Eagly and Chaiken (1993: 1) define attitudes as *"a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor"*. Inherent in this definition is the idea that reporting an attitude involves the expression of an evaluative judgment about a stimulus object. In other words, reporting an attitude involves making a decision concerning liking or disliking a particular object.

Attitudes are also defined in terms of three components, namely affective, cognitive and behavioral (Bucu et al., 1993; Maio and Haddock, 2009). Firstly, the affective component refers to the emotional response towards an attitude object. Secondly, the cognitive component consists of thoughts and beliefs that a person holds about an object. Thirdly, the behavioral component refers to an individual's consisting actions or behavioral intentions towards a particular person or object. The three components together make a person's personality.

In simple words, Attitudes refer to our evaluations of people, groups and other types of objects in our social world. Attitudes are an important area of study because they impact both the way we perceive the world and how we behave. Finally, they have received a huge importance in the field of education, mainly in language learning.

1.1.2. Attitudes Towards Language Learning

Foreign language learning is a complex process which is influenced by several factors. The attitudes of students towards learning are one of the major factors in this process. Therefore, Reid (2003: 43) declares that “*attitudes are important to us because they cannot be neatly separated from study because achievement in a target language relies not only on intellectual capacity, but also on the learner’s attitudes towards language learning*”. In other words, learning a language should be viewed primarily as a social and psychological phenomenon rather than as a purely academic one.

Attitudes towards language learning play an important role in foreign language learning as it influences the learner’s success or failure, and is one of the key factors in motivating the learner to learn the language (Abidin et al., 2012). They also determine the means with which the learner can tackle the challenges in the target language (Ellis, 1994). In this case, there are positive and negative attitudes that learners can hold towards foreign language learning. On one hand, Chamber (1999) asserts that learning occurs more easily, when the learner has a positive attitude towards the language and learning. On the other hand, Ellis (op.cit) argues that when students show negative attitudes towards the language, this can hamper language learning because those attitudes emerge when the learners are not motivated, not interested or have difficulties within the learning environment.

1.2. Vocabulary

1.2.1. Definition of vocabulary

Vocabulary is considered as the starting point to learn any language as it helps us expressing and performing our thoughts and ideas. Vocabulary is defined in several ways by different scholars. Hatch and Brown (1995:1) argue that “*vocabulary refers to a list of words*

that individual speakers of a language might use". Similarly, Vocabulary is defined by Alqahtani (2015) as the total number of words in a language and a list of words with their meaning. Also vocabulary is explained by Neuman and Dwyer (2009: 385) as "*words we must know to communicate effectively: words in speaking (expressive vocabulary) and words in listening (receptive vocabulary)*". This means that vocabulary enhances the communicative skill. In simple terms, vocabulary is a list of words within a person's language repertoire.

1.2.2. Types of vocabulary

According to the definition presented by Neuman and Dwyer (2009), vocabulary is split into two types: receptive and productive (expressive) vocabulary.

➤ Receptive Vocabulary

Receptive vocabulary refers to all the words that students can understand and recognise upon hearing or reading them, but cannot produce or use them while speaking and writing.

➤ Productive Vocabulary

Productive or expressive vocabulary is considered as an active vocabulary. Here the students have the ability to express and produce words in speaking and writing.

To explain the two kinds of vocabulary, Nation (2001: 2) asserts:

Essentially, receptive vocabulary use involves perceiving the form of a word while listening or reading and retrieving its meaning. Productive vocabulary use involves wanting to express a meaning through speaking or writing and retrieving and producing the appropriate spoken or written word form.

In other words, receptive vocabulary means the comprehension of words when hearing or seeing them, while productive vocabulary is the use of words to express ideas in speech or in writing.

1.2.3. The Importance of Vocabulary

Vocabulary is considered as a core element to learn foreign languages. Wallace (1982:9) claims that *“there is a sense in which learning a foreign language is basically a matter of learning vocabulary in target language”*. EFL students need to acquire and learn vocabulary to be able to understand the target language. In fact, vocabulary has a big importance in the process of learning a language. EFL students need to memorize a large amount of vocabulary to be able to communicate successfully and appropriately, because a poor repertoire leads to a poor communication.

The linguist Wilkins (1972:111) states that *“without grammar very little can be conveyed, without vocabulary nothing can be conveyed”*; that is to say grammar is not as important as vocabulary. EFL students are able to convey meaning even if they make grammatical mistakes. According to Krashen (1989: 440) *“when students travel, they do not carry grammar books, they carry dictionaries”*.

1.2.4. Problems in learning vocabulary

The process of learning vocabulary is a complex task although it is seen as a simple procedure. According to Harmer (1991), EFL students face different obstacles and this is due to several problems. He has pointed out four (04) main problems; pronunciation, spelling, memorizing and meaning problems.

➤ Pronunciation problem

Pronunciation is one of the obstacles that EFL students face when learning foreign languages. A good pronunciation leads to a good communication as it is easier for the hearer

to understand your message. Students face those problems because of the existence of silent letters and a small mistake in pronunciation can change the whole meaning of the word.

➤ **Spelling problems**

Spelling is another problem that EFL learners deal with when learning foreign languages. It is considered as an essential element in learning a language as it enhances reading and writing skills and a simple mistake in writing a given word may change its meaning.

➤ **Memorizing problem**

Remembering all the learned vocabulary is the dream of each student. Memorizing the words and do not forget them after a while is a problem that EFL students find when learning. For the great majority of learners, learning new words is not a problem, but remembering them tomorrow is considered as a challenge for them.

➤ **Meaning problem**

Oxford (1990:8) believes that vocabulary is “*by far the most sizeable and unmanageable component in learning of any language, whether a foreign or one’s mother tongue, because of tens of thousands of different meanings*”. In other words, many English words have different meanings and the majority of students face this problem as they think that one word has a single meaning which is a wrong belief.

1.3. The Use of Mobile Apps in Language Learning

The fast growth of technological devices represents a revolutionary approach to education. It is possible only through technology that distances are no more barriers and education can be brought to the student’s doorstep. 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 words, it is the use of recent discoveries of science and technology in order to facilitate the teaching-learning process.

1.3.1. M-learning

Mobile technology is one of these scientific discoveries that have a significant role to play in educational development. Tyler (2002) defines Mobile technology as *“a device such as PDA or smart phone that can store, access, create, allows modifying, organizing or otherwise manipulating data in various forms from a location without being required to be lathered to any particular spot”*. In other words, it includes personal digital assistance (PDA) or digital cell phones that can be very helpful and useful for us in different ways thanks to the mobility aspect.

The fast growth of these mobile technologies has led to the emergence of ‘Mobile learning’ as a new wave of ‘e-learning’. Kukulska-Hulme and Taxler (2005: 1) defines 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”*. The author in this definition insists on the term “mobility” which is the ability to move freely and easily from one place to another.

M-learning is also defined in terms of mobility of technology, learning and 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 can enable learners to learn anywhere, anytime (Ibid). Secondly, mobile learning enhances the mobility and dynamism of the learning processes. In fact, the mobile allows learners to experience personal and unique

learning and also 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.

1.3.2. Mobile-Assisted Language Learning

The rapidly growing literature on the area of mobile learning generates a new approach related to the field of language learning, including learning English as a foreign language. This new approach is called Mobile-Assisted Language Learning (MALL). MALL is described as an approach to language learning that is enhanced or assisted through the use of handheld devices. Miangah and Nezarat (2012: 313) state that “*MALL deals with the use of mobile technology in language learning. Students don't 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 words, it is the use of mobile devices in language learning and it gives students the opportunity to acquire the language in the classroom and in non-classroom environment.

MALL is derived from M-Learning and Computer-Assisted Language Learning (CALL). 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 describes the use computer

technology in language learning. Thus, MALL is a branch 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 cited in Çakir, 2016).

MALL can be viewed as an ideal solution to language barriers in terms of place and time (Miangah and Nezarat, 2012). The development of mobile technologies has led to the emergence of Mobile Applications (Apps) as a tool to support MALL, and to help students in their language learning.

1.3.3. Mobile Apps for 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.”* Indeed, mobile apps are a software application that run on smartphones, tablets and other mobile devices, and provide the users with multiple functions. A mobile app can be downloaded from app store, such as Google Play for Android and Apple's App Store for iOS. In addition, some of the available applications are free to use, while other are paid.

In English language instruction, mobile apps are one of the essential and convenient tools of delivering an easy way for EFL students to acquire language online as well as offline. Furthermore, they aim at fitting educational objectives, improving the learning quality, and at

facilitating the learning process through careful selection of tools like 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. From the cited studies, it is clear that mobile applications are beneficial for learners, in the sense that they raise performance, motivation and create positive attitudes towards language learning.

Language learning apps are getting developed and are widely owned by a great majority of learners in many different fields of education, especially 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. In fact, there are a lot of language learning applications that can be accessed freely as long as there is an internet connection. Among the available apps are Duolingo, Memrise, Babel, Busu, LingQ, and many others. In this dissertation, the focus is on Duolingo.

1.3.4. Duolingo

Duolingo is a gamified language learning application accessible for both Android and iOS systems, and is available as a website. It is 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. According to Duolingo website, it is developed as a game with phases and challenges. Each phase presents some challenges to accumulate scores and complete many tasks. Furthermore, it is considered as a multilingual application which allows its users to

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learn several languages, such as French, Greek, Arabic, Dutch and English. Although there are a lot of languages presented to be learnt, English takes the first position in the number of the learners (Duolingo, 2021).

The application is designed so that users can learn and have fun at the same time through a gamified learning experience. The concept of gamification refers to the use of game-based elements such as mechanics, aesthetics, and game thinking in non-game contexts aimed at engaging people, motivating action, enhancing learning and solving problem (Kapp, 2012). 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.

When using Duolingo for the first time, an exam is provided to know the level of the learners since those with previous knowledge of the language are not obliged to start all over with basics of the language. Moreover, it is accessible to all ages and is for all users, whether beginners, intermediate or advanced. In Duolingo, each lesson is a phase and once a lesson is completed, another is unlocked as in a video game. This application is easy to access, provides a lot of languages and helps those who want to learn a foreign language. Moreover, it has a lot of characteristics that make learning any language as an easy task, such as giving lists of words for every day, repetition, discussion with other users, reinforcement through sending notifications as a reminder and translation. Accordingly, Duolingo as a game-based application, is easy to use with levels, repetition, following grammar translation that can offer supplementary activities and courses (Munday, 2016).

1.3.4.1. The purpose of Duolingo

The purpose of Duolingo lies in letting users to understand and learn a foreign language for free with Internet access. This application can be considered as a medium for students to improve and master English vocabulary. Duolingo aims at introducing real-life context and situations to the users where they can use English. In this case, we can say that the main purpose of Duolingo is to let students learn a language in a funny way without getting bored. This application aims to raise confidence among the learners and motivates them as it makes the learning process more enjoyable by using games as a means or technique for learning English.

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. From this, it can be deduced that Duolingo aims at developing all language aspects and skills, including vocabulary, writing, speaking, listening, pronunciation and translation.

1.3.4.2. Advantages and Disadvantages of Duolingo

- **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 has been released to use a compound of activities; listening,

transcribing, speaking, and translating in a simple interface as 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 which allows the learners to learn wherever they have internet connection and whenever they like it.

- **Disadvantages**

White and Siracusa (2013: 2) argue “*Duolingo would not be good for learning an entirely new language of which one has no knowledge*”. They also add that using Doulingo “*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*”. It means that one must have some previous knowledge about the language that he/she wants to learn. Another negative point is that Duolingo does not give explanations concerning learning grammar. In fact, learners should find a way to incorporate it along with the other lessons.

1.4. Technology Acceptance Model (TAM)

The technology acceptance model (TAM) is an information systems theory that models how users come to accept and use a computer-based technology. It is created by Fred Davis (1989) based on the principles of the theory of reasoned action (TRA) originally articulated by Fishbein and Ajzen (1975) in psychology research. TAM is developed specifically to predict and explain technology usage behavior and to identify the factors which lead the users to accept or reject a piece of technology (Davis et al., 1989; Davis, 1989). Technology acceptance is defined as “*an individual’s psychological state with regard to his or her voluntary or intended use of a particular technology*” (Hendrick and Brown,

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1984). This model suggests that when users are presented with a software package, a number of factors or variables influence their decision about how and when they will use it (Masrom, Hussein; 2008). In fact, the two main factors are Perceived Usefulness (PU) and Perceived Ease-of Use (PEOU) of the technology.

The first factor Perceived Usefulness is '*the degree to which a person believes that using a particular system would enhance his or her job performance*' (Davis, 1989: 320). It means whether or not someone perceives that a piece of technology can be useful for what they want to do. The second factor Perceived Ease-of Use is "*the degree to which a person believes that using a particular system would be free from effort*"(Davis, 1989:320). In other words, if the technology is easy to use, then there is no barrier to use it, and if it is not easy to use and the interface is complicated, no one has a positive attitude towards it and it is not accepted. Perceived usefulness is also hypothesized to be influenced by Perceived ease of use as "*the easier a technology is to use the more useful it can be*" (Davis and Venkatesh, 2000:187). Moreover, the two variables are influenced by external variable or factors, such as social, political and cultural factors.

Davis (1989) argues that perceived usefulness and perceived ease of use predict the attitude toward using (ATU) the technology, which in turn determines the user's behavioral intention (BI) to use the technology. Behavioral intention to use (BI) determines whether users will actually use the system and is determined directly by the person's attitude towards using the system and Perceived Usefulness. Attitude is considered as a central feature of TAM, because it guides future behavior or it creates intention which eventually leads to a certain behavior. In TAM, attitude towards using a system refers to the evaluative effect of positive or negative feelings of individuals in performing a certain behavior (Shroff et al., 2011). According to Masrom and Hussein (2008), when people perceive any technology as easy to use and useful they would hold positive attitudes toward this technology. These

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positive attitudes will result in having a positive behavioral intention and accepting using this technology.

Technology Acceptance Model TAM is used across a wide variety of domains. In the field of information systems, it is applied in numerous studies including word processors (Davis et al., 1989) and websites (Koufaris, 2002). In the field of education, it is applied to explain teachers' adaption of digital technologies in education (Scherer et al., 2018).

Conclusion

To sum up, this chapter is a review of relevant literature concerning our research topic which is students' attitudes towards the use of Duolingo language application to enhance their vocabulary. It shows that vocabulary is an important element in learning EFL. Nowadays, learners have access to several mobile devices, and have the opportunity to download different mobile applications such as "Duolingo" in order to improve their vocabulary knowledge. It also introduces Technology Acceptance Model (TAM) which can determine the students' attitudes, and the factors that influence their acceptance or rejection of Duolingo

Introduction

This chapter is methodological. It describes the procedures of data collection and data analysis adopted to answer the questions of our research topic, entitled “students’ attitudes towards using Duolingo language application to enhance their vocabulary” in the English Department at MMUTO. Firstly, it includes the research method, context and participants of the study. Secondly, it depicts the procedures of data collection which are a questionnaire administered to forty eight (48) junior degree students (L3) and a semi-structured interview with three of them. Finally, it ends with the procedures of data analysis which consists of quantitative and qualitative analysis.

2.1. Research Method

In order to conduct our investigation, we have opted for a mixed methods research. Tashakkori and Creswell (2007: 4) define mixed methods research as a *“research in which the investigator collects and analyses data, integrates the findings and draws inferences using both qualitative and quantitative approaches or methods in a single study”*. Simply, it is a procedure for collecting and analyzing information by mixing both quantitative and qualitative methods in one study to understand the research problem. 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). The qualitative method is used to explain the open-ended items of the interview and the questionnaire, which must be interpreted through Qualitative Content Analysis (QCA). The mixed method is the best way to obtain as many pieces of information as possible, and to have a clear insight of our research topic.

2.2. Context and Participants of the Study

This present study is conducted in the Department of English at Mouloud Mammeri University of Tizi Ouzou during the academic year 2020/2021. The participants are the third year L3 students who study in the department and are selected on the basis of convenience sampling to take part in the study. Convenience sampling is a type of non-probability or non-random sampling where members of the target population that meet certain criteria, such as easy accessibility, availability at a given time or willingness to participate, are included for the purpose of the study (Dörnyei, 2007). It was not possible to use random sampling because not all the students know or use Duolingo. Therefore, this sample does not represent the whole population, since the sample contains only forty-eight (48) students who use the application.

2.3. Procedures of Data Collection

In order to investigate students' attitudes towards using Duolingo language application to enhance their vocabulary, two main tools are used. An online questionnaire is administered and sent via social media (Facebook and Messenger) to forty eight (48) third year students who use Duolingo, then a face-to-face interview is conducted with three (03) of them, precisely 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.

As already mentioned, the questionnaire was sent via social media to forty eight (48) junior degree students (L3) who use the Duolingo language application and all of them responded. The aim of the questionnaire was to obtain information about the attitudes of students towards the use of Duolingo language application to enhance their vocabulary. It is made up of twenty (20) 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 three (03) of them allow students to express their own opinion by justifying their choices. The questionnaire is divided into three (03) main sections: students’ information about Duolingo, vocabulary learning, and student’s attitudes towards the use of Duolingo to learn vocabulary.

- **Interview**

The interview is the second supportive instrument used in this current study to collect qualitative data. It is simply defined by Gillham (2000:01) as *“a conversation where one person –the interviewer –is seeking the response for a particular purpose from the other person –the interviewee”*. Our present interview took place during the academic year 2020/2021 on September, 29 in the Department of English at Mouloud Mammeri University of Tizi Ouzou. Its purpose was to investigate the factors that affect students’ acceptance of Duolingo as a tool to develop their vocabulary. This interview is semi-structured, it contains (7) items conducted precisely with (03) students. It was audio-recorded after getting the permission from the students.

2.4. Procedures of Data Analysis

This section presents the methods adopted to analyze the quantitative and qualitative information gathered from the questionnaire and the interview. The quantitative data gathered are analyzed using the Statistical Package for Social Sciences (SPSS), whereas the qualitative data are interpreted using Qualitative Content Analysis (QCA).

- **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 program which helps to analyze statistical data and organize them into tables and diagrams.

- **Qualitative Analysis**

After the analysis of numerical data, the Qualitative Content Analysis (QCA) was adopted to analyze the qualitative data gathered from the interview and the questionnaire. It is defined as *“any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings”* (Patton, 2002:453). Krippendorff (2004: 18) also argues that it is *“a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use... As a research technique, content analysis provides new insights, increases a researchers’ understanding of particular phenomena, or informs practical actions”*. To conduct content analysis, the researcher collect data from a set of texts, that can be oral, written or visual, such as public speeches, videos and interviews. In fact, it allows researchers to understand and to interpret qualitative information and divide them into categories and themes within the texts, in a subjective but scientific manner.

Conclusion

This chapter presented the research design adopted to carry out our study. First of all, it depicted the research method which is the mixed methods research, the context and the population of the study. Then, it presented the data collection tools which are a questionnaire and an interview. Moreover, it included the methods used to analyze the quantitative and qualitative data. The Rule of three is used to describe the numerical data collected from

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questionnaire, while Qualitative Content Analysis (QCA) is used to analyze the qualitative data of the interview and the questionnaire. These methods allow having a better understanding of the research problem.

Introduction

This chapter is empirical. It deals with the presentation of the findings obtained from the questionnaires administered to (48) third year students who use Duolingo language application. It also shows the results of the semi-structured interview conducted with three students in the department of English at Mouloud Mammeri University of Tizi Ouzou. For the sake of readability and visibility, the results are presented in percentages and displayed in tables, diagrams and pie charts. The chapter is split into two main parts. The first presents the results obtained from the questionnaire which are analyzed through the computer program called SPSS. The second part covers the findings of the semi-structured interview which are analyzed using Qualitative Content Analysis (QCA).

3.1. Presentation of the results of the questionnaire

This part covers the results obtained through the questionnaires and are analyzed using the Statistical Package of Social Sciences (SPSS), which is a computer program for quantitative data.

3.1.1. Section One: Students' information about Duolingo

Q1: Do you have a mobile device?

The results indicate that all the participants have a mobile device

- **Q2: What kind of mobile device do you have?**

Type of Mobile Device	Answers	Percentages%
Portable Computer (PC)	2	4.2%
Smartphone	43	89.6%
Tablet	3	6.3%
Total	48	100%

Table (01): Students' Type of Mobile Device

Presentation of the Findings

Table (01) shows that the majority of the participants, forty-three (43) representing (89.6%), have a Smartphone. While only three (03) of them representing (6.3%) have a tablet and two (02) which is (4.2%) have a portable computer (PC). But no one of them claimed to have a basic phone.

- **Q3: Do you have Internet access in your mobile device?**

	Answers	Percentages%
Yes	47	98%
No	1	2%

Table (02): Internet Access on Mobile Device

Table (02) illustrates that the quasi totality of the participants have internet access in their mobile device.

- **Q4: Do you download language learning applications in your device?**

	Answers	Percentages%
Yes	44	92%
No	4	8%

Table (03): Language Learning Applications Download

Table (03) shows that nearly all the participants representing (92%), download language learning applications in their mobile device, and while only (8%) of them do not do it.

- **Q5: Have you ever heard of Duolingo language app?**

The findings show that all the participants are familiar with Duolingo language application.

- **Q6: Do you use it to learn English?**

	Answers	Percentages%
Yes	43	90%
No	5	10%

Table (04): The Use of Duolingo to Learn English

Presentation of the Findings

Table (04) indicates that the majority of the participants representing (90%) do use Duolingo to learn English, while only (10%) of them do not use it.

- Q7: How often do you use it?**

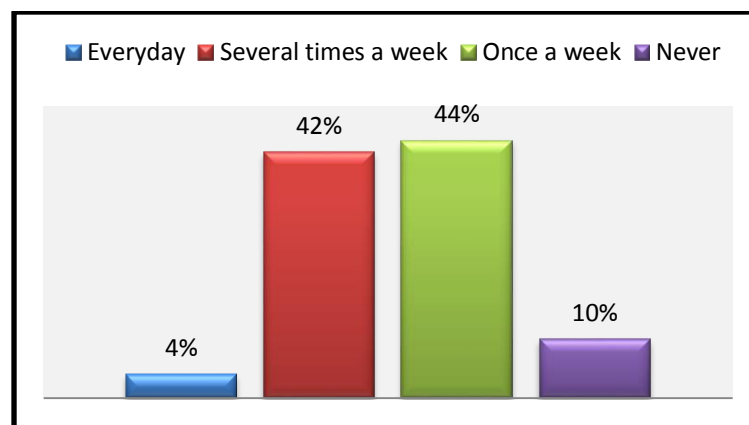


Diagram (01): Students' Frequency of Duolingo Use

As illustrated in diagram (01), twenty one (21) participants representing (44%), use Duolingo “*once a week*” and twenty (20) students representing (42%) use it “*several times a week*”. Five (05) representing (10%) claimed to have “*never*” used it, while only two which is (4%) use it “*everyday*”.

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

Language aspect	Answers	Percentages%
Listening	7	14.6%
Grammar	7	14.6%
Vocabulary	24	50.0%
Pronunciation	10	20.8%
Total	48	100%

Table (05): The Aspect of English the students wish to improve when using Duolingo.

As illustrated in table (05), half of the participants (50%) wish to improve vocabulary when using Duolingo. Ten (10) representing (20.8%) wish to improve pronunciation, seven

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(07) representing (14.6%) went for improving grammar and also seven (07) others representing (14.6%) intend to improve listening.

3.1.2. Section Two: Vocabulary Learning

- **Q9: 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**

When they were asked to justify their answers, the respondents said that vocabulary is the basis of the language and it helps improve other language skills including listening, speaking, reading and writing. Many of them insisted on the importance of the speaking skill by saying that vocabulary allows having a good mastery of the language and improving communicative competence. Some others claimed that it allows creating rich pieces of writing.

- **Q10: How do you evaluate your English vocabulary?**

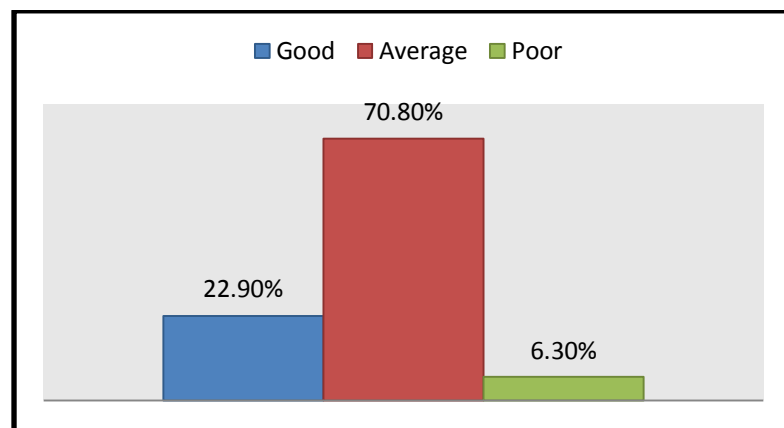


Diagram (02): Students' Evaluation of their English Vocabulary.

As shown in diagram (02), the majority of the students representing (70.80%) said that their English vocabulary is “average”. Eleven (11) students representing (22.90%) said that

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they have a “good” English vocabulary repertoire, while only three (03) representing (6.30%) claimed to have a “poor” English vocabulary repertoire.

- **Q11: What kind of problems do you face when you encounter new words?**

Vocabulary Problems	Answers	percentages%
Pronunciation problems	7	14.6%
Spelling Problems	8	16.7%
Memorizing Problems	23	47.9%
Meaning Problems	10	20.8%
Total	48	100%

Table (06): Vocabulary Learning Problems

Table (06) indicates that twenty-three (23) students representing (47.9%) face memorizing problems when encountering new words. Ten (10) representing (20.8%) said that they face meaning problems. Eight (08) representing (16.7%) claimed to have spelling problems, and seven (07), which is (14.6%) face pronunciation problems.

- **Q12: When learning new vocabulary, which of the following strategies do you use?**

Strategies to learn vocabulary	Answers	percentages%
Apps and social media	1	2.1%
Books and printed materials	10	20.8%
Mobile devices	37	77.1%
Total	48	100%

Table (07): Strategies to Learn Vocabulary

As it is seen in table (07), thirty-seven (37) students, representing (77.1%), use their mobile devices to learn vocabulary. Ten (10) representing (20.8%) claim that they use books and printed materials, while only one (01) representing 2.10% names other strategies that are “Apps and social media”.

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

- **Q13: Do you use Duolingo to learn vocabulary?**

	Answers	Percentages%
Yes	38	79.2%
No	10	20.8%

Table (08): Students' Use of Duolingo to Learn Vocabulary

As shown in table (08), the majority of the respondents (79.2%) use Duolingo to learn vocabulary, while ten (10) representing (20.8%) do not use it.

- **Q14: How do you find learning vocabulary through Duolingo?**

	Answers	Percentages%
Enjoyable	12	25%
Interesting	29	60.4%
Boring	7	14.6%
Total	48	100%

Table (09): Students' View about Learning Vocabulary through Duolingo.

As demonstrated in table (09), twenty-nine (29) students representing (60.40%) said that learning vocabulary through Dulingo is “*interesting*”. Twelve (12) representing (25%) answered that it is “*enjoyable*”, while seven (07) which is (14.60%) find it “*boring*”.

- **Q15: Duolingo increases your motivation to learn vocabulary items.**

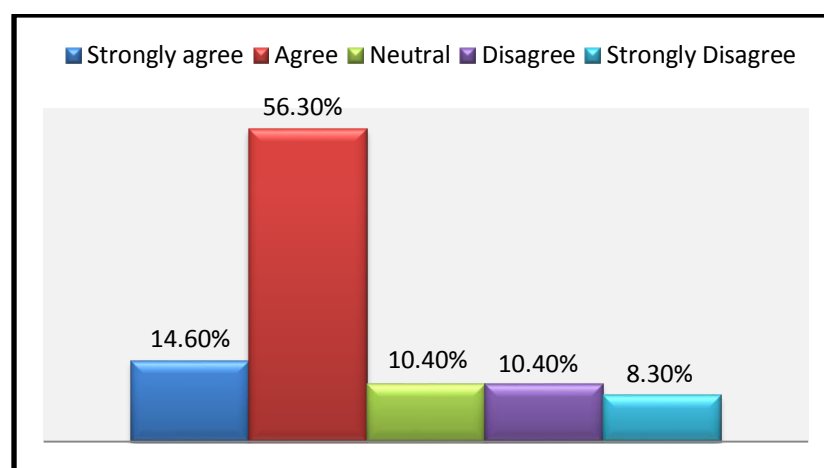


Diagram (03): Students' Motivation to Learn Vocabulary Items.

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According to diagram (03), twenty-seven (27) representing (56.30%) of the students “agree” on the fact that Duolingo increases their motivation to learn vocabulary items and seven (07) representing (14.60%) said that they “strongly agree”. Whereas five (05) representing (10.40%) are “neutral” and also five others, which is (10.40%), “disagree”. Then only four (04) representing (8.30%) responded that they “strongly disagree”.

- **Q16: Duolingo offers a good opportunity to learn vocabulary that traditional methods cannot offer.**

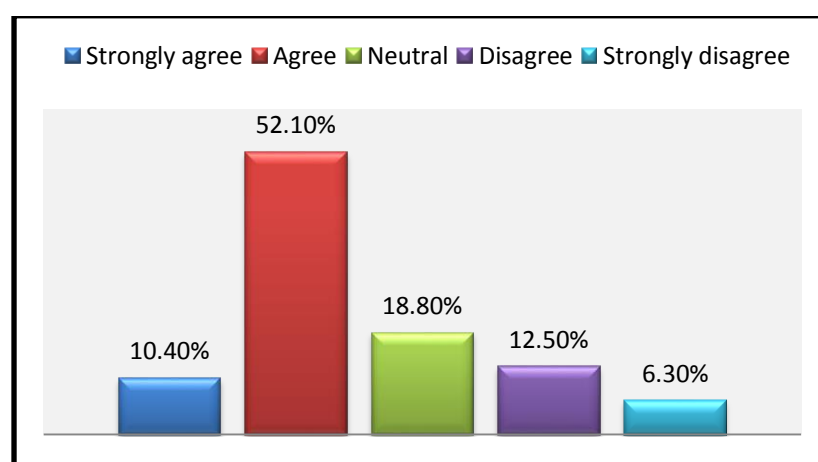


Diagram (04): Students' View about Duolingo Compared to Traditional Methods

As mentioned in diagram (04), twenty-five (25) students representing (52.10%) “agree” on the fact that Duolingo offers a good opportunity to learn vocabulary that traditional methods cannot offer. Nine (09) representing (18.80%) are “neutral” and six (06) representing (12.50%) answered that they “disagree”. Five (05) participants representing (10.40%) said that they “strongly agree” and three (03) students representing (6.30%) responded that they “strongly disagree”.

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- **Q17: Does Duolingo help you overcome your vocabulary learning problems (pronunciation, spelling, etc...)?**

	Answers	Percentages%
Yes	39	81%
No	9	19%

Table (10): Students' View about Duolingo as a Tool to Overcome Vocabulary Problems.

According to table (10), the majority of students representing (81%) answered that Duolingo helps them to overcome their vocabulary learning problems. Whereas, only nine (09) students representing (19%) said that it does not help.

❖ If yes, how does it help?

The students who said “yes” claim that Duolingo helps them to overcome their problems thanks to the multiple activities that it provides, including listening, speaking, and writing activities. Those who have pronunciation problems claimed that it helps them by listening to the right pronunciation of the words even of whole sentences. Then for those who have meaning problems, they said that it offers the meaning of the words by just clicking on them. For spelling problems, each word is spelled in the right way, and finally they argued that they are given a chance to memorize by listening and repeating at the same time either orally or written.

- **Q18: Does Duolingo help you improve other English language skills (reading, writing listening, speaking,)?**

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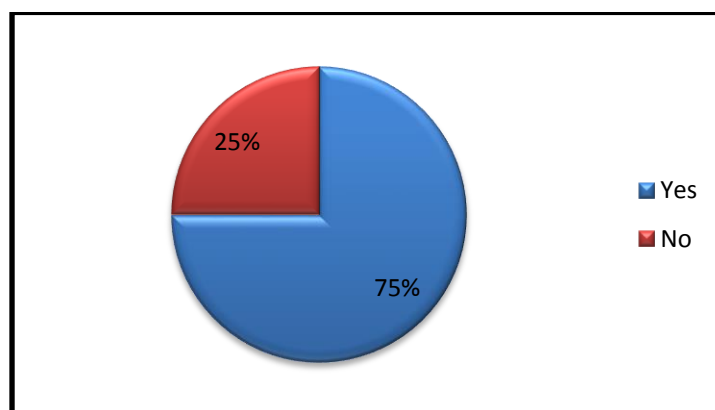


Diagram (05): Students' View about Duolingo as a Tool to Improve other English Language Skills

As indicated in diagram (05), the majority of the participants representing (75%) answered that Duolingo helps them to improve other English language skills. Whereas, a quarter of them, representing (25%), responded with a “No”.

- **Q19: Do you use Duolingo or other language apps in the classroom?**

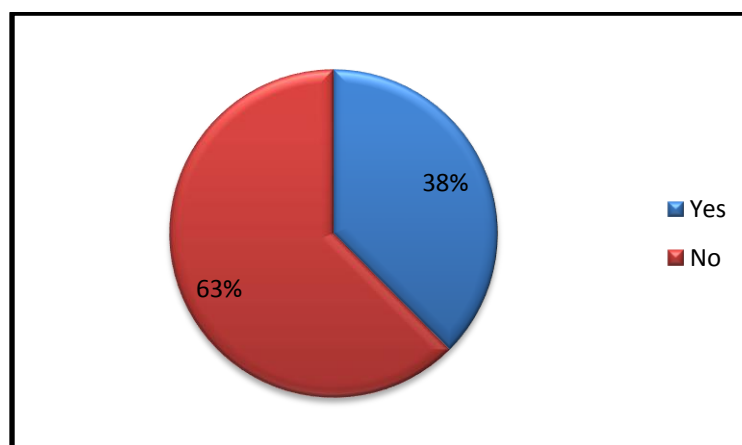


Diagram (06): Students' Use of Language Apps in the Classroom.

Diagram (06) demonstrates that thirty (30) students representing (63%), said that they do not use language applications in the classroom, whereas eighteen (18) students representing (37%) answered that they do.

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- **Q20: Would you like your teachers or administrators to integrate language learning apps in the teaching learning process?**

	Answers	Percentages%
Yes	32	66.7%
No	4	8.3%
Not Necessary	12	25%

Table (11): Students' View about Integrating Language Applications in the Teaching Learning Process.

As shown in table (11), thirty-two (32) students representing (67%) said that they would like their teachers or administrators to integrate apps in the teaching and learning processes. While, twelve (12) representing (25%), answered that the integration is “*not necessary*”, and only four (04) which is (8%) responded by “*no*”.

❖ Please justify your answer

For the students who said “yes”, some of them justified their answer by saying that integrating language learning applications is a good idea, and they believe that it will motivate them to learn more and will improve their vocabulary and other language skills. Others claimed that applications are a source of knowledge and a new type of learning that will break the traditional way of learning. Few others believe that such implementation will create an enjoyable and interesting atmosphere in the classroom. Whereas, those who answered by “no” and “not necessary”, some of them claimed that they do not need mobile language applications in the classroom, because there is a teacher. Few others declared that they had a diversified syllabus which would help them develop their skills.

3.2. Presentation of the results of the interview

This second part presents the results of the semi-structured interview conducted and audio-recorded with three (03) third year students in the Department of English at Mouloud Mammeri University of Tizi Ouzou. The students answered, relying on their experience with

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Duolingo. The results are analyzed using the Qualitative Content Analysis (QCA), which helps to gain insights about the attitudes of students, and the factors that may have influenced them to accept or reject Duolingo as a tool to enhance their vocabulary.

❖ Question One: Do you find using Duolingo to learn vocabulary easy or difficult?

The three (03) students who were interviewed said that learning Vocabulary with Duolingo makes the process much easier.

- Can you explain why?

The student (01) explains that it is easy firstly because there are several units, and each unit has activities devoted to only one component of language; that is noun, verb, adjectives and preposition. Secondly, she claims that whenever a new word is included in the activity, it is underlined, and then she just has to click on it and its explanation and function appear. The two other students explained that it is easy because it is simple to use and it offers explanation for each word.

❖ Question Two: Are the settings of Duolingo easy to understand?

The three students said that Duolingo setting are easy to understand. The first student went into a more detailed explanation by saying that even if there are so many levels in the application, still the settings are explained in a very simple and direct manner. She added that Duolingo offered her the opportunity learn two different languages at the same time. Then, when we asked the three students about the language used, the first student said that the sentences and the words get more complex when she went on through the levels. For example, the words of the beginner level are less complex than those of the intermediate or advanced level, while the two other students simply said that they found the language clear and simple.

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❖ Question Three: Does Duolingo enhance your vocabulary performance?

For this question, the first student claimed that the application does enhance her vocabulary performance, thanks to the writing, speaking and listening activities it provides. She explained that in a writing activity, it teaches her how to spell a word, and then in a speaking activity, it gives her a chance to pronounce the same word. The second student simply said that it did especially when she used it more seriously, whereas, the third interviewee claimed that it did not enhance her vocabulary performance.

❖ Question Four: Do you think that the easiness of this application makes it useful?

The first two students agreed that the easiness of this app makes it useful. They claimed that this is what attracted them to use it. For this point, the first student explained that all learners, whether beginner or advanced, like to be given something simple, because if something is complicated, then they will not think to use it. While the last student denied the fact that the easiness of Duolingo makes it useful since it did not enhance her performance.

❖ Question Five: According to you, what are the advantages that Duolingo offers to you?

For the advantages, they mentioned that it is free and ideal, which means that they can learn whenever and wherever they want. The second student added that it helped her learn grammar structures indirectly. Then we asked about the negative points. The first students said that the application sometimes bugs and sometimes even if she got the answer right, it tells her that it is false. The second student said the application is addicted. The third student declared that for her it had more disadvantages than advantages. She explained that since she

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did not always have internet access, it was difficult for her to use it. She added that it is sometimes boring when the same sentences are repeated several times in different activities.

❖ Question Six: In addition to the easiness and usefulness of Duolingo, what other factors that may have influenced you to use it?

For this question, the first interviewee answered that she first discovered Duolingo thanks to her brother. She said that he was using it and recommended it to her. She added also that her willingness to improve her English pushed her to use it. Then the second student declared that her friends influenced her, because they were all using it, and her willingness to learn other languages. The third student stated that she discovered the application herself. At the beginning, she started using it but later she stopped as she encountered those problems.

❖ Question Seven: Do you have the intention to continue using Duolingo in learning English?

For the last question, the two first interviewees affirmed that they would continue to use Duolingo to learn not only English, but also other languages, such as Italian and Spanish. Whereas the third participant said that she stopped using it, and added that there are other apps that are better for use.

Conclusion

This chapter has presented the results obtained from the questionnaire answered by forty-eight (48) third year students who use Duolingo, and from the semi-structured interview conducted face to face with three (03) of them in the department of English at Mouloud Mammeri University of Tizi Ouzou. From The results, we can possibly infer that the majority of the students had positive attitudes towards Duolingo language application. These findings

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will be discussed in details in the following chapter by providing interpretation and explanation.

Introduction

The present chapter intends to discuss the results obtained from the questionnaire administered to forty-eight (48) L3 students and the interview to three (03) of them. The results are discussed in relation to the review of literature and the theory of Technology Acceptance Model (TAM) as stated in the first chapter. This analysis aims at answering the research questions and at confirming or disconfirming the advanced hypothesis of the General Introduction. In fact, this chapter is split into two (02) main parts. The first part deals with EFL students' attitudes towards the use of Duolingo to enhance their vocabulary and discusses the results gathered from the questionnaire. The second part aims at identifying the factors which influence students' acceptance or reluctance of Duolingo as a tool to improve their vocabulary. Thus, it discusses the results obtained from the interview.

4.1. Students' Attitudes towards Using Duolingo Application

4.1.1. Students' Use of Duolingo Application

The results have revealed that all the participants involved in the study have a mobile device. It is apparent that a significant number of students, which is forty-three (43) representing (89.6%), have a smartphone (see table 01). Indeed, university students are identified as one of the largest and important target markets and the most active users of smartphones (Al-Barashdi et al. 2015). However, none of the students has mentioned to have a basic phone, because smartphones have established overwhelming superiority over standard cellular phones. For instance, smartphone owners have the possibility of installing various apps (applications) into their devices from the app markets, such as Android (Kim et al., 2014). Concerning the third question, nearly all the students (98%) have internet access in their mobile device (see table 02). According to West (2012), the ability of students to have access to the Internet using their smart phones, tablets or laptops creates great learning

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opportunities for them in different respects since it changed the concepts of place and time for education by moving education outside the school.

As far as the fourth (04) question is concerned, it is evident that the quasi totality of participants (92%) download language learning applications in their mobile devices (see table 03). This is in accordance with El-Hussein and Cronje (2011) who argue that language applications are developed and widely owned by a great number of learners in many educational fields, especially English as a foreign language. In fact there are many popular mobile language learning applications to download in PlayStore, one of them is Duolingo. The outcomes clearly show that all the participants are familiar with Duolingo language application and forty-three (43) among them representing (90%) use it to learn English (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 seventh (07) question, it is deduced that twenty-one (21) participants representing (44%) use Duolingo to learn English “*once a week*” and twenty (20) representing (42%) use it “*several times a week*”, whereas, five (05) respondents, which is (10%), “*never*” use it and only two (02) representing (4%) use it “*everyday*”(see diagram 01). 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 (50%) 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 ten (10) students representing (20.8%) responded by “*pronunciation*”, seven (07) representing

(14.6%) said “*listening*” and the same percentage replied by “*grammar*” (see table 05). From the results, it can be deduced that Duolingo as a MALL application favors important language aspects, including vocabulary, grammar, pronunciation and listening.

4.1.2. Students’ View about Vocabulary Learning

Vocabulary is an important aspect to be considered when learning foreign languages. This idea is confirmed by all the participants when they are asked about the importance of vocabulary learning in the ninth (09) question. Then when asked to justify their answer, they claimed that vocabulary is the basis for improving other language skills (speaking, writing, listening, and reading) and improve their communicative competence. This is in accordance with Nation (2011 cited in Alqahtani, 2015) who claims that learning vocabulary has a vital role in all language skills (i.e. listening, reading, speaking, and writing). It also goes hand in hand with Schmitt (2000: 55) who notes that “*lexical knowledge is central to communicative competence and to the acquisition of a second language*”, meaning that vocabulary is fundamental in communication as it helps learners to speak, express their ideas and understand others. Among the participants, there are those who claimed that vocabulary is important, which is supported by Wilkins (1972: 111) who states that ‘*without grammar very little can be conveyed, without vocabulary nothing can be conveyed*’, and by Krashen (1987: 440) who argues that “*when students travel, they do not carry grammar books, they carry dictionaries*” (see chapter one).

The findings of the study have revealed that thirty-four students representing (70.80%) have an “*average*” English vocabulary repertoire. Eleven (11) representing (22.90%) claim to have a “*good*” vocabulary, whereas only three (03), which is (6.30%), have a “*poor*” English vocabulary repertoire (see diagram 02).

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As for the eleventh (11) question, it is apparent that nearly half of the participants (47.9%) face memorizing problems, while ten (10) participants, which is (20.8%), encounter meaning problems. Spelling problems are faced by eight (08) students representing (16.7%) and pronunciation problems by only seven (07) representing (14.6%) (see table 06). 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-seven (37) participants representing (77.1%) 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 (20.8%) claim that they use “*books and printed materials*”. The analysis shows that one (01) student has mentioned another strategy to learn vocabulary which is “*apps and social media*” which can be considered as a part of mobile devices (see table 07). 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.

4.1.3. Students’ attitudes towards using Duolingo to enhance their vocabulary

The findings of this present research suggest that thirty-eight (38) participants representing (79.2%) use Duolingo language application to learn vocabulary, while (20.8%) do not use it to learn vocabulary (see table 08). It means that they use it for other purposes

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since Duolingo offers the opportunity to improve different language skills thanks to the multiple activities it provides.

The “*affective component*” of attitudes refers to an individual’s negative or positive emotional response towards a particular object. From the outcomes of the fourteenth (14) question, it is appears that twenty-nine (29) of the participants representing (60.40%) find learning vocabulary through Duolingo “*interesting*”, and twelve (12) representing (25%) find it “*enjoyable*”; whereas, seven (07) participants representing (14.60%) responded by “*boring*” (see table 09). That is, forty-one (41) participants representing (85.4%) have positive feelings towards Duolingo use. As mentioned in the first chapter, Duolingo as a gamified language learning software has the purpose of letting students learn any language in a funny way without being bored (see chapter one). 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). Moreover, it goes hand in hand with the results of Addal (2018) study where it is concluded that Duolingo eliminates the feeling boredom in learning and also encourages students to develop new ideas.

Furthermore, the “*cognitive component*” of attitudes refers to a person’s thoughts and beliefs about an object. From the results of the fifteenth (15) question, it is noticed that thirty-four (34) students representing (70.9%) “*agree*” and “*strongly agree*” on the fact that Duolingo increases their motivation to learn vocabulary items (see diagram 03). Motivation is considered as cognitive since it provokes a decision to act (Harmer, 1991). Moreover, it is an essential key to success, without it, a person would fail to make efforts to succeed. These results go hand in hand with many authors (Böhm and Constantine, 2016; Zou and Li, 2015) who state that mobile language application can develop students’ motivation and prompt their

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willingness to learn English (see chapter one). Torrente (2010) also claims that language learning apps as Duolingo use educational games, which are designed to teach specific subjects to increase learning motivation. Thus, the responses inferred from question (14) and (15) are positive, more precisely, the students evoke positive feelings towards the use of Duolingo.

The study also demonstrates that thirty (30) participants representing (62.5%) “*agree*” and “*strongly agree*” on the idea that Duolingo offers a good opportunity to learn vocabulary that traditional methods such as books and dictionaries, cannot offer (see diagram 04). 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 seventeenth (17) question show that thirty-nine (39) participants representing (81%) have answered that Duolingo helps them overcome their vocabulary learning obstacles, while only nine (09) of them representing (19%) have said that it does not help (see table 10). In fact, the participants who have answered by “*yes*” confess that Duolingo helps them through different activities. As already stated in the first 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 thirty-six (36) respondents representing (75%) have claimed that Duolingo helps them to improve other English language skills (see diagram 05). 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

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quickly, but when they come across that word a number of times, they have a better chance to remember it.

As for the nineteenth (19) question, the students are asked if they use Duolingo and other language apps in the classroom, it appears that thirty (30) students representing (62.5%) said “no” and eighteen (18) students representing (37.5%) answered by “yes” (see diagram 06). 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 twentieth question (20), they are asked if they would like their teachers and administrators to integrate this type MALL in the teaching and learning process. The outcomes indicate that thirty-two participants representing (67%) answered by “yes”, while sixteen (16) participants representing (33.3%) answered by “no” and “not necessary” (see table 11). Then, when asked about justifying their choices, those who said yes claim that language apps are motivating tools which would help them develop language skills and would break the traditional way of learning by creating an enjoyable and an interesting atmosphere in the classroom. In fact, MALL gives students the opportunity to acquire the language in classroom and in non-classroom setting. Concerning Duolingo application, Munday (2016) mentioned that it can serve well as an addition to a formal language course through a school or university, whether in the classroom or online. For those who said no and not necessary, they justified their choices by saying that the help of the teacher and the use of the given syllabus are sufficient to develop their skills. 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.

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As stated in the review of literature, attitudes are positive or negative evaluation of an attitudinal object. Additionally, Technology Acceptance Model (TAM) considers attitude towards using a piece of technology as the evaluation of positive or negative feelings of individuals in performing a certain behavior (Schroff et al. 2011). From the discussed results of the questionnaire, it appears that the students 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 first research question and confirm the proposed hypothesis of the general introduction, which is “the students have positive attitudes towards using Duolingo to enhance their vocabulary”. An interesting finding is that students whatever their English vocabulary level, good, average or poor use Duolingo.

4.2. Factors Affecting Students’ Acceptance of Duolingo

From the analysis of the previous section, it is noticed that the majority of students have positive attitudes towards Duolingo, but there is a small minority who exhibit some negative perception about it. So, in order to go deeper in the study, we have interviewed three (03) participants; among them two (02) have positive attitudes, whereas the third interviewee has negative attitudes to determine the factors that pushed them to act as they do.

Technology Acceptance Model (TAM) suggests that when a person is presented with software, two (02) main variables or factors influence their decision about using it or not using it. The factors are “*Perceived Usefulness*” which means whether a given system is useful or enhances the users’ performance, and “*Perceived Ease-of Use*” which means whether that technology is effortless (see chapter one) (Davis, 1989). Then, it is perceived that “*Ease-of Use*” directly influences the “*Perceived Usefulness*”. TAM also suggests that usefulness and ease of use are mediated by *external variables* or external factors, including individual differences, system characteristics, social influences, and facilitating conditions.

4.2.1. Perceived Ease-of Use

The perceived ease of use is related to how easy it is to access a piece of technology. In other words, the more users feel a system is easy-to use, the higher their interest in using it. In order to determine this variable, we asked the interviewees about how they find learning vocabulary through Duolingo, and they all affirm that it is an easy application. Then, when they were asked to explain the reason why it is easy to use, the first interviewee reported: *“it is easy, because all the language components are divided into categories, meaning that verbs, adjectives, adverbs and other, each one is learnt in one unit”*, while the second and the third interviewees answered that it is simple and it offers explanations for the words. The second question reveals that the settings and the language used in Duolingo are easy and simple to understand, which confirms the *“Ease-of Use”*. Concerning the language, the first interviewee detailed that *“the sentences and words get more complex whenever I switch to the next level”*, which confirms the idea of Duy et al. (2017) who argue that Duolingo skills are structured so that students can have several levels of objectives, and in general, the requirements of each level becomes increasingly difficult from the previous one, which allows students learn and practice skills. Moreover, these outcomes go hand in hand with those of the study conducted by Borja (2018), where it is determined that Duolingo platform is an easy to use environment, the way the lessons are delivered, with short prompts that are varied and with distinct skills, makes this platform successful for English learning.

4.2.2. Perceived Usefulness

The perceived usefulness of the system is related to the productivity and effectiveness of the system and its benefits to improve user performance. In order to express the *“Perceived Usefulness”*, we asked the interviewees about whether Duolingo enhances their vocabulary performance. The interviewee (01) and (02) affirm that it enhances their vocabulary performance. In fact, this goes hand in hand with Addal (2018) and Borja (2018) studies,

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where it was it is confirmed that using Duolingo increases learners vocabulary, since the majority of the students showed better scores and went from a basic level to a higher one. However, the third interviewee denied the fact that it enhances her vocabulary performance. In this case, the “*Perceived Usefulness*” is achieved only for the two first interviewees, thanks to the amount of activities Duolingo offers.

For the fourth question, the two first interviewees affirm that the easiness of Duolingo makes it a useful application. The interviewee (01) declared: “*the easiness of this app makes it much useful, because all the learners, whether beginner or advanced, they all like to have something simple and useful at the same time*”. Then the interviewee (02) admitted: “*actually, this is what attracted me to use it in particular and not another application*”. These answers are in accordance with Davis and Venkatesh (2000) who state “*the easier a technology is to use the more useful it can be*”. Depending on their answers, “*perceived Ease-of Use*” has a significant impact on “*Perceived Usefulness*”, which has directly created positive attitudes towards using Duolingo. However, this is not the case with the third interviewee, since she denied it by saying: “*the easiness of Duolingo doesn’t make it useful, since it doesn’t increase my vocabulary performance*”. This means that “*perceived Ease-of Use*” has a negative impact on “*Perceived Usefulness*”, which has created negative attitudes towards using Duolingo (see TAM in chapter one).

4.2.3. External Factors

When we asked the interviewees about the advantages that Duolingo offers to them, they all insisted about the fact that it is free and holds the anytime and anywhere feature. Accessibility is one of the positive points of Duolingo; the users are able to complete their tasks anytime, anywhere and for free as long as there is internet connection, which is supported by many studies cited in the first chapter. Additionally, the second interviewee affirms that it helps her to learn grammar indirectly. Duolingo does not only teach its users

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words but also allows to learn the grammatical structures indirectly, which means that one has to incorporate it along with the other lessons (White, Siracusa; 2013).

As we progress in the interview, we asked another question spontaneously about the negative points that they may have encountered when using Duolingo. The first students points out: *“this application sometimes bugs and sometimes if I get the right answer, it tells me that it is false”*, and the second students simply declared that the app is addictive. The last student admitted: *“since I don’t always access to internet, it is difficult for me to use it”*. As already mentioned, internet access is important for students since it provides them with multiple resources for learning. Then she added that she sometimes finds it boring when the same sentences are repeated in different activities. It can be implied that Duolingo as any other information system has positive as well as negative features.

The sixth question of the interview reveals that in addition to the easiness and usefulness factors, there are other factors which have influenced them to use or to not use Duolingo. The first student argued her brother influenced her to use Duolingo and her willingness to learn the language. Similarly, the second interviewee admitted: *“my friends influenced me to use Duolingo, because they were using it even at the university and also the willingness to develop my English”*. From these answers, we deduce that it is the social factors (brother and friends) and personal factors (willingness to learn) that have affected the two students to use the application. As for as the third student, she declared that no one influenced her to use it, and once she encountered those obstacles (the difficulty of access to the Internet and the feeling of boredom), she immediately rejected it.

In order to explore their behavioral intention to use, we asked them whether they would continue to use Duolingo. The two first interviewees assert that they have the intention to keep using it, not only to learn English, but also to learn other languages, such as Italian and Spanish, since Duolingo is a multilingual application. From the answers of the two first

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interviewees, it appears that students 'positive attitudes towards Duolingo have created a positive behavioral intention to use which results in the acceptance of Duolingo. Finally, the third interviewee asserts that she does not have the intention to keep using it, and she added that there are other mobile applications that are better for use. That is, the student negative attitudes towards Duolingo have created a negative behavioral intention to use, which results in the rejection of Duolingo.

The findings of the interview provide an answer to the second research question about the factors which affect the students' acceptance or reluctance of using Duolingo as a tool to develop their English vocabulary. According to the answers of the two first interviewees, the factors that influenced them to accept Duolingo are: easiness and usefulness, social factors, personal factor and the positive features that Duolingo offers to them, including learning anytime and anywhere, easy accessibility, and the multiple activities which enable them to practice all language skills. An interesting finding is that the negative points of Duolingo did not prevent the students from using it. Moreover, the students consider learning grammar structures indirectly as a positive point, even if it is considered as drawback in the first chapter. Finally, according to the responses of the last interviewee who represent the minority of students having negative attitudes, the factors that influenced them to reject Duolingo are difficulty of access the Internet, the feeling of getting bored and the availability of other better language applications.

Conclusion

The discussion of the results obtained from the two research techniques allowed us to answer the two research questions and to confirm the suggested hypotheses. The results reveal that the majority of students have positive attitudes towards using Duolingo to learn vocabulary. The results have also revealed that there are many factors which have influenced the students' acceptance of Duolingo including learning anytime and anywhere for free,

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easiness and usefulness, social factors and the multiple activities that Duolingo provides. Then, the factors that have influenced the minority of students to reject the application are the difficulty to access the Internet, the feeling of getting bored and the belief that there are other language applications that are more useful than Duolingo.

General Conclusion

The current dissertation has explored EFL students' attitudes towards using Duolingo language application to enhance their vocabulary. It has dealt with junior degree (L3) LMD students in the Department of English at Mouloud Mammeri University of Tizi Ouzou.

The study has sought to reach two main objectives. The first is to determine students' attitudes towards Duolingo language application to enhance their vocabulary repertoire. The second is to identify the factors which influence the students to accept or reject Duolingo as a tool to improve their vocabulary. To fulfill these two objectives, we have relied on Davis' Technology Acceptance Model (TAM), which models how users come to accept or reject a particular piece of technology. TAM suggests that an individual's attitudes towards a particular piece of technology are a positive or a negative evaluation when performing a certain action. In addition, it implies that when a person is presented with a software, this involves a number of factors namely: "*Perceived-Ease of Use*", "*Perceived Usefulness*" and other external factors, which influence their decision about using it or not.

In order to conduct the study, we have opted for a mixed methods research that combines both quantitative and qualitative methods for data collection and data analysis. Two main instruments are involved in the study. An online questionnaire is administered to forty-eight (48) L3 students who use Duolingo application, and a semi-structured interview conducted face-to-face with three (03) of them. In fact, the students are selected on the basis of convenience sampling. For data analysis, the computer program Statistical Package for Social Sciences (SPSS) is used to analyze the statistical data gathered from the closed-ended questions of the questionnaire, and Qualitative Content Analysis (QCA) is applied to interpret the qualitative data obtained from the open-ended questions of the semi-structured interview and the questionnaire.

General Conclusion

The discussion of the results of the questionnaire has revealed 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 administrators and teachers integrate Duolingo and other language applications in the classroom setting as an additional pedagogical support to their learning.

To go deeper in the study, a semi-structured interview is conducted with three (03) students who have already responded to the questionnaire to determine the factors affecting their acceptance or reluctance to use Duolingo as a tool to learn vocabulary. The discussion of the results of the interview has shown that “*Perceived Ease-of-Use*” and “*Perceived Usefulness*” are achieved only for the two first students, and this has created positive attitudes towards Duolingo use. For the third student, “*Perceived Ease-of-Use*” is achieved, but not “*Perceived Usefulness*” since Duolingo does not enhance her vocabulary performance, and this has created negative attitudes towards the use of Duolingo.

Besides, the discussion of the results of the interview has revealed that, in addition to the ‘easiness and usefulness’ of Duolingo, there are other factors which have influenced the two first students to accept Duolingo as a tool to improve their vocabulary. The first is the ‘anytime anywhere’ feature that Duolingo provides them with. The second relates to external factors, including social factors (family and friends) and their willingness to enrich their vocabulary repertoire as well as other skills. It has also shown that the negative obstacles they encountered when using Duolingo did not affect their attitudes. Therefore, due to such factors, the students have the intention to keep using Duolingo, not only for learning English, but also

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for learning other languages. Finally, the discussed results of the interview have demonstrated that a set of factors have influenced the third student to reject Duolingo, including the difficulty to access the Internet, feeling of boredom, and the belief that there are other better language applications.

To conclude, the study has provided answers to the two research questions and has confirmed the two suggested hypotheses of the General Introduction. It has shown that EFL students have positive attitudes towards using Duolingo to learn vocabulary. Furthermore, a number of factors, such as easiness and usefulness, have influenced their acceptance of Duolingo use. However, factors such as, difficulty of access to the Internet and the feeling of boredom, have influenced the small number of students to have negative attitudes and to reject Duolingo use.

There have been some limitations faced while conducting this research. The first is the fact of relying on convenience sampling, because not all junior degree (L3) LMD students use Duolingo application. Another one is the limited number of respondents to the questionnaire and the interview, because of the period of exams. Thus, we have received forty-eight (48) responses to the questionnaire, and only three (03) interviewees. Regarding further investigation, we suggest students' attitudes towards Duolingo as a tool to learn writing or listening skills. We also suggest the use of other language applications, such as Memrise, Babbel, Busuu and Rosetta.

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Appendix 1: Students' questionnaire

Dear Student,

This questionnaire is a part of our investigation on L3 EFL students' attitudes towards the use of Duolingo language application to enhance their Vocabulary in the Department of English at MMUTO. You are kindly requested to answer the following questions 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: Students' information about Duolingo

1- Do you have a mobile device?

Yes ☐

No ☐

2- What kind of mobile device do you have?

a. Basic-phone (no camera/video, no applications, etc.) ☐

b. Smartphone ☐

c. Tablet ☐

d. Portable Computer (PC) ☐

Other.....

3- Do you have internet access in your mobile device?

Yes ☐ No ☐

4- Do you download language learning applications in your device?

Yes ☐

No ☐

5- Have you ever heard of Duolingo language learning app?

Yes ☐

No ☐

6- Do you use Duolingo to learn English?

Yes ☐

No ☐

7- How often do you use it?

Everyday ☐

Several times a week ☐

Once a week ☐

Never ☐

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

Listening ☐

Grammar ☐

Vocabulary ☐ ☐ Pronunciation

Section Two: Vocabulary learning

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

Yes ☐

No ☐

Please justify your answer?

.....
.....

10- How do you evaluate your English vocabulary?

Poor ☐

Average ☐

Good ☐

11- What kind of problems do you face when you encounter new words?

Pronunciation problems ☐ Spelling problems ☐

Memorizing problems ☐ Meaning problems ☐

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

a. Books and printed materials ☐

b. Mobile devices ☐

Other.....

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

13- Do you use Duolingo to learn vocabulary?

Yes ☐

No ☐

14- How do you find learning vocabulary through Duolingo?

Enjoyable ☐

Interesting ☐

Boring ☐

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

Strongly agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly disagree ☐

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

Strongly agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly disagree ☐

17- Does Duolingo help you overcome your vocabulary learning problems

(Pronunciation, Spelling...)?

Yes ☐

No ☐

If yes, how does it help?

.....

.....

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

Yes ☐

No ☐

19- Do you use Duolingo and other language apps in the classroom?

Yes ☐

No ☐

20- Would you like your teachers or administrators integrate language learning apps in the teaching learning process?

Yes ☐

No ☐

Not necessary ☐

Please justify your answer?

.....

.....

Thank you for your collaboration!

Appendix 2: Interview questions

This interview is a part of our research study on L3 EFL students' attitudes towards the use of Duolingo language application to enhance their Vocabulary. The purpose of this interview is to obtain L3 students' views on the factors which influence them to accept or reject Duolingo as a tool to enhance their vocabulary.

- 1- Do you find using Duolingo to learn vocabulary easy or difficult?
-Please, can you explain why?
- 2- Are the settings of Duolingo easy to understand?
- What about the language (sentences, words...)
- 3- Does Duolingo enhance your vocabulary performance?
- 4- Do you think that the easiness of this app makes it useful?
- 5- According to you, what are the advantages that Duolingo offers to you?
- 6- In addition to the easiness and usefulness of Duolingo, what other factors that may have influenced you to use it?
- 7- Do you have the intention to continue using Duolingo in learning English?

Thank you for your contribution!