



UNIVERSIDAD DE CUENCA

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Carrera de Pedagogía de los Idiomas Nacionales y Extranjeros**

“The effects of MALL on EFL higher-education students’ oral fluency”

**Trabajo de titulación previo a la
obtención del título de Licenciada
en Pedagogía del Idioma Inglés**

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Cuenca, Ecuador

07-marzo-2022



RESUMEN:

Actualmente, alcanzar la fluidez oral al aprender inglés como lengua extranjera representa un desafío para la mayoría de estudiantes universitarios. La educación tradicional carece de autenticidad al momento de practicar conversaciones de la vida real, creando una brecha entre la producción oral y la metodología utilizada para lograr el dominio del idioma. Esta síntesis de investigación tiene como objetivo identificar la efectividad del uso del Aprendizaje de Idiomas Asistido por Dispositivos Móviles (MALL) para mejorar la comunicación, así también como determinar las implicaciones metodológicas de su aplicabilidad en aulas convencionales. Para ello, se seleccionaron y analizaron 20 artículos con enfoques cuantitativos, cualitativos, mixtos y cuasi experimentales para demostrar la eficacia del aprendizaje móvil en la adquisición de un segundo idioma. Los resultados revelan que (1) el aprendizaje móvil puede beneficiar al desarrollo de destrezas, especialmente el habla, (2) MALL puede usarse como un suplemento en el proceso de enseñanza-aprendizaje, y finalmente (3) MALL puede influenciar positivamente el desempeño y motivación de los alumnos, a pesar de que muchos educadores tienen conceptos erróneos sobre el uso de la tecnología con fines educativos.

Palabras claves: MALL. Fluidez. Estrategias. Aprendizaje móvil. Aprendizaje de un segundo idioma. EFL. Habla. Producción oral.



ABSTRACT:

Acquiring oral fluency currently appears to be a challenge for most EFL tertiary learners. Traditional education lacks authenticity in terms of practice and real-life conversational situations, creating a gap between the students' oral production and the methodology used to accomplish proficiency in the target language. This research synthesis aims to identify the effectiveness of using Mobile Assisted Language Learning (MALL) when enhancing spoken communication as well as to determine the methodological implications of its applicability in conventional classrooms. For this purpose, 20 research papers with a quantitative, qualitative, mixed-method, and quasi-experimental approach were selected and analyzed in order to prove Mobile learning's efficiency in second language learning. Findings reveal that (1) m-learning may benefit students' development of macro skills, especially speaking, (2) MALL can be used as a complement in the teaching-learning process, and (3) MALL has a positive influence on pupils' motivation and performance, even though educators might hold misconceptions towards the use of technology for educational purposes.

Keywords: MALL. Fluency. Strategies. Mobile Learning. Second Language Learning. EFL. Speaking. Oral Production.



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ACKNOWLEDGMENT

I would like to first thank my family for their support and encouragement during this process, especially my mother for being my biggest inspiration. Second, I want to express my gratitude to my tutor Juan Jose Santillán, whose guidance was crucial for completing this project. Lastly, I would also like to thank all my teachers for sharing their valuable knowledge and anecdotes that have been helpful not only for my major but also for life.

Paula Orellana

I would like to express my gratitude to my beloved family, who have supported me during my studies and life. My sincere thanks to all my teachers from my career, and a special thanks to my tutor Mgt. Juan José Santillán, for his guidance throughout this research.

Gabriela Hernández



DEDICATION

I dedicate this research project to my beloved mother, Claudia and siblings, Carolina and David, who have always believed in me despite the circumstances. My mother's devotion to our family has encouraged me all these years to keep going on and achieving my goals. I equally dedicate this project to my grandparents, Rebeca and Walter, who are a living testament to unconditional love and selflessness. They have taught me that no matter how bad a situation may seem, a cup of coffee, cookies, and some advice can fix anything. Finally, I would like to dedicate this work to Jennifer, whose friendship has encouraged me to become a better version of myself.

Paula Orellana

I dedicate this research project to my beloved parents, Lupe and Patricio, who have taught me to never give up on my dreams.

Gabriela Hernández



INTRODUCTION

In recent years, mobile phones have become a current tool in various aspects of the modern world. Nowadays, there has been a tendency of using mobile devices for English teaching, developing the term MALL (Mobile Assisted Language Learning). In terms of oral communication, MALL can be useful to develop particular areas of English fluency by using mobile features to enhance oral practices. MALL cannot replace educators in English classes, but it may be an aid to facilitate fluency practice and provide the students affordance to improve English communication and interaction.

Although the various advantages that applying MALL may have in English language, using mobile phones in English education may have certain limitations; thus, this research synthesis analyzes the effects of MALL on EFL higher-education students' oral fluency taking into account the pedagogical perceptions of students and teachers from previous research papers.

The report of this study consists of the following chapters:

Chapter I: This chapter encompasses the topic and description of the research paper. Moreover, the background, statement of the problem, and the rationale are presented as well as the research questions.

Chapter II: In this chapter the theoretical framework is presented. It includes basic contents for understanding MALL to facilitate the comprehension of the paper.

Chapter III: This chapter presents the literature review of twenty selected papers.

Chapter IV: In this chapter the methodology of the research is described. Moreover, the chapter also specifies the inclusion and exclusion criteria used for the data collection of the research papers.



Chapter V: This chapter encompasses the analysis of the revised research papers into tables

Chapter VI: In this chapter the conclusions and recommendations are explained considering the previous analysis of the research.



CHAPTER I

Description of the Research

1.1 Background

Due to technology's current development, mobile phones have become necessary in almost every academic, professional, and entertainment field (Miangah, 2012). As reported by the International Telecommunication Union (2016) mobile devices have spread enormously by covering 95% of the global population living in areas covered by mobile-cellular networks in the last decade (as cited in Crompton & Bruke, 2018).

Nowadays, modern generations are more familiar with these devices for their sense of freedom of time and place and ease of use (Zayed, 2016). Pew (2017) and Poushter (2016) determine that the largest demographic of users range from 18 to 29 years old, which is also typically the age of most college students (as cited in Crompton & Bruke, 2018). Mobile phones have great potential for communication and exchange of information (Miangah, 2012). These characteristics give users portability, connectivity, and social interactivity, which might be beneficial in education and for EFL learners in particular (Zayed, 2016).

As technology is an ever-changing phenomenon, methodologies related to this field in terms of language learning and teaching have appeared (Yaman & Ekmekçi, 2016). One of them is CALL (Computer-Assisted Language Learning), which implicates “any process in which a learner uses a computer, and as a result, improves his or her language” (Beatty, 2013, p.7).

Chappelle (2009) claims that CALL also “leads to telecollaborative pedagogies which are favorable for learner’s linguistic and intercultural competence development” (as cited in Adorno & de Carvalho, 2017). As stated by Chapelle (2010) CALL involves:



a variety of technology uses for language learning including CD-ROMs containing interactive multimedia and other language exercises, electronic reference materials such as online dictionaries and grammar checkers, and electronic communication in the target language through email, blogs, and wikis (p.67).

Even though the first computers designed for language learning were available at university campus research facilities exclusively during the 1950s, CALL began to be used around the 1960s in a broader educational context (Beatty, 2013).

According to Yaman and Ekmekçi (2016) after several years of efficient use of mobile technology, MALL (Mobile Assisted Language Learning) has emerged as a subset of both Mobile Learning and Computer-Assisted Language Learning (CALL). Kukulska-Hulme (2018) also interprets MALL as just another branch of computer-assisted language learning except that it incorporates mobile technologies. However, Yaman and Ekmekçi (2016) remark that both MALL and CALL are not meant to replace each other but to complement each other ,by helping learners master language skills in different scenarios.

During the mid-1990s MALL came up as a result of: “the advent of hand-held computer-based devices” (Burston, 2013). Nyiri describes it "as learning that arises in the course of person-to-person mobile communication" (as cited in Ibrahim & Kadiri, 2018, p. 2). MALL displays a wide variety of digital materials that users can interact with each other out of the classroom (Burston, 2013). Research by Gaudry-Perkins and Dawes (as cited in Ibrahim & Kadiri, 2018) explains that these resources range from:

Simple SMS messaging, MMS, live classroom sessions, web, and podcasting to audio-to-text or text-to-audio applications [...] It can provide meaningful learning



experiences via educational video, logical reasoning, and problem-solving aptitude games, and even mobile whiteboards for interactive discussions (p.2).

CALL shares similar features with MALL such as increased learner autonomy, individualized learning, and guided practice; yet Kukulska-Hulme and Shields affirm 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” (as cited in Yaman & Ekmekçi, 2016, p. 27).

Research by Nah, White, and Sussex shows that students perceive mobile devices as more effective and engaging than regular classes or CALL-related content due to their smaller size and better portability (as cited in Chang, Warden, Liang & Chou, 2017). Yaman and Ekmekçi (2016) come to the conclusion that after considerable changes over time, CALL has transferred computer functions into mobile devices such as tablets and smartphones, creating a modern dimension of second language learning and teaching. In addition, Levy states that (1997) CALL only emphasizes “the search for and study of applications of the computer in language teaching and learning”, whereas MALL includes a more extensive range of tools like cell phones, PDAs, smartphones, pads, pods and interactive mobile 2.0 technologies (as cited in Yaman & Ekmekçi, 2016).

Besides, MALL can be integrated into daily life activities boosting familiarity and confidence among users by providing unlimited access to several materials and content (Lindaman & Nolan, 2015). MALL offers control over learning by tracking learners’ behaviors and recent activity through different applications and platforms in non-academic settings and reporting this information to the teacher (Kukulska-Hulme, 2018).



Mobile learning or M-learning is defined by Sharples, Milrad, Arnedillo-Sánchez, and Valvoula (2009) as: “the processes (both personal and public) of coming to know through exploration and conversation across multiple contexts among people and interactive technologies” (as cited in Hockly, 2012). Mcconatha, Praul, and Lynch (2008) explain that M-learning is a relatively new tool in the pedagogical field that supports teachers and enables students to be part of the growing world of distance learning.

Early studies focusing on M-learning started in 2000. Sharples (2000) provides the first look at the potential of personal mobile technologies when enhancing educational programs (as cited in Mcconatha, Praul & Lynch, 2008). Mobile learning focuses on the learner which is the main beneficiary, and technology allows the pupil to learn in any context (Ally & Prieto-Blázquez, 2014). Nonetheless, Pimmer, Mateescu, and Grohbiel (2016) have concluded that “after more than 20 years of mobile learning research, there is still relatively little systematic knowledge available, especially regarding the use of mobile technology in higher education settings” (as cited in Crompton & Bruke, 2018, p. 53).

Through the years, several approaches have complemented Mobile Learning. The Communicative Approach, the Socio-Constructivist approach, and the Blended-Learning Approach combine valuable learning contexts with interactions that allow learners to construct knowledge independently and improve their oral production (Ruhalahti, Korhonen & Rasi, 2017). Besides, techniques like language immersion and, primarily, MALL support language learning through these devices (Lai, 2016). With this consideration, implementing MALL in a second language learning class may be favorable for EFL students.

Mobile phones are tools that may positively influence teachers' labor and help them adapt their lessons to their students' necessities and interests, making second language learning more enjoyable and motivating (Saran, Seferoglu & Cagiltay, 2009). Mobile phones



cannot ever replace educators, but they can make education more accessible and efficient (Ibrahim & Kadiri, 2018). In support of this claim, Kukulska-Hulme and Shield (2008) agree with Chang and Ho (2009) on the fact MALL enables new ways of learning by emphasizing continuity of access in different contexts, as well as mobile devices supporting listening and speaking activities in situational learning focusing on each individual's needs (as cited in Hwang & Chen, 2011).

Research has shown a positive reaction of learners' perceptions to the application of mobile technology in teaching environments improving not only communication skills but also expanding vocabulary (Lai, 2016; Ibrahim & Kadiri, 2018). The evidence also reveals that MALL has beneficial effects on students' oral competence by increasing self-autonomy while practicing the target language at any time possible (Ahn & Lee, 2015; Ataeifar et al., 2019).

Studies investigating MALL's effects and its relationship with collaborative learning show that mobile learning strategies outperformed guided teaching practice, which confirms the connection between mobile technology and authentic collaborative learning (Chang & Lin, 2019; Ruhalahti, Korhonen & Rasi, 2017). Additionally, the results indicate that pupils developed their Zone of Proximal Development by increasing their problem-solving abilities and knowledge construction. Finally, when determining postgraduate students' motivations and uses of MELR (Mobile English Language Resources), seeking better communicative skills for job opportunities and vocabulary development were the two main reasons behind using this supplementary tool. MELR emphasizes social interaction and collaboration



alongside peers and teachers, which allow them to pursue language learning programs that are not exclusively exam-driven (Dayang Zhang & Pascual Perez- Paredes, 2019).

During the research process, different perceptions and data regarding MALL implementation in EFL classrooms have been analyzed. Nevertheless, no information about students' possible cognitive responses when using MALL in a traditional EFL classroom was found.

1.2 Problem Statement

Speaking is still considered one of the most challenging language skills to acquire by EFL learners since it is a spontaneous face-to-face interaction, which can only be improved by practice (Ahn & Lee, 2015). Unfortunately, EFL learners rarely have access to opportunities in which they get to use the target language in a meaningful way (Alsatu, as cited in Ahn & Lee, 2015).

According to the Cambridge Dictionary of English, *fluency*, a feature of English oral expression skills, is the ability to speak or write a foreign language quickly. As researchers Ataeifar et al. (2019) explain, acquiring fluency in the target language seems a challenge for most English learners. In the education system, little attention is paid to the oral production of the target language (Diaz, 2012). Hence, many teachers generally use traditional methods to teach English content, and, i.e., English textbooks follow a traditional model based on induction in which their dialogues lack authenticity (Zhang & Perez- Paredes, 2019). As stated by Suzan and Bagheri, EFL students have difficulties practicing the language due to the social conditions and the short amount of time to practice oral skills in large classes (as cited in Ataeifar et al., 2019). Hence, only role-play activities are usually used in standard classes (Zou, Li & Li, 2018).



Notwithstanding, real-world communication is far removed from classroom language practices. As Morell Jolivet and Thomas (as cited in Barrett, Liu & Wang, 2020) have concluded, many English speakers focus on people's fluency while maintaining conversations with foreigners assuming specific errors and misunderstandings during a talk. Due to these challenges, a gap exists between students' language fluency and the teaching methods used to practice the language.

In recent years, the EF Education First company has been releasing the English Proficiency Index ranking. The EF EPI 2020 scored Ecuador in the last place of Latin American countries with a very low English proficiency level. According to a study carried out by Education First, the causes of a low English level, especially in Latin American countries, are the short amount of English lessons in high schools and the lack of teaching training on using different tool kits in classrooms. During 2016, the Ecuadorian English Curriculum marked a shift from traditional approaches to communicative approaches to teach English; however, no changes have been seen since many teachers are still using traditional methodologies (Villafuerte & Macías, 2016). Although Ed-tech (Education Technology) can provide students with authentic material, there are still misconceptions about implementing technological resources in classrooms (Stickler et.al as cited in Vopova et.al, 2016). Since MALL and CALL are considered new methodologies of the 21st century, many teachers are not well acquainted with the effectiveness of these due to the lack of ICTs (Information and Communication Technologies) literacy (Rahimi,2015).

Additionally, many teachers may not have enough knowledge or lack formal preparation for integrating mobile technology in traditional learning settings. Kolomieets & Guryeyeva explain that many educators might get uncomfortable because they stop mastering the content and lose classroom management (as cited in Ataeifar et al., 2019). On this subject,



Díaz (2012) stated that one of the problems regarding the implementation of MALL in the classroom is the lack of familiarity of teachers with the third generation of mobile technology. Moreover, Sharples (cited by Díaz, 2012) establishes three considerations that may affect the use of mobile phones by teachers. First, mobile devices are relatively new which makes it difficult to analyze long-term results. Second, learners may be more interested in the advantages of mobile devices for non-educational purposes rather than in their learning results. Third, mobile devices may be an informal manner of learning.

As regards the development of speaking skills, Ataeifar et al. (2019) and Lai (2016) have claimed that fluency is better practiced with face-to-face teacher interaction. Nevertheless, learners constantly struggle with speaking since EFL classrooms cannot always offer enough practice opportunities and real-time interactions with the target language (Ahn & Lee, 2015). This issue may cause insecurity, anxiety, and even learners' unwillingness (Sun et al., 2017). Additionally, the lack of space and time in an English course is a limitation to give individual feedback, so many students are reluctant to talk even in classrooms, fearing to express themselves and showing their English gaps (Zou, Li&Li, 2018).

While all English skills are interconnected and have equal importance, oral communication abilities seem to represent a high level of strain in students which may constitute low academic improvements since learning outcomes are adjacent to deep cognitive processes (Trejo, Godina & Altamirano, 2020). Chen and Pedersen (2012) have stated that learners use a cognitive process to encode information divided into selection, rehearsal, elaboration, and organizational strategies. The authors have also mentioned that deep cognitive processing is related to academic improvements. However, when learners experience fear and lack of confidence, language anxiety might arise, causing negative self-related cognitive thoughts to consume cognitive resources that would typically be



applied in a task, representing a problem for students since language learning is an intense cognitive activity (Khan, 2010).

1.3 Rationale

This study focuses on increasing the acquisition of oral English fluency through Mobile Assisted Language Learning (MALL). MALL provides students several options to improve their oral fluency in English. According to Saran, Seferoglu, and Cagiltay (2009), "With their widespread use and their features such as mobility, localization, and personalization, mobile phones offer great potential for out-of-class learning" (p.99). According to Barret, Liu & Wang (2020), integrating mobile phones as educational tools may increase learners' confidence and participation through interactive real-world tasks. Attewell (2004) also claims that mobile devices engage reluctant learners and help them to stay concentrated for more extended periods (as cited in Zayed, 2016, p.203). These devices might raise cultural awareness by communicating with native English speakers in no fixed location or time as well (Zou, Li & Li 2018).

On this subject, researchers Morgana and Kukulska-Hulm (2021) have claimed that MALL integrates synchronously and asynchronously learning since students can interact, share, and have access to a wide variety of educational content. As stated by Dugartsyrenova and Sardegna, "mobile applications can assist language learners to improve their speaking skill, develop the process of reflection, and enhance their creativity and self-evaluation by providing them with extra time and resources to plan their learning procedures independently" (as cited in Ataeifar et al., 2019, p.3). This type of technology may promote autonomous learning and critical thinking, turning students into more productive and conscious individuals (Xu et al., 2020).



Recent studies show potential gains in implementing MALL for teaching and learning processes. Burston (2015), analyzed three of them that focus on mobile devices as audio recording tools. Liu (cited in Burston, 2015) reported that oral production gains from applying a mobile learning system (HELLO) using digital voice recorders. A second study showed improvements in the speaking area while using the mobile application Learnosity (Robertson et.al cited in Burston,2015). A similar result was reported by Papadima-Sophocleous et.al (cited in Burston, 2015) while measuring the impact of iPhone Touch on oral English skills.

Although several studies focus on the effects of MALL to develop oral skills such as pronunciation, vocabulary, and grammar (Ahn & Lee,2015), teachers are still not well acquainted with the empirical evidence regarding the use of MALL in EFL contexts. Despite the fact that teachers may lack acquaintance with MALL, it is highly recommended to examine the curriculum in order to verify the evolution of language learning involving the influences of mobile technology in new educational practices (Diaz,2012). Researcher Andujar (2019) mentions that understanding the technological advantages of Mobile Assisted Language Learning (MALL) and Computer-Assisted Language Learning (CALL) will not only benefit learners and teachers but also curriculum designers since new investigation addresses that MALL and CALL encompass flipped learning, gamification strategies and text-to-speech systems.

Therefore, this research will provide educators valuable information before making informed decisions and overcome common misconceptions about mobile devices' potential in English oral production. Furthermore, this investigation will contribute to new insights about the implementation of mobile devices, so educators can use it as a guideline of the aspects to be considered when applying MALL in language learning environments. Finally, from a



language learning perspective, this paper will collect main investigations to expand language teaching skills under MALL practices for oral acquisition.

1.4 Research Questions

1. What are the effects of using MALL on higher-education students' oral fluency, as reported in the available empirical evidence?
2. What are the methodological aspects of the inclusion of MALL, as reported in the available empirical evidence?



CHAPTER II

Theoretical Framework

2.1 MALL as Independent Variable

2.1.1 Historical Perspectives of MALL

Klay declares that the very first steps to M-learning were taken by the Xerox company when proposing “a self-contained knowledge manipulator in a portable package that allowed children to explore, create and share dynamic games” (as cited in Gholami & Azarmi, 2012). At the beginning of the 21st century, mobile learning came into sight through various projects which took place in schools, museums, workplaces, cities, and even rural areas worldwide. Consequently, these events led to the existence of MALL as a “generated branch of studies that relates to language learning and mobile technologies” (Gholami & Azarmi, 2012).

Due to the rapid development and spread of wireless technology, MALL has also become a specialization that facilitates the extended access to free and unlimited learning materials and resources considering mobile phones as the main tools since they offer multimedia portable features along with multiple communication channels (Fotouhi-Ghazvini, Earnshaw & Haji-Esmaili, 2009). Chen, Chen, Jia, and An (2020) emphasize that Smart mobile devices are currently replacing feature phones because of functions such as content-awareness, which refers to the gathering of data from the environment through sensors, and user-interaction enabled by tasks that give or ask information. Reinders and Pegrum point out that the range of these devices includes “smartphones, tablets, and wearable devices, such as smartwatches and smart glasses, [...] operated by users’ touch, voice and gestures [...] based on the multiple functions of the



devices, such as QR codes, augmented reality, and place-sensitive functionality” (as cited in Chen, Chen, Jia & An, 2020, p.3).

2.1.2 Principles and Protocols of MALL

Palalas determines that one of the main principles of MALL is linked to mobility, which deals with two aspects such as the learner and handheld devices permitting accessibility to authentic interactions in the target language despite time and location (as cited in Arvanitis, Krystalli & Panagiotidis, 2016). Therefore, MALL can be analyzed from both technology-centered and student-centered points of view since both approaches give emphasis to the flexibility and mobility given to pupils and devices in terms of access and utility. (Burston, as cited in Arvanitis, Krystalli & Panagiotidis, 2016).

Based on these perspectives, several assertions have been made by researchers. For instance, Herrington, A., Herrington, J., and Mantei present some relevant principles regarding MALL such as “providing time for exploration of mobile technologies, blending mobile and non-mobile technologies, using mobile learning both individually and collaboratively, and employing the learners’ own mobile devices” (as cited in Stockwell & Hubbard, 2013, p.6). Elias also proposes four significant principles linked to MALL such as equitable use, flexible use, error tolerance, and instructional climate (as cited in Stockwell & Hubbard, 2013).

The first principle refers to equity among students when using technology (Elias, 2011). Whether in a classroom or other language learning environment, some aspects are important to address like learners owning a device and its compatibility and functionality in terms of content delivery, consistency of connectivity, and the cost of using these devices (Stockell & Hubbard, 2013). All these considerations aim to convey information in a simple format for its better assimilation (Elias, 2011).



The second principle deals with flexibility for supplying data in small chunks; in other words, keeping language learning tasks as short and concise as possible. Therefore, these long activities must be split into smaller and coherent chunks (Stockell & Hubbard, 2013). According to Ragan and Smith, these changes represent a pedagogical advantage for students since they can delete obsolete content that is not necessary for accomplishing a learning goal (as cited in Elias, 2011). Elias (2011) also suggests that this point should be the foundation for other mobile learning frameworks.

The error tolerance principle designed for learning settings reduces risks and adverse results of errors (Elias, 2011). Although mistakes may occur in traditional circumstances, m-learning has certain traits to recognize learner differences (Stockell & Hubbard, 2013). That is to say, this principle can concentrate on scaffolding and distinct support of situated learning methods as well (Elias, 2011). Lave and Wenger describe M-learning as particularly suitable for situated learning for its accessibility to materials while performing tasks (as cited in Elias, 2011). This author (2011) explains that “in these cases, job performance aids included in the learning package may reduce learner errors by providing just-in-time training and support as and when required” (p.151).

The fourth principle called instructional climate encompasses constant reinforcement through practice by offering short tests, questionnaires, and constant reminders either promoted by the system or educators (Stockell & Hubbard, 2013). These authors also express that this system pushes students to keep working but it also respects their boundaries. Research by Kennedy and Levy indicates that “the push mechanism has the potential to prompt learners to action, but at the same time, learners have ideas of when and how frequently they would like to receive these reminders” (as cited in Stockell & Hubbard, 2013, p.8).



2.1.3 The current use of MALL in EFL classrooms

Nowadays, mobile devices may be seen as pedagogical tools exposing students to tasks aimed to be solved and accomplished using the target language (Arvanitis, Krystalli & Panagiotidis, 2016). MALL has changed how individuals communicate, live and learn by creating environments that extend learning opportunities and reshape learning styles as well (Heyoung & Yeonhee, 2012).

As stated by Arvanitis, Krystalli, and Panagiotidis (2016), the most outstanding findings regarding the use of MALL for educational purposes are “large gains in listening and speaking ability, vocabulary and grammar knowledge, an improvement in the interaction between students, enhancement of learning motivation and learning interests and finally increase of creative thinking” (p.7646).

Kukulska-Hulme, Traxler, and Pettit claim that “unlike conventional learning styles, MALL enables learners to take the lead and engage in activities catering to their individual needs” (as cited by Xu & Peng, 2017, p.2). In fact, Cochrane (2013) sees this approach as an opportunity for pupils to learn actively in their own contexts. When learning by themselves, students are able to create content that other learners can validate and use (Ally & Prieto-Blázquez, 2014), and this learner-generated content directly contributes to the creation of learning communities (Cochrane, 2013). These learning communities let their members give feedback and tutor each other resulting in high-level learning (Ally & Prieto-Blázquez, 2014).

The extensive community of learners that exist in virtual environments encourages the support and development of relationships among diverse users. (Elias, 2011). Botha, Vosloo, Kuner, and Van der Berg notice that these users are able to share information and connect with individuals from different parts of the world which can generate “the



development of intercultural competencies and skills to communicate between cultures" (as cited in Ally & Prieto-Blázquez, 2014, p. 145). As a matter of fact, Valvoula and Sharples ensure that "mobile learning is a social rather than technical phenomenon of people on the move, constructing spontaneous learning contexts and advancing through everyday life by negotiating knowledge and meanings through interactions with settings, people and technology" (as cited in Ally & Prieto-Blázquez, 2014, p. 145). Furthermore, Saye and Brush state that making use of these features permits learners to communicate rapidly and work collaboratively without time and location constraints (as cited in Elias, 2011).

Nevertheless, pedagogical issues may arise too when implementing this method. For example, a study carried out by Kukulska-Hulme and Shield (2008) showed that "mobile technologies were mainly used for content delivery rather than fostering communication and collaboration" (as cited in Chen, Chen, Jia & An, 2020, p.3). Mobile phones were used to send text messages among peers instead of promoting teamwork. Other limitations are storage capacity, battery life, and compatibility between devices (Stockwell & Hubbard, 2013). Despite these difficulties, Kukulska-Hulme and Shield also rely on mobile devices' effective implementation for collaborative listening and speaking tasks that can keep learners interested and motivated (as cited in Gholami & Azarmi, 2012).

2.2 Approaches for MALL Language Teaching

2.2.1 Communicative Approach

After World War II the number of immigrants increased, and so the need of learning a new language; however foreign language education, which was taught under the rules of traditional teaching, was a privilege that only minorities could access (Lopez & García, 2015). Nevertheless, during the 1970s a new educational concept was needed to encourage public



and free education. As Hymes (cited by Sworbik, 1994:33-34) mentioned, “[...] competent language users not only commands accurately the grammar and vocabulary of the chosen language but also knows how to use that linguistic knowledge appropriately in a range of social situations”.

In the following years, the Communicative Approach was popularized in Europe since the Council of Europe encouraged the establishment of an operative model of language programs (Goullier, 2020). This author also mentions that the main objective of these programs was the acquisition of a good level of communicative competence impulsed by the current globalization, and the need to communicate with several speakers from different countries. Lopez and Garcia (2015) have mentioned that the communicative approach offers the learner the opportunity to practice the language in a context to carry out an adequate language production. In addition, teachers use authentic materials that are not specifically aimed to teach English but to practice the language through videos, magazines, newspapers, among others.

Furthermore, there is a connection between the main three basic features of the Communicative Approach and some of the characteristics of MALL. Hence, the authors Lopez and Garcia (2015), Dos Santos (cited by Dos Santos, 2019,2020), and Gholami & Azarmi (2012), have proposed the following:

- MALL, as well as the communicative method, focuses on explicit and implicit learning,
- The Communicative Approach establishes a connection with MALL by increasing the attention to language with the use of significant tasks providing a tailored education based on real situations, as well as the use of audiovisual materials as a source to practice reading, speaking, and writing skills.



- The Communicative Approach and MALL consider students as the center of the learning process encouraging them to express themselves in the target language.

2.2.2 Socio-constructivist Approach

The Socio-constructivist approach emerged with the concept of the Zone of Proximal Development (ZPD) proposed by Vigotsky which describes that the learning environment needs to support the students to achieve cognitive structures to enrich their skills (Hall, 2007). Vygotsky (cited by Bay, Bagceci, & Cetin, 2012) has mentioned that knowledge is highly conditioned by social interactions, and therefore an individual is able to advance in learning stages with the help of others.

Researchers Hall (2017) and Bay, Bagceci, and Cetin (2012) have proposed some basic features of the Socio-constructivist approach in learning settings which are the following: acquisition of cognitive development that allows learners to increase skills such as problem-solving, analytical thinking, deep understanding, learning in peer interaction settings, and real-world activities used to solve similar world problems. That is to say that the Socio-constructivist approach views the learning process as a self-motivated process, and a co-construction of knowledge conditioned by social and cultural factors (Bay, Bagceci & Cetin, 2012). Consequently, the Socio-constructivist theory establishes a relationship with some characteristics of MALL considering that one focal point of MALL is to give emphasis on scaffolding and problem-solving strategies through student interaction to increase confidence and class participation (Gabarre et al., 2015). Bay, Bagceci & Certin (2012) mention that educators should consider the assumption that learners who are given the opportunity to manage their own learning through socio-constructive activities and self-insight learning are more successful; thus, MALL seizes the sources and tools of mobile technology (e.g voice recorder, games, translators, social apps, Wikis, podcasting, etc.) to



provide along with the socio-constructivist approach a cognitive language learning style based on problem-solving, comprehension, and recalling strategies (Kim, Kwon,2012).

2.2.3 Blended learning approach

Blended learning (BL) is defined as a mixed method that combines onsite and online teaching providing an efficient and flexible environment (Stein & Graham,2014). According to Laurillard (cited by Cheu, Lee & Simono, 2019), BL is not considered a new approach since there has always been a strong relationship between education and technology. Nevertheless, the recent growth of technological devices and their popularity in Generation Z has made possible the application of technology into classrooms (Martín-García, 2020). As stated by Martin-Garcia (2020) : “The success of b-learning is down to the fact that it is able to listen to society, properly interpreting what the technology of our time is capable of providing us at the time it demands”(p.16).

Moreover, this method makes a connection with MALL as today's learners will be digital-natives skilled in technological devices and expectant that technology will be present and available in various aspects of their lives including education as a synchronous and asynchronous manner of learning (Presky, cited by Stein & Graham, 2014). According to Tucker, Wycoff, and Green (2017) blended learning is related to personalized and online education sharing some hallmarks with mobile education, which are identified in the following points:

- Blended learning, along with MALL, offers personalized training for students.
- The principal-agent in Blended learning and MALL is the students.
- Blended learning and MALL allow peer global and local connectivity.



2.3 English Oral Fluency

2.3.1 Basic Concepts

The term ‘fluency’ is often used by educators, but its meaning may vary depending on the context (Ryczek, 2021). A fluent speaker is someone who can express himself easily by producing language in real-time while prioritizing meaning over form (Abugohar, Salheen, Yassin, Saed & Yunus, 2020). Skehan (1996) also stressed that: ‘fluency should not be separated from meaning conveyed by sentences because it reflected the learner’s ability to cope with real communicative events’ (as cited in Zhang, 2009, p. 93).

De Jon and Perfetti (2011) describe it as the measurable characteristics of speaking like the duration and number of repetitions, pauses, and hesitations (as cited in Ryczek, 2021). Oral fluency is commonly associated with appropriate speech rate including length, frequency, and distribution of silent pauses and non-lexical fillers like *um* or *uh* (Rossiter, Derwing, Manimtim & Thomson, 2010).

Segalowitz (2010) interprets fluency as a cognitive skill because it: ‘requires learners to use linguistic knowledge in a cognitively fluent way in speech processing’ (as cited in Mora & Vallis-Ferrer, 2012, p. 611).

2.3.2 A Chronological Account of EFL Oral Fluency

Throughout the years, fluency has acquired relevance; however, at the beginning of the century, it was a neglected area of English (Götz, 2013). Nevertheless, before the 1900s, fluency was a relevant point playing an important role in reading skills since in many cases a scarce number of people could read properly (Rasinski, Blachowicz, & Lems, 2012). During the 1900s, Edmund Burke Huey wrote one of the most remarkable books about pedagogy entitled *The Psychology and Pedagogy of Reading*, in which the author gives insights about the basic characteristics of oral fluency focusing on the reading ability (Rasinski, Blachowicz,



& Lems, 2012). Nonetheless, it was not until 1970 that oral fluency was considered a highly important component of English since its concept suffered a shift from an ability to recognize sounds and words automatically to decode and comprehend information at the same time (Götz, 2013).

In recent years, second language acquisition has seized the attention of language educators because of the rapid increment of non-native English speakers who need to be able to engage in academic and occupational activities (Mora & Vallis-Ferrer, 2012). According to Ryczek (2021) for the majority of English teachers acquiring fluency is the ultimate goal for non-native learners; however, achieving this purpose might be complicated since barriers like grammar, knowledge of vocabulary, and sentence structure may interfere with learners' confidence and motivation. In fact, one of the most challenging features of English is mastering oral proficiency, and hence, teachers and other authorities are often given full responsibility for improving it (Abugohar, Salheen, Yassin, Saed & Yunus, 2020). For these reasons, teachers constantly need to be updated with various techniques and strategies to deal with different learning styles, types of students, and their backgrounds and needs (Barrios, 2021).

As stated by Abugohar, Salheen, Yassin, Saed, and Yunus (2020) across the years, oral production has become popular for researchers as well as educators who are interested in how language evolves through interaction in classrooms and other non-academic environments. Ibáñez-Moreno and Vermeulen (2015) concluded that a large number of current college students are expected to be digital natives with portable technology like mobile phones, laptops, tablets, and other devices, and combining these gadgets with second language instruction facilitate opportunities for autonomous learning in the context of globalized online spaces. In this research proposal, the theoretical area to be focused on will



be the use of MALL, and its effects on second language teaching, the theories behind these approaches, and techniques with a specific focus on the speaking sub-skill of fluency.

2.3.3 Common Oral Proficiency Problems

Oral proficiency problems may be related to the language proficiency level of the students since the lack of oral proficiency may lead to mispronunciation of words, wrong vocabulary choice, coarticulation of sounds, listening interpretation, and misunderstanding of figurative language (Hudspath-Niemi & Conroy, 2013). Another oral proficiency problem is the rhythm and intonation during a conversation since the speaker needs to show understanding on the topic of discussion being able to carry out a natural conversation (Hughes, 2013).

One of the barriers to acquiring proficiency is the lack of vocabulary and wrong use of speaking rules which triggers pauses during the speech and hesitations (Ryczek, 2011). However, the main problem arrives when a person is unable to communicate appropriately using the target language since a speaker with a low proficiency level may not respond to the information effectively (Namaziandost et.al, 2019).

According to Lee and Brown (2015), oral proficiency problems can also be recognized when students perform conversations (which are unpredictable and improvised) in real-life situations; however, a person with a low proficiency level may carry out monotonous interactions with poor language skills. Many students think that assessing oral proficiency is to develop a natural and native-like speech; nevertheless, this may not be the case in EFL students thus, it is necessary to make a shift from acquiring a native-like speech to an acceptable and appropriate speech (Lee & Brown, 2015).



2.3.4 Developing Oral Fluency in Young Adult Students

According to Ryczek (2011), developing fluency in the classroom is essential to increase the overall speaking abilities of students. Real conversations require the accurate use of language developed in a fluent manner; however developing oral fluency in the classroom requires exposure to the language, meaningful interaction, and exchange of the language (Mora & Vallis-Ferrer, 2012). Besides, different factors need to be considered when developing oral fluency in the classroom such as the amount of teacher and student interaction, scaffolding, and feedback so as to increase the chance of a deeper understanding (Rasinski, Blachowicz, & Lems, 2012). Hughes (2013) stressed that the varieties of fluency depend on sociolinguistic factors and the varieties of English; hence the different factors of fluency such as speech rate vary in American English, British English, and Australian English (as cited in Götz, 2013).

Eisenmann (2019) describes the new challenges of teaching English to the new generation of adults since classrooms are more diverse and teachers need to create and accommodate the learners' needs. Fluency is one of the aspects of speech that have raised the awareness of many educators since non-native speakers are idealized by acquiring nativelike fluency (Götz, 2013). On this subject, Eisenmann (2019) argues that to assess oral fluency teachers need to focus on different interactive tasks or activities that include individual and group presentations, discussions, debates, role-plays, improvisations, among others; yet fluency is still a very complex skill to acquire. For this reason, new methods have made an attempt to minimize the challenge of enhancing oral production being one of them the use of digital assessment tools (mobile learning devices, computer devices, and learning applications (Eisenmann, 2019). According to Haythornthwaite et.al (2016), the new



generation of learners lives in a decade of transformation driven not just for technological aspects but social changes since the technological era has arrived bringing new resources in the education system such as asynchronous and synchronous communication.

2.4 Oral Fluency Techniques

2.4.1 Language immersion

Language immersion is a technique to acquire a foreign language based on the notion that a second language can be learned in a similar way that learners acquire their mother tongue (Howard et al, 2018). According to Teddick, Christian & Fortune (2011), a clear example of language immersion is bilingual schools in which its main objective is learners obtaining additive bilingualism by the constant exposure of the language. These authors also expose that immersion programs have had successful outcomes in European countries in which language immersion is accompanied by Content-Language-integrated-learning (CLIL), that is to say, that English is not taught as a subject but as the media to teach a subject.

2.4.2 MALL tools

Xu and Peng claim that (2017) mobile technologies embrace social communication features that give teachers the opportunity to review and provide comments regarding learners' performance enabling them to communicate with ease and flexibility via voice messages, videos, and texts. Besides, mobile learning promotes cooperative learning giving students the chance to be part of assessment activities regardless of the time of the day or place (Chao et al, 2014). These characteristics clearly benefit oral fluency acquisition because digital tools allow students to get real-time feedback either from teachers or classmates (Shih, 2010). Li (2010) exposes that corrective feedback on learners' oral production is a helpful instrument for second language learning. According to Sauro, corrective feedback is fundamental when scaffolding students to notice potential errors between their production



and the target language form, expanding their range of vocabulary and fluency too (as cited in Xu & Peng, 2017).

Besides, Yarra et al. (2019) acknowledge that second language learners usually obtain oral proficiency by “correct pronunciation of words with appropriate pauses”, which can be accomplished through detailed feedback when using mobile apps. They also mention that automatic feedback often manifests as scores based on the correctness of pronunciation regarding the expert’s audio and learner’s recorded audio, so students can listen, repeat and revise their pronunciation mismatches. Feedback might also occur when instructors create and send regular reminders, quizzes, and requests that may initiate discussion inviting learners to give feedback through questions and comments about each other’s oral performance (Elias, 2011). Finally, portable devices help to enhance oral competence since learners are able to find and create private spaces individually or as part of a group where they can practice speaking without pressure and anxiety (Kukulska-Hulme, 2020).

2.4.2.1 Mobile-Peer Assessment (M-PA)

Self and peer-assessment strategies are widely used in classrooms, being the last strategy beneficial in formative and summative evaluation since peer-assessment is associated with progressive feedback and improvement (Chen, 2010). The previous author also mentions that encouraging peer assessment stresses the importance of the student’s progressive learning considering that learners will not only focus on their grades but on the phases of their learning by identifying their strengths and weaknesses.

Nowadays, peer-assessment strategies can be combined with modern devices. As authors, Zheng, Chen, Li, and Huang (2016) consider Mobile-Peer Assessment as a mobile phone learning system meant to support interactive peer review to engage pupils in learning. In agreement with this statement, Chao et al, (2014) determined that M-PA is indeed a



mechanism that allows students to improve work interpretation accuracy, constantly interchange valuable information, represent their thinking, and reflect upon their work. Another quality of M-PA is rising classroom participation since mobile devices can be used as a platform to provide anonymous feedback to learners during individual activities (e.g oral presentations, debates, speeches, etc) permitting students to obtain significant comments not only from teachers but also from their classmates; however, educators need to prepare evaluation criteria to avoid non-meaningful feedback while applying this strategy (Chen,2010).

2.4.2.2 MELR (Mobile English learning resources)

MELR is a term to describe the variety of functions and applications of mobile devices to support educational areas (Cambridge Press, 2018). According to Godwin-Jones (2011), mobile phones have shifted to become more powerful and accessible to mobile apps including phrasebooks, flashcards applications, dictionaries, audiobooks, among others. MELR depends, in a major percent, on the creativity of the person who is determined to apply it in a learning environment since teachers and individuals can select an ideal mobile resource according to the subject area, English level, and goals (Tucker, Wycoff, & Green,2017). Nowadays, teachers can choose from various mobile social services aimed at educational practices such as SNS (Social Networking Services), mobile podcasting, ASR (Automatic Speech Recognition) services, among others to create a student-centered language environment (Kim & Kwon, 2012).



Chapter III

Literature Review

3.1 The effects of MALL in language learning

MALL technology has become a growing field in the study of teaching and learning. Even though mobile devices are rapidly spreading and adapting to society in general, much information needs to be covered (Miangah & Nezarat, 2012). Thus, this specific framework will report empirically supported evidence regarding the relationship between mobile learning and students' performance and the perspectives towards this approach. Therefore, a series of articles were analyzed to describe the effectiveness and use of MALL on second language learning and the tools applied for oral fluency. The following research papers combine qualitative and quantitative approaches to synthesize data and results concerning MALL's influence on EFL settings.

Hwang et al. (2014) and Wang (2016) concluded that an authentic environment is a requirement for effective learning since it offers the possibility to solve and work with real-world problems in instructional contexts. Author Wang (2016) carried out a mixed-method study to review the effectiveness of integrating mobile technology in language learning. The author also remarks that technology can positively impact all language skills and subskills (i.e., listening, writing, reading, speaking, grammar, and vocabulary) by promoting social language and shared interactions.

Therefore, the following sections will address and focus on how MALL can be adapted to different components of second language learning, such as productive skills, receptive skills, and extralinguistic aspects, by gathering empirical evidence based on quantitative and qualitative research approaches.



3.1.1 MALL on productive skills

Shadieff and Yang (2020) address a variety of modern technologies that can enhance language learning, especially language output: writing and speaking along with vocabulary. According to these researchers, these two skills are highly demanded by EFL learners. Therefore, the most effective digital tools used for productive skills with their research studies and results are described below. Research regarding this section has been primarily qualitative. Authors have worked with several data-collecting instruments such as surveys (McCrocklin, 2016), questionnaires (Al-Shehab, 2020), interviews (McCrocklin, 2016), and observation notes (Al-Shehab, 2020). The participants who took part in these studies were EFL learners who came from various cultural backgrounds and had different English levels of proficiency ranging from elementary (A2) to intermediate (B1) (Al-Hamad, Al-Jamal, Bataineh, 2019; McCrocklin, 2016; Al-Shehab, 2020). Golonka et al. (2012) and Hwang et al. (2014) agree that among all digital tools, ASR (Automatic Speech Recognition), a component of speech software, is valuable when enhancing pronunciation and other speaking sub-skills in general.

Golonka et al. (2012) and Hwang et al. (2014) reported that ASR, a computer-based function, have three primary purposes, which consist in receiving input through a microphone to recognize utterances, including learner's prosody (patterns of stress and intonation), then contrasting the learner's pronunciation acoustically with a target language sample, and finally giving immediate feedback (output) based on the student's performance. Golonka et al. (2012) and Ali and Bin-Hady (2019) also name other complementary features, such as offering the chance to practice speaking individually or through a simulated dialogue.

McCrocklin (2016) carried out Mixed-Methods studies on the effectiveness of ASR in oral speech production. The previous author worked with EFL learners applying ASR mobile



systems to develop spoken discourse to enhance and practice fluency through voice recording and repetition. In the end, consistent empirical results proved that ASR is a helpful feature that can strengthen pronunciation and grammar in speaking abilities (McCrocklin, 2016)

However, learners can encounter some issues regarding speech recognition (Shadiev & Yang, 2020). For example, McCrocklin (2016) and Golonka et al. (2012) informed that accurate feedback rarely meets speech recognition, as well as different accents and their spoken speeds. Golonka et al. (2012) emphasized the lack of reliability when comparing the feedback accuracy coming from the program and human's judgment of pronunciation, which may cause misunderstandings and meaningless information assimilation in learners. Thus, further investigation is recommended to recognize technological strategies and employment (Shadiev & Yang, 2020).

In respect of the second productive skill, Malekzadeh and Najmi (2015), and Al-Hamad, Al-Jamal, Bataineh (2019) have identified significant changes in students' writing competency after incorporating MALL in the learning process by making use of different mobile applications and platforms. Al-Hamad, Al-Jamal, Bataineh (2019), and Malekzadeh and Najmi (2015) implemented quasi-experimental designs about the uses of MALL to enhance grammar using mobile grammar software, mobile text service message, and task-based activities. The previous authors found positive effects, demonstrating that MALL had a beneficial effect on learners' writing skills and motivation.

Nevertheless, students may experience frustration, a distraction from learning tasks (Shadiev & Yang, 2020), and a lack of digital knowledge (Al-Shehab, 2020). Ziegler (2015) identified problems with learners when using abbreviations and symbols (i.e. emojis), instead of using proper language. Al-Shehab (2020) argued that students being skillful at using technology does not guarantee pupils possessing enough digital literacy when using mobile



phones for academic purposes. Lim (2014) found that students might feel discouraged when using the Internet to complete vocabulary assignments due to content overload. Thus, Al-Shehab (2020) suggested that future research cover innovative strategies and techniques to fulfill current learners' expectations.

3.1.2 MALL on receptive skills

This particular area of research has encompassed Mixed-Methods studies. Researchers developed data-collecting instruments such as questionnaires, surveys, interviews, and observation techniques(Hsu, 2013; Read & Barcena, 2016; Wang, 2016; Zhang, 2016; Helwa,2017). Participants were EFL university learners with different native languages and English levels (Hsu,2013; Read & Barcena, 2016;Zhang, 2016; Helwa,2017).

The relationship between listening and MALL was explored by researchers Read and Barcena (2016), Zhang (2016), and Helwa (2017) through mixed-methods approaches based on questionnaires, interviews, and semi-structured surveys to analyze the effectiveness of MALL's implementation to enhance EFL learners' listening comprehension skills and vocabulary learning. Read and Barcena (2016) and Zhang (2016) identified that the mobile learning approach offers an efficient alternative to back teachers' guidance and that MALL had a substantial impact on student's performance and motivation in English learning. Authors Read and Barcena (2016), Zhang (2016), and Helwa (2017) concluded that EFL listening comprehension and vocabulary learning were developed after the MALL application. Nevertheless, Helwa (2017) recommends that teachers be trained on utilizing MALL for teaching and curriculum adaptations.

Researchers Hsu (2013), and Wang (2016), conducted mixed-method studies with EFL learners divided into experimental and control groups. Altogether, the findings indicated that the experimental groups working with mobile devices improved reading comprehension,



positively affecting learners' satisfaction and motivation. The previous authors also reported that mobile learning approaches could cause meaningful changes in learners' reading comprehension.

3.1.3 Extralinguistic effects of MALL

This particular area of research has mainly qualitative studies and a few quantitative and quasi-experimental studies. Researchers developed data-collecting instruments such as observation and interviews (Ibáñez-Moreno & Vermeulen, 2015), closed-ended questionnaires for quantitative research (Ali & Bin-Hady, 2019). The participants were EFL university learners with various levels of proficiency and competence (Ibáñez-Moreno & Vermeulen, 2015; Ali & Bin-Hady, 2019).

Schmidt (2010) defines the term 'extralinguistic' as a language situation out of the linguistic field, but still related to academic settings with motivation, emotions, attitudes, and personality that greatly influence language learning. Kamaruddin et al. (2019a) believe that the extralinguistic aspect "is also not something that is foreign to the domain of education nor can both be separated, especially from the domain of language education." (p. 136). Kamaruddin et al. (2019b) regard extralinguistic components as necessary in language learning since they provide valuable information about second language acquisition processes.

Anjomshoa and Sadighi (2015) recognize that motivation has two main categories: intrinsic and extrinsic. These authors identify intrinsic motivation beginning inside an individual without expectations of rewards, while extrinsic motivation holds the anticipation of a reward coming from any other source than the person. Zaliza et al. state that "motivation is crucial in the process of teaching and learning as it can determine the direction and efficacy of a person to learn a foreign language." (as cited in Kamaruddin et al., 2019b, p.29). In



regards to students' attitudes, Kamaruddin et al. (2019a) perceive this feature as "the effect of likeness or disagreement towards any situation of object given" (p. 139). Gömleksiz (2010) associates this concept with language learning by describing students' attitudes as one of the leading factors of successful English learning.

Researchers Chen et al. (2020) and Ali and Bin-Hady (2019) conducted mixed-method studies to explore the impact on learners' second language acquisition motivation and attitudes towards mobile language learning tools. Participants were EFL learners who used Whatsapp, a mobile application (Ali & Bin-Hady, 2019) and Augmented Reality theme-based learning (Chen et al., 2020). In both studies, learners were selected based on their level of proficiency and primarily worked with questionnaires to gather opinions and thoughts. Overall, the results revealed that learners' attitudes towards these instruments were positively related to reducing anxiety and boosting self-confidence.

On the same subject, other extra-linguistics components are emotions and personality, which may significantly impact education. Authors, Ibáñez-Moreno and Vermeulen (2015) and Chen et al. (2020) studied the effects of MALL in oral communication and determined positive feelings on learners. These authors determined that introverted learners tend to be more comfortable using MALL since they reduce their anxiety while performing speaking assignments; however, extroverted students prefer face-to-face communication to assess oral skills.

Nonetheless, authors Ali & Bin-Hady (2019) and Ibáñez-Moreno & Vermeulen (2015) acknowledged that negative and positive emotions play a significant role in students' learning outcomes. However, identifying emotions in an educational context may present some barriers since some aspects such as individual emotions (learner's inner experience) and



expressive emotions (emotions that are visible to others) need to be considered (Ali and Bin-Hady, 2019).

3.2 The use of MALL for oral fluency in EFL classrooms.

Language teaching is often a balance between language activities and language systems; notwithstanding, the lack of intervention of students during speaking activities makes it difficult to reinforce this skill (Rossiter et al., 2010 & Rasinski, Blachowicz, & Lems, 2012). Researchers Khan (2010) and Namaziandost et al. (2019) have connected this lack of engagement with socio-psychological factors to join anxiety and fear as triggers of the lack of participation in classroom activities. Therefore, the following research papers in this section combine qualitative, quantitative, and Mixed-Methods approaches to synthesize data and results concerning MALL uses for oral fluency in EFL environments.

The absence of content immersion to practice the language restricts access to a successful oral education; nevertheless, globalization has led to many changes in the way people learn and teach (Ibañez-Moreno & Vermeulen, 2015 and Ataeifar et al., 2019). These authors have also noticed that mobile devices have experienced exponential growth, and their benefits are being applied in education under the term of Mobile Assisted Language Learning (MALL). For oral fluency purposes, MALL offers several benefits to develop this area of English; hence, mobile devices are used to engage students in oral practices through applications and games (Wang, 2016).

In order to connect oral fluency development with MALL, researchers have recognized different requirements that mobile devices need to accomplish, such as the multimodal practice, feedback, individualization, collaboration, real-life practices, explanatory learning, and different resources available in mobile devices (Zheng et al., 2016; Read and Barcena, 2016). Nevertheless, since the fluency ability focuses on factors such as



speech, frequency rates, length, and pauses during a conversation, mobile devices may not have enough potential to rate such factors since they are not initially designed for educational purposes (Read & Barcena, 2016; Ibañez-Moreno & Vermeulen, 2015).

At the same time, increasing oral fluency is essential to interact and exchange information with other speakers of the language; thus, mobile devices may offer particular advantages to practice the language by engaging students in real-life activities, gamification, and the use of ICT's (Francis & Shannon, 2013). Consequently, this section will collect and analyze different studies to understand MALL practices and the teacher's perspective on this technique.

3.2.1 The potential of ICTs in education

This section has included qualitative studies. Authors have worked with a variety of data-gathering instruments such as questionnaires (Ruhalahti, Korhonen, & Rasi, 2017), interviews (Francis & Shannon, 2013), and focus groups (Ruhalahti, Korhonen, & Rasi, 2017). The participants were EFL university learners with several proficiency levels (Francis and Shannon, 2013; Ibañez-Moreno & Vermeulen, 2015; Ruhalahti, Korhonen, & Rasi, 2017).

The emergence of the Information and Communication Technologies (ICTs) presents multiple benefits to question traditional teaching methods (Ibañez & Vermeulen, 2015).

Researchers Chen (2010) and Francis & Shannon (2013) consider implementing ICTs practices as an effective methodology to favor digital learning because they may positively impact intrinsic motivation by promoting curiosity, autonomy, feedback, and individual learning. Since ICTs are viewed from a social perspective, many of their characteristics are based on developing critical thinking; yet its application leaves some questions. Researchers Haythornthwaite et al.(2016) mention that ICTs may shift the role of the teacher from active



to passive, and it is crucial to take into account that many teachers have not mastered the uses of ICTs tools for learning practices.

Among the studies that have investigated the use of ICTs, researchers Chang & Lin (2019) and Ruhalahti, Korhonen, and Rasi (2017) detailed that most teachers have admitted to having used ICTs tools in a class; however, teachers reported that older students might present some barriers due to eyesight and hearing difficulties. In this subject, Ruhalahti, Korhonen, and Rasi (2017) consider that ICTs tools need longer planning because many activities may consume time during a class and lead teachers to be reluctant and discouraged to its application. Another factor is the lack of equipment in a classroom, the diachronic aspect to investigate the trajectory of teachers when using ICTs tools, and the engagement of institutions to apply modern technology in classes (Ruhalahti, Korhonen, and Rasi, 2017).

Conversely, for researchers Francis and Shannon (2013) and Cheung et al. (2019), these ideas were not accurate since teachers preserve a pivotal role in education since they are the ones who set up tasks based on the learning objectives of the course; then, ICTs may be integrated as a methodology. The authors also regarded that mastering ICTs does not require long-term training; however, these practices need to go along with didactic perspectives. These arguments were supported by researchers Ruhalahti, Korhonen, and Rasi (2017) and Chen (2010), who mention that current learners are digital natives, and the several advantages that ICTs may have in their professional life since these technologies offer a multimodal and plurilingual method.

3.2.2 Teachers Perspectives on MALL

The following papers comprise mixed-method studies (Ahn & Lee, 2015; Helwa, 2017), qualitative approaches with data-collecting instruments such as questionnaires and observations (Zou, Li, & Li, 2018; Francis & Shannon, 2013), quantitative research through



surveys (Ibrahim & Kadiri, 2018). In this case, participants consist of non-native English teachers (Francis & Shannon, 2013; Helwa, 2017; Zou, Li, & Li, 2018; Ibrahim & Kadiri, 2018).

One of the first challenges that educators face when implementing MALL is designing relevant activities to improve learning efficiency (Helwa, 2017 and Zou, Li, & Li, 2018); thus, it is necessary to facilitate teachers' training on MALL to ensure its effectiveness and to recommend curriculum designers to make use of MALL when planning a course (Miangah & Nezarat,2012 and Helwa, 2017)

In this subject, Francis and Shannon (2013), Ibrahim and Kadiri (2018), and Cheng et al. (2020) argue that MALL methodologies along with blended learning reflect a shift in the role of a teacher to a facilitator in the classroom. Hence, teachers need to assist learners to assess their progress by setting specific objectives, providing self-assessment strategies, and accommodating to their reality. Nevertheless, authors Ahn and Lee (2015) and Al-Shehab (2020) believe that many teachers assume that mobile devices may interfere with the progress of a course by causing a distraction, disruption of concentration, the encouragement of fraud, and the facility to cheat.

Authors Cheng et al. (2020) determine that despite the efforts that many teachers make to maintain cell phones away from the classroom, it is undeniable that they are compliant with this rule since, on many occasions, cell phones are confiscated. However, mobile phones should not be a marginalized aspect of learning because they may enrich and expand various learning possibilities since today's learners are digital natives (Ahn & Lee,2015 and Francis & Shannon, 2013).



3.3 MALL tools for fluency production

The current development of technological devices has increased its pedagogical integration in the educational system; thus, mobile devices have become ubiquitous, providing a multifunctional tool in the daily life of students (Ali & Bin-Hady, 2019; Wang, 2016). The following research papers in this section combine qualitative, quantitative, and mixed-methods approaches to synthesize data and results concerning MALL tools for fluency production.

According to Francis and Shannon (2013) and Al-Hamad, Al-Jamal, Bataineh (2019), mobile devices are growing fast, but for some people, their integration at the educational service has a negative image. Read and Barcena (2016) and Wang (2016) point out that students are not reluctant to apply mobile technology in learning; nonetheless, the implementation of MALL for oral fluency development needs to follow some prerequisites such as access to broadband Internet and equipment, technological mastery for the teacher, and a more complex lesson planning.

Nevertheless, considering that fluency is a complex ability to acquire because of the lack of possibilities to practice the language in a natural context, integrating technological devices into the class may increase the speaking participation and feedback correction between learners and teachers (Hudspath-Niemi & Conroy, 2013; Ryczek, 2021). Researchers Kukulska-Hulmes (2020) and Götz (2013) agree that MALL use is beneficial, especially for non-native speakers in a migrant condition, since these groups may have an urgent need to learn the language for oral communication purposes. Therefore, in the following section, a series of articles will be analyzed to describe the uses of mobile technology applied in education.



3.3.1 M-PA (Mobile-Peer Assessment)

This section has analyzed a variety of research papers divided into mixed-methods studies, in which authors gathered data by utilizing surveys, questionnaires, observations, and interviews (Chen, 2010; Zheng et al., 2016; Ruhalahti, Korhonen, & Rasi, 2017; Ataeifar et al., 2019), and a quasi-experimental studies including control and experimental groups (Chang & Lin, 2019). Participants were both professors and EFL college students (Chen, 2010; Chao et al., 2014; Zheng et al., 2016; Ruhalahti, Korhonen, & Rasi, 2017; Ataeifar et al., 2019; Chang & Lin, 2019).

Mobile-Peer Assessment strategies take relevance because of their association with socio-constructive and cooperative techniques (Chao et al., 2014). According to Tucker, Wycoff, and Green (2016) and Zheng et al. (2016), combining technology with peer assessment strategies calls upon the students to play an active role in their learning, developing autonomy and cooperation. One of the main aspects of M-PA is to evaluate the quality and quantity of learning assignments; hence, M-PA seeks to develop a virtual modality of evaluation in which students can receive feedback from their peers (Chen, 2010; Zheng et al., 2016).

According to Zheng et al. (2016), M-PA has been applied to reinforce different English skills, being the oral aspect of language one of its applications. One of the advantages of M-PA for oral assignments is based on the affective and social aspects, since speaking may be a complex area to develop due to the lack of participation and the complicated access to practice the language (Ataeifar et al., 2019; Chang & Lin, 2019). Researchers Ataeifar et al., 2019 and Zheng et al. (2016) state that M-PA strategies might help students increase feedback and participation to reduce anxiety and boost their self-esteem during oral activities. Authors Chen (2010), Zheng et al. (2016), Chao et al. (2014), on the contrary, declare that one



challenge of M-PA strategies is that some students may receive unnecessary feedback from their peers. Consequently, Chen (2010) establishes that:

Most students were uncomfortable with criticizing others' performance despite the secure anonymity, and many students provided vague and irrelevant feedback, which was useless for recipients of feedback-seeking to improve their performance. Some students even purposely gave peers unjustifiably low scores so that the scorers, themselves, could possess advantageous positions (p.3).

Nevertheless, Cheng (2010) and Zheng et al.(2016) reported that students' perspectives towards M-PA were positive. These authors remarked that most of the participants involved in the M-PA study agreed that the method was beneficial since it guided students to develop critical thinking, empathy, and self-reflection. Authors Chang and Lin (2019) and Ruhalahti, Korhonen, and Rasi (2017) studied M-PA effects and their relationship with collaborative learning in the same area. Chang and Lin (2019) presented empirical evidence about Mobile Peer Assessment strategies (M-PA) on oral skills. The 60 participants involved in the study were divided into two groups: 30 students guided by teacher instruction and 30 students guided by M-PA. The results showed that the M-PA strategy outperformed the direct teaching practice.

Ruhalahti, Korhonen, and Rasi (2017) studied the Dialogical Authentic Net learning Activity model (DIANA) and found a similar result. This study allowed them to confirm the relationship between mobile technology and authentic and collaborative learning. Additionally, the results revealed that learners developed their Zone of Proximal Development by increasing their problem-solving abilities and knowledge construction.



3.3.2 MELR (Mobile English Learning Resources)

Finally, this section has predominantly shown Mixed-Method approaches with several studies using observation, surveys, questionnaires, and interviews as main instruments (Chao et al., 2014; Ataeifar et al., 2019; Zhang & Perez-Paredes, 2019). Participants were separated into two groups: EFL undergraduate university students (Ataeifar et al., 2019; Chao et al., 2014), EFL postgraduate university students (Zhang & Perez-Paredes, 2019).

When applying Mobile English Learning Resources (MELR), it is important to consider that these tools will never replace English lessons; instead, they will reinforce and improve students' skills in a determined area of English (Zhang & Perez-Paredes, 2019). Among the studies investigating MELR for oral purposes, Zhang & Perez-Paredes (2019) and Ataeifar et al. (2019) found beneficial effects when using MALL in students' oral competence. Ataeifar et al. (2019) concluded that the use of mobile social networking sites such as Voice Thread and Twitter improved students' oral skills. The authors also noticed that mobile technology increases the learners' autonomy by allowing them to practice the language any time possible.

Zhang & Perez-Paredes (2019) investigated some functions and motivations to apply MELR in the classroom to determine the uses and motivations behind second language learners' MELR (Mobile English Language Resources) use. The two main reasons for using this supplementary tool were better communicative skills for job opportunities and vocabulary development. The study also revealed that MELR emphasizes social interaction and collaboration alongside peers and teachers, which allow institutions and individuals to pursue language learning programs that are not exclusively exam-driven.

Authors Chao et al. (2014) and (Zhang & Perez-Paredes, 2019) affirm that alongside MELR are virtual and augmented reality tools to practice speaking and boost conversion



fluency. Virtual reality (VR) is defined as a medium with interactive and simultaneous environments to offer realistic experiences in a virtual world; notwithstanding, VR can be applied to language learning as an immersion tool to reinforce different areas of English. On the other hand, Augmented Reality (AR) represents a less common but emerging aspect of learning practices. *Augmented reality* is defined as a technology capable of transporting virtual objects into the real world by giving the user a sensory experience (Chao et al.,2014).

Authors Chao et al. (2014) examined the effectiveness of AR along with MELR. The study indicated that learners hold a positive perspective towards using AR technology combined with mobile technology. Even though VR and AR applications may be beneficial to enhance language learning, these tools have some limitations, such as the limited systems of VR and AR available, the high cost of smartphones to download the applications, and the passive role that teachers may acquire when implementing this technology in learning.

Zhang, and Pérez-Paredes (2019) and McCrocklin (2016) remarked that many technological resources (computers, mobile devices, personal digital assistants, VR and AR applications, among others) create authentic learning experiences providing helpful feedback for students, and they can be applied to enhance all the English skills and sub-skills.

This paper has reviewed the literature on the impact of MALL on second language learning of tertiary students in EFL settings around three main areas: the possible effects of MALL in language learning, its use for oral fluency, along with tools for fluency production. According to empirical evidence, the findings have shown that mobile apps, platforms, and digital tools aid in enhancing learners' proficiency regarding the four primary language skills since participants exposed to MALL approaches outperformed those without any intervention and showed better levels of competence, as well as, motivation, satisfaction, and decrease of anxiety. MALL implementation also can support teachers' instruction by extending the



variety of language experiences. Furthermore, oral fluency development presented advantages when using MALL tools such as students' autonomy and collaborative learning by providing authentic language and instant feedback, aside from a wider vocabulary acquisition and pronunciation.

On the other hand, several limitations were acknowledged concerning the use of mobile learning in educational settings. Students are very likely to face issues such as lack of digital literacy, distraction, and frustration. Moreover, most educators hold negative misconceptions towards mobile technology due to lack of proper training, higher fraud possibilities, and the teacher's passive role in the classroom. In conclusion, further research should cover the causes for teachers' and learners' ineffective mobile technology management in academic learning.



Chapter IV

Methodology

Research synthesis is a written discussion that combines and compares individual findings inferring relationships among sources (Norris& Ortega, 2006). According to Carter (2020), an explanatory synthesis presents a topic by describing something to help the reader to understand a topic. For the purposes of this research synthesis, existing studies were collected to be later analyzed in regard to the research questions that guided this study. The material found concerning MALL was selected based on specific inclusion and exclusion criteria. Furthermore, the references of these sources were explored for additional studies.

The databases Research Gate, Taylor & Francis, ERIC, and Google Scholar were searched for locating studies on MALL. Additionally, the search was conducted on several journals in the field such as *CALICO*, *British Journal of Educational Technology*, *The Journal of Educational Research*, *Educational Research*, *Turkish Online Journal Of Distance Education*, among others which we considered essential and reliable for the research synthesis. The key terms for this research included:

- | | |
|--------------------|-----------------------------|
| 1. MALL | 5. Second Language Learning |
| 2. Fluency | 6. EFL |
| 3. Strategies | 7. Speaking |
| 4. Mobile learning | 8. Oral Production |

Inclusion/exclusion criteria

Several studies regarding the role of MALL in language learning were identified in order to determine its relevance for analysis. Therefore, only the studies that met the following criteria were included:



- a. The studies needed to be published between 2009 and 2020. This time frame was chosen since it offers updated evidence of the impact of MALL.
- b. The articles referred to strategies that focus on the use of MALL in EFL/ ESL classrooms since this study aimed to consider MALL as an educational tool in these environments.
- c. The data analysis of the papers were either qualitative, quantitative, quasi-experimental, and Mixed-Method nature. These research designs were selected in order to report empirical evidence to verify the meaningfulness of the study.
- d. The articles needed to be mainly applied to EFL tertiary classrooms, focusing on non-native English speakers since this type of learner is the main topic of the research.
- e. The research focused on articles based on different strategies to assess English fluency.
- f. Peer-reviewed articles published in Academic Journals were selected to make the present research more reliable in terms of quality and reliability.

On the other hand, some studies were excluded from the analysis to contrast the categories established beforehand.

- a. The articles published before the year 2009 were excluded since they did not provide updated information.
- b. Unpublished studies were not used because the reliability of the information could be questioned.
- c. Articles with no authors were excluded because they did not provide reliable data.



- d. Papers that analyzed any other language than English were excluded since other languages are not part of the scope of the study.

Chapter V

Analysis

The analysis of this study consists of two stages to provide background to the readers.

5.1. Stage 1

The first stage encompasses the analysis of the characteristics of 20 studies. Some were categorized among these research papers to determine the study's appropriateness for inclusion and others to answer the research questions.

Table 1

Publication dates of primary studies

<i>Year of publication</i>	<i>N. of publications</i>	<i>%</i>
2010-2013	3	15,00%
2014-2017	10	50,00%
2018-2020	7	35,00%

N=20

Table 1 shows that 10 (50,00%) of the 20 primary studies were published over three years, between 2014 and 2017. This indicates that MALL is an ongoing field of research. In addition, 7 (35,00%) of the articles published between 2018 and 2020 also remarks on MALL's recent popularity and rapid evolution (Duman et al., 2014).

Table 2

Research design applied to the study

<i>Research Design</i>	<i>N. of studies</i>	<i>%</i>
------------------------	----------------------	----------

Quantitative	2	10,00%
Qualitative	5	25,00%
Mixed-Method	11	55,00%
Quasi-experimental	2	10,00%

N=20

Table 2 describes that more than half of the 20 studies, that is to say, 11 (55, 00%) articles, involve a Mixed-Method nature. Mixed-Method Research maximizes the strengths and minimizes the weaknesses from both qualitative and quantitative approaches to provide substantial evidence for conclusions through the verification of results (Johnson & Onwuegbuzie, 2004). Furthermore, 5 (25, 00%) out of the 20 research papers are qualitative. Qualitative research enables the researcher to interpret information based on personal experiences and perspectives (Johnson & Onwuegbuzie, 2004), which provides a better examination of complex diverse realities while researching to identify issues and find solutions more efficiently (Wang, 2018). Therefore, all these studies analyzed how MALL assists English learning by acknowledging and examining educators' and students' opinions, behaviors, and experiences, determining its usefulness and engagement in the language learning process (Zou et al., 2018). Moreover, most research papers perceive m-learning as an efficacious supplement for teachers in classrooms because of its multimedia format, resources, and interactivity between participants (Beatty, 2013). Overall, MALL appears to be a promising pedagogic alternative since it identifies the target's language functions and nature and reinforces these aspects through practice and feedback using human cognition, memory, and senses (Traxler, 2013).



5.2 Stage 2

After the analysis of the main characteristics of primary studies, the main findings will be discussed concerning the two research questions.

5.2.1 What are the effects of using MALL on higher-education students' oral fluency, as reported in the available empirical evidence?

Table 3

Effects of using MALL on higher-education students' oral fluency

Effects of using MALL on higher-education students' oral fluency	N° of studies*	%**
Pronunciation improvement	1 *	9,10%
Speaking hesitation and speech rate improvement	2 *	18,20%
Vocabulary accuracy improvement	4 *	36,40%
Overall improvement in the three areas	4	36,40%

N=11

* Studies are counted in more than one category

** Each percentage is calculated based on the total number of studies used (11).

Note: The exact number of primary studies is 11 since only these research papers focused on MALL on oral fluency



Table 3 aimed to answer the first research question regarding the effect of MALL on higher-education students' oral fluency. As shown in Table 3, three oral components such as vocabulary, speech rate, and pronunciation were analyzed. According to Ataeifar et al. (2019), Chang & Lin (2019), Zou, Li, & Li (2018), and Ali and Bin-Hady (2019), MALL offers several opportunities to enhance overall elements of oral fluency. The previous authors mention that MALL is a remarkable tool to improve three components of fluency (vocabulary, speech rate, and pronunciation), providing learners a reliable resource to practice and improve natural conversation avoiding stuttering. This explains why, as shown in Table 3, 36,4% of studies are focused on developing more than one component of oral fluency instead of studying a single element through the use of MALL.

However, authors Ruhalahti, Korhonen, and Rasi (2017) and Helwa (2017) argue that vocabulary accuracy is one of the most influenced by the use of MALL. Malekzadeh and Najmi (2015) state that mobile devices were crucial to improving vocabulary and literacy skills since students considerably improved their vocabulary range during speaking activities through MALL. Al-Shehab (2020) claims that measuring phonological aspects through MALL will involve more complex research; consequently, 9.1% of studies aim to measure different aspects of pronunciation (intonation and rhythm) through the use of MALL. Nevertheless, authors Ibrahim and Kadiri (2018) explain that MALL is also beneficial for recognizing English phonemes, enhancing students' intonation and rhythm by correcting phonological mistakes and therefore increasing the learner's pronunciation.

Furthermore, Read and Barcena (2016) state that MALL is also beneficial to improve speech rate; thus, MALL is a good tool to improve students' hesitation, intonation, and rhythm while speaking. However, Ataeifar et al. (2019) mention that enhancing speech rate



through the use of MALL is conditioned by MELR (Mobile English Resources), implying that not all mobile features (audio, voice, and video) and mobile apps may be beneficial tools to enhance speech rate. Thus, authors Read and Barcena (2016) and Chang and Lin (2019) have either adapted their material or created a new mobile app to increase and measure speech rate. As a complement to the previous claim, Read and Barcena (2016) developed an ANT (Audio News Trainer) to improve speech speed and accent, while authors Chang and Lin (2019) worked with an Instant Response System (IRS) to assess speaking through oral recording activities.

Finally, the analyzed information provides evidence that MALL positively affects learners' oral fluency by enhancing pronunciation, vocabulary accuracy, speech rate and preventing speaking hesitation.

5.2.2 What are the methodological aspects of the inclusion of MALL, as reported in the available empirical evidence?

Most studies regarding MALL presented positive outcomes. The analysis of nine research studies demonstrate that MALL contributes significantly to the improvement of the four main skills such as writing (Malekzadeh & Najmi, 2015; Al- Hamad et al. 2019; Shadiev & Yang, 2020), listening (Read & Barcena, 2016; Zhang, 2016; Helwa, 2017), reading Hsu, 2013; Wang, 2016), and especially speaking (Shadiev & Yang, 2020; Golonka, 2012; Hwang et al., 2014; Ali & Bin- Hady, 2019), which seems to suggest that m-learning effectively complements and boosts the four main language skills in general. Concerning fluency skills, MALL offers several benefits for learners when improving their oral production, such as corrective feedback, real-life practice, unlimited learning material (apps, websites, games), individual and collaborative work (Wang, 2016; Zheng et al., 2016; Read



& Barcena, 2016; Francis & Shannon, 2013; Ibañez-Moreno&Vermeulen, 2015). All these features provide valuable input for both formal and informal learning settings.

Moreover, internal aspects that influence learners' academic performance, such as motivation, self-confidence, and reducing anxiety, have been linked to the use of MALL (Chen, 2010; Hsu, 2013; Francis&Shanon, 2013; Malekzadeh&Najmi, 2015; Read&Barcena, 2016; Zhang, 2016; Wang, 2016; Ali& Bin- Hady, 2019; Al-Hamad et al., 2019; Chen et al., 2020).

Table 4

Extra-linguistics effects of using MALL on language education

<i>Aspects</i>	<i>N. of studies</i>	<i>%</i>
Motivation	8	80,00%
Self-confidence	1	10,00%
Anxiety reduction	1	10,00%

N=10

The exact number of primary studies is 10 since only these research papers focused on examining learners' extralinguistic effects.

Table 4 portrays that motivation impacts learning in 8 (80, 00%) out of 10 studies proving that students can embrace new methods. Moreover, 1 article (10,00%) recognized the importance of boosting self-confidence to determine efficacy in second language learning, whereas 1 research paper (10,00%) considered that reducing anxiety can also help in language acquisition processes.



Nevertheless, integrating MALL in EFL lessons and practices may present barriers regarding instruction and learning processes. First, teachers hold negative perceptions towards blending conventional classroom instruction with mobile learning (Francis&Shannon, 2013; Al-Hamad et al., 2019). This issue occurs due to the shift in a teacher's role from active to passive (Francis& Shannon, 2013; Ibrahim & Kadiri, 2018; Chen et al., 2020), and the lack of proper training in digital mobile users , along with scarce curriculum adaptations (Helwa, 2017; Miangah & Nezarat, 2012; Zou, Li&Li, 2018). In conclusion, MALL introduces a series of benefits, challenges, and hurdles for a second language, such as autonomous and continuous learning opportunities along with the lack of understanding from educators regarding the versatility of mobile devices to integrate education in daily activities; therefore, it is highly recommended applying m-learning technology in higher education environments.



Chapter VI

Conclusions and Recommendations

6.1 Conclusions

This research aimed to identify the effects of using MALL on higher education learners' English oral fluency and determine the methodological aspects of its inclusion. Based on the examination of several studies with Mixed-Methods, qualitative and quantitative approaches focused on analyzing the educators' and second language learners' responses and exposure to mobile technology, it can be concluded that M-learning may be beneficial for sharpening macro skills, and oral production, in particular. The analyzed studies have provided enough evidence to support MALL as a supplement in education since the outcomes from most of the research papers revealed a meaningful impact on students' academic performance in and out of classrooms.

Additionally, after examining studies related to the implementation of mobile learning in EFL tertiary students, significant correlations were found between MALL and language teaching approaches. Firstly, the Communicative Approach supports MALL's efficacy by practicing the language using real-life contexts and supplying explicit and implicit learning through audiovisual content. Secondly, MALL and Blended Learning are closely related since both combine online and onsite education to offer personalized training and connectivity without time and location constraints. Finally, MALL entails a socio-constructive perspective because it considers that a meaningful learning environment allows learners to develop the cognitive structures necessary for enhancing their skills. Likewise, students can build their knowledge, whereas educators may carry out scaffolding and problem-solving activities to increase motivation and participation.



Research on the development of productive skills through mobile learning has mainly stressed the improvement of grammar and pronunciation when applying corrective feedback and ARS (Golonka et al., 2012; Hwang et al., 2014; Ali&Bin-Hady, 2019). The studies' results in the analyzed articles indicate that pupils become involved in oral practices through individual and collaborative tasks based on real-life situations. Research also illustrated that digital tools contribute to considerable improvements in vocabulary acquisition and listening comprehension (Read&Barcena, 2016; Zhang, 2016; Helwa, 2017). Moreover, motivation and satisfaction became influential elements in students' positive reviews and evaluations regarding the use of mobile devices for educational purposes (Hsu, 2013; Wang, 2016; Chen et al., 2020; Ali&Bin-Hady, 2019); therefore, integrating MALL as a methodology in an EFL context is very likely feasible contributing to possible changes in traditional pedagogy and the curriculum's design.

Furthermore, as shown by the analysis, incorporating this method may bring new challenges such as the lack of digital literacy coming from the leading agents in this learning process, educators and learners. Due to the teachers' and authorities' reluctance to engage and apply a more actively modern pedagogical approach, mobile devices are considered unsuitable for instruction (Ruhalahti, Korhonen & Rasi, 2017; Ataeifar et al., 2019). Besides, although young generations can manipulate technology more efficiently, most do not appropriately use digital technologies regarding academic work. Indeed, mobile phones are seen as a source of disruption and fraud. In short, all these factors expose the need for institutions, teachers, and students to recognize the importance of innovative trends in education as means of adjusting to a system that requires social and curricular reforms for generations with different abilities, necessities, and attitudes.



6.2 Recommendations and Limitations

Based on the findings of this research synthesis, there are specific pedagogical recommendations. First, since MALL is considered a new strategy for second language learning, it is recommended that teachers comprehend the different techniques, benefits, and drawbacks of applying MALL to enhance English oral fluency. Thus, teachers will select the best strategies taking into account their classroom environment. Additionally, the institution's commitment to bringing the students and teachers Internet access should be considered to enhance the implementation of MALL.

Second, although a wide variety of mobile applications focus on developing oral fluency, teachers should adapt oral MALL assessments considering students' cognitive abilities to obtain better results. Hence, it is recommended to use authentic material considering students' English proficiency and interests; thus, students' motivation and satisfaction will be fulfilled while enhancing their oral proficiency.

Third, even though the Internet connection may be a crucial aspect to access different websites and applications to practice oral fluency, teachers should consider that not all institutions have this facility, and in the same way, not all learners have mobile devices. Therefore, it is essential to consider other alternatives such as M-PA and mobile features that do not need an Internet connection to carry out mobile learning practices.

Furthermore, some research-based recommendations have been formulated. First, since all the analyzed studies were based on a mixed-method approach, a recommendation is to focus the studies on a quantitative design to obtain more accurate and generalized outcomes about the effectiveness of MALL. Second, as all the analyzed studies aimed to focus on the impact of MALL on improving overall oral fluency, a suggestion is that further



research may concentrate on other specific areas of oral production. Hence, educational researchers can focus their studies on teaching and learning the correct pronunciation of English vowels and sounds to better impact their speaking skills. Third, although the studies showed positive results, further investigation should be considered as the majority of the studies were conducted in Eastern Asian universities. Therefore, it is recommended to analyze the impact of MALL in Latin American countries to provide educators and learners information similar to our context and reality. Lastly, another recommendation is to apply MALL techniques with students of different academic levels since this study focused on applying MALL to college students.



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Appendix 1

List of Primary Studies for Analysis

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